2026年暑期学校课程信息

（共188门课，233门次）

（课程信息变动中，仅供参考）

目　录

课类[1]说明：
*A类课程：仅对校内学生开放
*B、C类课程：对校内和校外生开放
*国际课程：国际暑期学校项目课程，主要对国际学生开放。

序号	课程号	课程名称	课类	开课系所	班号	学分	授课教师	备注
1	00332950	航空航天工业实习	A	工学院	1	3	周超	具体时间之后确定
2	00333050	金工实习	A	材料科学与工程学院	1	3	高嵩,莫凡洋,王永刚,孟繁琦,海晓,邹如强	7月6日-14日在昌平新燕园校区上课，选课结束后建立课程群，群里通知具体课程时间和内容安排
3	00333109	可持续性理论与实践	A	工学院	1	3	Tracy Morse(校外)	globex项目希望安排理教校内开放5人
4	00333148	工程科学应用分析	A	工学院	1	3	唐少强,Emily TIAN(校外)	globex项目希望安排理教有多块黑板的教室 校内开放10人
5	00333181	工程项目管理中的金融决策	A	工学院	1	3	Daricha Sutivong(校外)	globex项目希望安排理教校内开放5人
6	00333390	生物医学工程实习	A	工学院	1	3	孙红芳	每周1-5安排学生们每天去医院科室或者相关企业实习，周六下午组织半天的交流汇报

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7	00333724	中华语言与文化	A	工学院	1	3	ZHANG Aidong(校外)	globex项目 希望安排理教相邻两间教室（各100人容量）分组辅导讨论 校内开放0人
8	00333734	数据驱动的优化和学习	A	工学院	1	3	Bernd HEIDERGOTT (校外)	globex项目 希望安排理教 校内开放5人
9	00333754	科学机器学习：融合科学与数据	A	工学院	1	3	Andrew OOI(校外)	工学院globex项目 理教 校内开放10人
10	00333764	人工智能驱动的控制工程	A	工学院	1	3	黄迅	globex项目 希望安排理教有多块黑板的教室 校内开放10人
11	00334590	先进制造与机器人实践	A	工学院	1	3	袁小婷	新奥工学大楼b132 面向机器人大一-大三学生
12	00407810	海洋学海上实践	A	物理学院	1	1	刘永岗	请先联系ygliu@pku.edu.cn报名，然后进行手工选课。实践时间预计在7月15-22日期间。
13	00432216	量子力学（Ⅱ）	B	物理学院	1	2	钱志新	第五周周一下午2:00—5:00闭卷笔试；先修课：量子力学。
14	00437151	物理学科暑期专题研讨	B	物理学院	1	2	何琼毅	上课地点：物理学院西202

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15	01034391	仪器分析原理与实验	A	化学与分子工程学院	1	4	金长文,张新祥,李美仙,吕占霞,周颖琳,潘伟,陈明星,高珍,黄军	8月24日-9月4日开课；如选修过“仪器分析”或“仪器分析实验”课程请勿选课
16	01035260	化学中的数学	B	化学与分子工程学院	1	2	刘剑	周一周二周四周五1-2节、10-11节上课，教室希望安排在二教311或类似的扇形教室
17	01035280	化工新概念	A	化学与分子工程学院	1	1	马莲(校外)	
18	01035430	化学应用与实践	A	化学与分子工程学院	1	1	高珍,邹鹏	
19	01035480	交叉中的化学科学	A	化学与分子工程学院	1	2	张文彬	
20	01035490	AI化学实践	A	化学与分子工程学院	1	1	郑捷,李田,李霄	
21	01035530	有机化合物的合成与谱学结构表征	A	化学与分子工程学院	1	2	赵达慧,张迪	8月24日-9月3日开课
22	01130160	细胞生物学实验	A	生命科学学院	1	1	张泉,辛广伟,吕红霞,李美琪	
23	01130210	遗传学实验	A	生命科学学院	1	1	张泉,辛广伟	
24	01130912	南海海洋生态学野外实践	A	生命科学学院	1	2	李晟,饶广远,李大建,龙玉,贺新强,孟世勇,王戎疆	8月20-31日，广西钦州三娘湾；面向生态学专业高年级，须先修生物学野外综合实习；与任课教师商定题目后再选
25	01132677	分子生物学实验	A	生命科学学院	1	1	毕群,刘旖璇	

序号	课程号	课程名称	课类	开课系所	班号	学分	授课教师	备注
26	01132679	产业实习实践	A	生命科学学院	1	3	王世强,曲一铭	请关注“生声不息”公众微信号4月发布的前期培训通知，经学院审核通过后方能选课。
27	01132685	衰老生物学	A	生命科学学院	1	2	陶伟	7月6日-7月17日上课
28	01133036	生命的逻辑	B	生命科学学院	1	2	白书农,龙漫远(校外),钱紘(校外)	7月6-22日，3-6节；请选课同学6月29日前邮件联系任课教师（shunongb@pku.edu.cn），分组和领取教材预习
29	01134110	生态学野外实践	A	生命科学学院	1	2	王戎疆,贺新强	6月27日-7月9日1-12节，四川王朗自然保护区；须先修生物学野外综合实习；与任课教师商讨确定题目后再选课
30	01134140	生物学综合野外实习	A	生命科学学院	1	2	王戎疆,李晟,饶广远,李大建,顾红雅,龙玉,贺新强,孟世勇,张立光,佟向军	6月27日-7月9日1-12节，四川王朗自然保护区
31	01134140	生物学综合野外实习	A	生命科学学院	2	2	王戎疆,李晟,饶广远,李大建,顾红雅,龙玉,贺新强,孟世勇,张立光,佟向军	6月27日-7月9日1-12节，四川王朗自然保护区

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32	01134140	生物学综合野外实习	A	生命科学学院	3	2	王戎疆,李晟,饶广远,李大建,顾红雅,龙玉,贺新强,孟世勇,张立光,佟向军	6月27日-7月9日1-12节，四川王朗自然保护区
33	01138495	生命科学前沿实验模块课	A	生命科学学院	1	2	王青松,辛广伟,梁希同,李美琪	6月29日-7月10日，老生物楼323，面向生科院本科生开课，“AI辅助动物行为分析”模块
34	01138495	生命科学前沿实验模块课	A	生命科学学院	2	2	王青松,李毓龙,辛广伟,朱文苑,冯杰思	6月29日-7月10日，老生物楼223，面向生科院本科生，“基于荧光寿命检测的去甲肾上腺素探针的开发与优化”
35	01138495	生命科学前沿实验模块课	A	生命科学学院	3	2	王青松,伊成器,彭金英,辛广伟	6月29日-7月10日，老生物楼123，面向生科院本科生，“基于新型RNA编辑工具的精准操控与验证”
36	01139376	生物信息学实验	A	生命科学学院	1	1	刘凤麟	
37	01139385	生物信息产业实践	A	生命科学学院	1	2	刘凤麟,高歌,孔雷	7月6日-7月15日，1-8节
38	01230470	北斗系统与时空智能	B	地球与空间科学学院	1	2	陈秀万	
39	01231640	普通地质实习A	A	地球与空间科学学院	1	2	张志诚,许成,黄宝春,张元元,吴辉,王久源	
40	01231641	普通地质实习A讨论班	A	地球与空间科学学院	1	0	黄宝春	

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41	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	2	0	许成	
42	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	3	0	王久源	
43	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	4	0	吴辉	
44	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	5	0	张志诚	
45	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	6	0	张元元	
46	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	7	0	张元元	
47	01231641	**普通地质实习A讨论班**	A	地球与空间科学学院	8	0	张元元	
48	01231912	**五台山地区综合地质实习**	A	地球与空间科学学院	1	2	魏春景,张进江,张波,张贵宾	
49	01231913	**沉积地层古生物综合实习**	A	地球与空间科学学院	1	2	薛进庄,周敏	
50	01231914	**地球系统野外建模**	A	地球与空间科学学院	1	3	季建清,周敏	
51	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	1	0	魏春景	
52	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	2	0	张进江	
53	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	3	0	张贵宾	
54	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	4	0	李秋根	
55	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	5	0	吕增	
56	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	6	0	王潮	
57	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	7	0		
58	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	8	0		
59	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	9	0		
60	01231916	**五台山地区综合地质实习讨论班**	A	地球与空间科学学院	10	0		

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61	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	1	0	孙元林	
62	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	2	0	孙作玉	
63	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	3	0	程丰	
64	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	4	0	李秋根	
65	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	5	0	李秋根	
66	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	6	0	李秋根	
67	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	7	0	李秋根	
68	01231917	沉积地层古生物综合地质实习讨论班	A	地球与空间科学学院	8	0	李秋根	
69	01231918	地球系统野外建模讨论班	A	地球与空间科学学院	1	0	江大勇	
70	01231918	地球系统野外建模讨论班	A	地球与空间科学学院	2	0	李文博	
71	01231918	地球系统野外建模讨论班	A	地球与空间科学学院	3	0	何涛	
72	01231918	地球系统野外建模讨论班	A	地球与空间科学学院	4	0	季建清	
73	01233170	地震概论	B	地球与空间科学学院	1	2	赵克常	第四周最后一节课程安排考试
74	01233660	地球物理野外实习	A	地球与空间科学学院	1	2	李嘉琪	
75	01235260	3S野外综合实习	A	地球与空间科学学院	1	1	李培军,田原,范闻捷,任华忠,郭庆华	
76	01533300	城乡地域空间认知实习	A	城市与环境学院	1	1	阴劼	实习课程不对外院系开放！时间是考试周结束后一周
77	01535130	野外生态学	A	城市与环境学院	1	2	朱彪,唐志尧,吉成均	实习课程不对外院系学生开放！计划6.27-7.5

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78	01537530	普通地质实习	A	城市与环境学院	1	1	张家富	实习课程不对外院系学生开放。计划7.13-7.17
79	01539340	地貌实习	A	城市与环境学院	1	2	张家富,刘耕年,李有利,刘建宝	实习课程不对外院系开放！计划6.28-7.12，以老师通知为准
80	01630078	性格分析与电影	B	心理与认知科学学院	1	2	钟杰	
81	01630716	医学心理学	A	心理与认知科学学院	1	2	杨炯炯	随堂笔试，建议先修普心、实心、变态心理学
82	01630751	精神分析发展史	B	心理与认知科学学院	1	2	钟杰	
83	01831990	跨文化交流学	B	新闻与传播学院	1	2	许静,李臻怡(校外)	
84	01832150	媒体与国际关系	B	新闻与传播学院	1	2	陈开和	
85	01833970	影视文化与批评	B	新闻与传播学院	1	2	张慧瑜	
86	01834180	全球传播的新闻叙事及想象	B	新闻与传播学院	1	2	吴靖,张展(校外)	
87	01834348	健康传播研究：理论与方法	B	新闻与传播学院	1	1	许静	
88	01834349	人工智能生成内容实务（AIGC）	B	新闻与传播学院	1	2	严富昌	上课地点：学院机房522；上课时间：周一至周五，每天2-4节和6-8节。
89	02230021	三星堆与川蜀历史文化	A	考古文博学院	1	1	赵昊	理论课7月6日和7月7日，上午10至12点，红五楼5211；实践课8月25-28日。
90	02230563	考古学研究专题	A	考古文博学院	1	1	邓振华	7月8-11日，10-12点、14-16点，红五楼5211

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91	02316320	元伦理学导论	A	哲学系	1	2	赵新侃	7月6.7.8./10.11.12.13./15.16.17.18.19./22.23.24上课(15-17点);24日随堂闭卷考试
92	02334141	科学哲学前沿	A	哲学系	1	2	陆俏颖,Matthew Sims(校外),Nicholas J. Teh(校外)	7月6-17日每周周一至周五上课，3-4节课堂教学，7-8节讨论课
93	02431420	俄罗斯政治与外交	B	国际关系学院	1	3	关贵海	7月6日开始上课，7月22日考试（校外名额限5人）
94	02433200	伊斯兰与世界政治	B	国际关系学院	1	2	王联	7月6日开始上课，7月17日（周五）下午13:00-15:00闭卷考试
95	02535510	新结构智库实践	A	经济学院	1	3	于佳,沈鸿	新结构经济学实验班24级
96	02830730	当代中国社会	A	光华管理学院	1	3	谢宇,董浩	7月13日-8月21日周一至周四9:00-12:00，光华老楼111。需面试确定选课名单；选课同学需参与课外实践活动。
97	02930247	比较法律与治理：第二次大分流	B	法学院	1	1	戴昕	外教Jane K. Winn；7.15结课；7.23日交课程论文
98	03033950	信息伦理与隐私保护	B	信息管理系	1	2	夏汇川	

序号	课程号	课程名称	课类	开课系所	班号	学分	授课教师	备注
99	03132520	田野调查实践	A	社会学系	1	3	刘爱玉,卢晖临	限社会学系本科生选课。授课及实践地点：江苏省江阴市。时间：暂定7.14-7.24。
100	03132520	田野调查实践	A	社会学系	2	3	熊跃根,刘能	限社会学系本科生选课。授课及实践地点：江苏省江阴市。时间：暂定7.14-7.24。
101	03132550	社会调查实践	A	社会学系	1	4	张哲	限社会学系2022级本科生选课。
102	03134010	社会调查研究（一）	A	社会学系	1	2	王迪	限“严复班”学生选课。
103	03134020	社会调查研究（二）	A	社会学系	1	2	王迪	限“严复班”学生选课。
104	03631990	速成法语（零起点）	B	外国语学院	1	2	孙凯	
105	03835270	英语词汇与英美文化	C	英语语言文学系	1	2	王静文	
106	03835270	英语词汇与英美文化	C	英语语言文学系	2	2	王静文	
107	03835500	新西兰历史与文化	C	英语语言文学系	1	2	马小琦	
108	03835500	新西兰历史与文化	C	英语语言文学系	2	2	马小琦	
109	03835520	英美文学概况	C	英语语言文学系	1	2	马小琦	
110	03835520	英美文学概况	C	英语语言文学系	2	2	马小琦	
111	03835620	美国华人移民的历史与文化	C	英语语言文学系	1	2	马小琦,Tian Xiaofeng(校外)	
112	03835730	美国文化概览	C	英语语言文学系	1	2	马小琦	
113	03835730	美国文化概览	C	英语语言文学系	2	2	马小琦	
114	03835780	批判性思维与学术写作	C	英语语言文学系	1	2	张欢瑞	
115	03835780	批判性思维与学术写作	C	英语语言文学系	2	2	张欢瑞	
116	03835900	高级英语写作	C	英语语言文学系	1	2	马小琦	
117	03835900	高级英语写作	C	英语语言文学系	2	2	马小琦	
118	03835950	高级英语口语	C	英语语言文学系	1	2	马小琦	

序号	课程号	课程名称	课类	开课系所	班号	学分	授课教师	备注
119	03835950	高级英语口语	C	英语语言文学系	2	2	马小琦	
120	03835983	世界英语与英语世界	C	英语语言文学系	1	2	马小琦,徐志长(校外)	
121	04130440	瑜伽	A	体育教研部	1	1	亓昕	邱德拔151
122	04130440	瑜伽	A	体育教研部	2	1	亓昕	邱德拔151
123	04130630	汉字太极与养生课	A	体育教研部	1	1	李朝斌	男生班 一体 南三楼
124	04130630	汉字太极与养生课	A	体育教研部	2	1	李朝斌	男生班 一体 南三楼
125	04330021	戏曲与中国传统文化	B	艺术学院	1	2	陈均	
126	04330355	艺术乡建：乡土中的文化创意	A	艺术学院	1	1	向勇	
127	04330881	基本乐理与管弦乐基础	A	艺术学院	1	2	马清	
128	04833310	集成电路逻辑综合实验	B	信息科学技术学院	1	2	贾嵩,崔莹莹	理科2号楼,2623
129	04833730	集成电路的物理设计实验	B	信息科学技术学院	1	2	贾嵩,叶乐	理科2号楼2623
130	04834370	虚拟现实技术	B	信息科学技术学院	1	2	汪国平	建议2024级以上年级选修
131	04834500	量子信息技术概论	B	信息科学技术学院	1	2	吴腾	
132	04834710	自旋与超导量子技术导论	B	信息科学技术学院	1	2	王润声	与业界人士合上
133	04835270	自动驾驶技术赏析	B	信息科学技术学院	1	2	赵卉菁	
134	04835290	模拟集成电路设计方法、工具与流程	B	信息科学技术学院	1	2	汝嘉耘	
135	04835300	人工智能前沿	B	信息科学技术学院	1	1	王乐业,仉尚航	
136	04835490	计算机科学高级专题	B	信息科学技术学院	1	2	周明辉,刘先华,边凯归,罗国杰,熊英飞,张大庆,王乐业,孔雨晴,吴文斐,王鹤,仉尚航,吴垠鋆	每周一、三、五上课时间为9:00-12:00;每周二、四上课时间为9:00-12:00和14:00-17:00。
137	04835500	大模型：从基础到前沿	B	信息科学技术学院	1	2	邓志鸿	
138	04835520	网络与系统安全实验	B	信息科学技术学院	1	2	王昭	请自带笔记本电脑

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139	04835550	大模型：从基础到实战	B	信息科学技术学院	1	2	黄铁军	建议2024级以上年级选修
140	04835640	深度学习中的高效计算方法	B	信息科学技术学院	1	2	王润声	
141	04835650	脑机接口技术前沿与实践	B	信息科学技术学院	1	2	郑雨晴	
142	04835660	微纳加工与设计	B	信息科学技术学院	1	2	王路达	
143	04835670	三维视觉基础讲解与科研实践	B	信息科学技术学院	1	1	陈文拯	
144	04835700	Python语言基础与人工智能应用	B	信息科学技术学院	1	2	陈斌	
145	04835710	光通信理论与仿真实验	B	信息科学技术学院	1	1	张帆	
146	04835730	蛋白质设计中的人工智能方法	B	信息科学技术学院	1	1	张铭	
147	04835790	量子物理学导论	B	信息科学技术学院	1	2	姚和朋,贺轩	
148	06239083	经济学社会实践	A	国家发展研究院	1	2	徐晋涛,蒋少翔	实际上课时间预计7月7日至17日，请提前预留附近的时间
149	06239139	量化金融专题	B	国家发展研究院	1	2	Tai	Taught in English实际上课：7月22日-24日，7月28日-31日，8月3日-8月7日，每天下午的13:00-16:00（5-7节）
150	06730090	数字化学习与生存	B	教育学院	1	2	尚俊杰	7月6-10日每天2-4节，6-8节 ；7月11日 2-4，选课人数限80人，但教室需要150人容量（分组圆桌活动）。

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151	06732030	教育实践与教育创新	B	教育学院	1	2	杨钋	上课时段：7月6-10日-每天2-4节和6-8节，7月11日只有2-4节。
152	06732060	科技创新创业：理论与实践	B	教育学院	1	2	杨爱民,杨钋	上课时段：7月6日-7月16日，每天10-12节
153	06733030	教育与人工智能	B	教育学院	1	2	贾积有	7月6-10日，周一至周四，第2节-第8节；周五：第1节-第4节 。希望教室在二教
154	06733070	数字媒体创意设计	B	教育学院	1	2	赵国栋	2026年7月6日-13日 每天上午1-4节。
155	12632140	生态学控制实验野外实习	A	城市与环境学院	1	2	贺金生	实习课程不对外院系学生开放。计划8月1日-10日。
156	12632250	生态学认知实习	A	城市与环境学院	1	2	吉成均,唐志尧	仅限城环生态专业选修
157	12633070	自然地理综合实习	A	城市与环境学院	1	2	蒙吉军,连旭	实习课程不对外院系同学开放
158	12633130	陆面过程模型和植被遥感实习	A	城市与环境学院	1	2	王旭辉	预计开学前两周，院楼105，上午9-12点，下午2-5点
159	12634070	“一带一路”综合实习	A	城市与环境学院	1	2	刘鸿雁	以通知为准。自然方向（环境、生态、自地）选课
160	12634070	“一带一路”综合实习	A	城市与环境学院	2	2	吴龙峰	以通知为准。人文方向（人文、城规、国土）选课

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161	12634080	人文地理专业综合实习	A	城市与环境学院	1	1	童昕,陈彦光,刘刚	实习课程不对外院系学生开放。时间计划6.28-7.4
162	12634090	人文地理综合社会实践实习	A	城市与环境学院	1	1	柴彦威,陈彦光,曹广忠,贺灿飞,冯健,童昕,朱晟君,王长松,刘刚,刘宇	请选课同时报名至班长处，以便安排导师
163	12634180	行运北京：大运河与北京城	A	城市与环境学院	1	1	王长松	
164	12636070	信息地理综合实习	A	城市与环境学院	1	2	李梅	仅限城环地理信息科学2024级学生选课。
165	12639010	综合社会实践实习	A	城市与环境学院	1	1	林坚	实习课程不对外院系学生开放。
166	12739040	环境综合实习一	A	环境科学与工程学院	1	1	赵志杰,刘兆荣	成都实习，预计第17周周末（6月27号）启动，第18周（6月28-7月4号）差旅实习，第19周周末（7月10号）前总结
167	12739040	环境综合实习一	A	环境科学与工程学院	2	1	刘文,尚冬杰	深圳实习，预计第17周周末（6月27号）启动，第18周（6月28-7月4号）差旅实习，第19周周末（7月10号）前总结

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168	12739060	环境综合实习二	A	环境科学与工程学院	1	1	梁宝生,刘兆荣,许伟光,王婷,陈仕意	塞罕坝，预计第19周周中（7月8/9号）启动，第20周（7月12-18号）差旅实习，第21周周末（7月24号）前总结。
169	18730002	社会时空数据分析与建模	B	中国社会科学调查中心	1	2	顾佳峰	总共100名学员，其中一半（50）人给校内报名，若校内报名结束尚有剩余的名额，就自动转为校外报名的名额
170	18730003	Stata数据分析与应用	B	中国社会科学调查中心	1	2	丁华,吕萍,任莉颖(校外)	总共100名学员，其中一半（50）人给校内报名，若校内报名结束尚有剩余的名额，就自动转为校外报名的名额
171	18730004	计算社会科学理论与实践	B	中国社会科学调查中心	1	3	姚佳慧,陈薇,王鹤媛	学员总人数100人，其中50人为校内学生，但是，校内学生人数如果没有报满，剩余名额自动转为校外学生名额

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172	18730010	社会调查实务	B	中国社会科学调查中心	1	2	丁华,孙妍,吕萍,吴琼	总共100名学员，其中一半（50）人给校内报名，若校内报名结束尚有剩余的名额，就自动转为校外报名的名额
173	18730020	社会调查数据分析方法	B	中国社会科学调查中心	1	2	任强,顾佳峰,孔涛,吴琼,丁华,孙妍,吕萍	总共100名学员，其中一半（50）人给校内报名，若校内报名结束尚有剩余的名额，就自动转为校外报名的名额
174	19530004	城乡建成环境文化遗产研究与实践调查	A	建筑与景观设计学院	1	2	汪芳	先修要求为汪芳《社会综合实践调查》，上课时间为7月10日至7月31日，具体可联系mla@pku.edu.cn
175	20133003	英国研究	A	汇丰商学院	1	3	刘芍佳	在英国校区开课
176	20133006	人工智能前沿技术与海外应用实践	A	汇丰商学院	1	2	Domenico Tarzia	在英国校区开课
177	20133007	数据科学与工程优化	A	汇丰商学院	1	2	Domenico Tarzia	在英国校区开课
178	21130001	植物发育及分子生物学	B	现代农学院	1	2	邓兴旺,陈雪梅,陈浩东(校外),林辰涛(校外),杨贞标(校外)	7月13日-7月17日每天9点-17点

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179	21130009	中国农村教育问题专题	B	现代农学院	1	2	易红梅	7月6-7日每天8节，7月7日上午4节，7月9-10日每天6节
180	21130013	经济学模型CGE的基本原理及优化软件GAMS编程	B	现代农学院	1	2	解伟	7月6日-10日上午9点-12点，下午2点-5点；7月13日上午9点-12点。上课地点另行通知。
181	21130016	食物安全：政治经济学和心理学研究	B	现代农学院	1	2	王晓兵	7月11日-7月18日， 上午9：00-11：00；下午15：00-17：00
182	21130019	计量经济学因果识别方法详解	B	现代农学院	1	2	黄开兴	7月6日-7月9日，7月13日-7月16日；每天下午6-9节
183	21130020	数字技术与经济发展：文献导读和案例讨论	B	现代农学院	1	2	王悦	7月6日-7月9日，7月13日-7月16日，7月20日-7月22日，每天2-4节
184	21130024	环境和发展经济学：理论和前沿	B	现代农学院	1	2	赖汪洋	7月6日-7月9日，7月13日-7月16日，每天上午1-4节
185	21130025	经济学英文论文写作：实践与AI应用	B	现代农学院	1	2	黄开兴	7月20日-7月23日，7月27日-7月30日；每天下午6-9节
186	21130026	非参数方法和机器学习在经济学中的应用	B	现代农学院	1	2	皮鲁鲁	7.6-7.15每天下午6-9节
187	21130027	中国农村发展前沿专题	B	现代农学院	1	2	朱炯	7月6日-7月13日 每天下午6-9节

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188	21130028	现代食品体系中的食物选择心理学	B	现代农学院	1	2	刘红中,Mei Peng(校外)	7月6日-7月17日，周一--周四2-4节，周五1-4节
189	23200017	工程实训	A	材料科学与工程学院	1	3	高嵩,邹如强,莫凡洋,王永刚,孟繁琦,海晓	7月6日-7月14日，昌平新燕园校区上课，选课结束后建立课程群，群里通知具体课程时间和内容安排
190	23200018	工程实训B	A	材料科学与工程学院	1	2	高嵩,邹如强,莫凡洋,王永刚,孟繁琦,海晓	7月6日-7月14日在昌平新燕园校区上课，选课结束后建立课程群，群里通知具体课程时间和内容安排
191	23200018	工程实训B	A	材料科学与工程学院	2	2	高嵩,邹如强,莫凡洋,孟繁琦,海晓,王永刚	7月6日-14日在昌平新燕园校区上课，选课结束后建立课程群，群里通知具体课程时间和内容安排
192	23200031	认知实习	A	材料科学与工程学院	1	1	高鑫	上课时间：7月26日-29日，课程具体安排以邮件通知为准
193	23200032	“材料+”科创实践	A	材料科学与工程学院	1	1	林立	7月6日-9日，具体安排以邮件通知为准，考核方式：考勤+小组汇报
194	67130021	智能飞行系统：项目驱动式从设计到实践	A	创新创业学院	1	1	刘建波,刘德英	
195	67130022	智能技术与行业研究实务	A	创新创业学院	1	1	刘德英,李博	

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196	E1273915	环境专业国际交流与实践	A	环境科学与工程学院	1	1	郭松	英国曼彻斯特大学暑期交流项目，面试通过后选课，请勿直接选课
197	E1273915	环境专业国际交流与实践	A	环境科学与工程学院	2	1	宫继成	加州大学伯克利分校暑期交流，面试通过后选课，请勿直接选课
	（二）通识教育联合暑期学校课程							
198	02335200	庄子哲学	B	教务部	1	2	郑开	通识教育联合暑期学校，7月13日-27日，每天第3-4节
199	03139110	死亡的社会学思考	B	教务部	1	2	张洋,陆杰华(校外)	通识教育联合暑期学校，7月20日-7月31日，每周一二四五，每天第1-4节
200	30340106	中国现当代小说选读	B	教务部	1	2	金理(校外)	通识教育联合暑期学校，7月13日-7月17日，7月20日-7月22日，每天第3-4节、7-8节
201	30340107	听觉文化与世界文明	B	教务部	1	2	毕明辉(校外)	通识教育联合暑期学校，7月6日-7月13日，每天第5-8节
202	30340109	欧洲文化：从古典希腊到文艺复兴	B	教务部	1	2	朱孝远	通识教育联合暑期学校，7月7日-7月17日，每周二三四五，每天第3-6节

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203	30340111	艺术的启示	B	教务部	1	2	李睦(校外)	通识教育联合暑期学校，7月6日至17日，每周一二四五，每天8-9节、11-12节。
204	04334017	美索不达米亚艺术与文明	B	教务部	1	2	贾妍	通识教育联合暑期学校。7月6日（周一）至7月12日（周日），每天第3-4、7-8节，7月13日（周一）第3-4节
205	06732040	经济学视角下的教育世界	B	教务部	1	2	马莉萍	通识教育联合暑期学校。7月13日-7月20日，每天第5-8节
	（三）国际暑期学校课程（英文授课）							
206	01630746	发展认知神经科学	国际课程	教务部	1	3	解万泽	国际暑期学校
207	01834300	媒体与中国社会	国际课程	教务部	1	3	陈开和	国际暑期学校
208	02036010	民俗学专题	国际课程	教务部	1	3	程梦稷	国际暑期学校
209	02432090	本土视野下的中国外交与国际事务	国际课程	教务部	1	3	陈长伟	国际暑期学校
210	02534380	应用经济计量	国际课程	教务部	1	2	秦雪征	国际暑期学校
211	02535030	企业全面风险管理	国际课程	教务部	1	2	陈凯	国际暑期学校
212	02535620	新结构经济学国际实践	国际课程	教务部	1	3	于佳	国际暑期学校
213	02930239	中国刑事司法体系导论	国际课程	教务部	1	3	江溯,吴雨豪	国际暑期学校
214	02930242	国际组织法导论	国际课程	教务部	1	3	陈一峰	国际暑期学校，外聘Peter Quayle
215	03230020	政治学原理	国际课程	教务部	1	3	马啸	国际暑期学校
216	03233590	理解中国治理：理论与方法	国际课程	教务部	1	3	刘颜俊	国际暑期学校
217	03835710	语言、文化与交际	国际课程	教务部	1	2	郑萱	国际暑期学校

序号	课程号	课程名称	课类	开课系所	班号	学分	授课教师	备注
218	04130721	骑行老北京城：探索千年古都回响	国际课程	教务部	1	2	卢福泉	国际暑期学校，前三周每次连上5课时，最后一周只上一次课：周二第6节-第9节
219	04130721	骑行老北京城：探索千年古都回响	国际课程	教务部	2	2	卢福泉	国际暑期学校，前三周每次连上5课时，最后一周只上一次课：周二第6节-第9节
220	04450001	乐韵中国：流行歌曲与社会变迁	国际课程	教务部	1	3	赵昀晖	国际暑期学校
221	04833360	情感智能机器人引论	国际课程	教务部	1	2	王韬	国际暑期学校
222	12730020	变化中的地球	国际课程	教务部	1	2	郑玫	国际暑期学校
223	21130017	发展经济学及其在中国的实践	国际课程	教务部	1	3	刘承芳	国际暑期学校
224	30340052	中国传统健身、饮食与养生	国际课程	教务部	1	2	王东敏	国际暑期学校
225	30340056	镜中观花：中国人的价值观	国际课程	教务部	1	3	韩金鹏	国际暑期学校
226	30340059	中国古典诗词	国际课程	教务部	1	2	梅申友	国际暑期学校
227	30340076	中国现当代小说与电影	国际课程	教务部	1	2	马乃强	国际暑期学校
228	30340082	“中国崛起”专题研讨课	国际课程	教务部	1	3	徐昕(校外)	国际暑期学校
229	30340094	中国改革与世界经济	国际课程	教务部	1	3	陈绍锋	国际暑期学校
230	30340095	中国经济导论	国际课程	教务部	1	3	季曦	国际暑期学校
231	30340095	中国经济导论	国际课程	教务部	2	3	LIUMINQUAN（刘民权）	国际暑期学校，中间第5节休息
232	E1273914	气候变化与可持续发展	国际课程	教务部	1	3	戴瀚程	国际暑期学校
233	E4030003	中共党史重要人物研究	国际课程	教务部	1	3	李洋	国际暑期学校

课程目录Course Catalog

课程号（Course Number）： 00332950

课程名称（Course Title）：航空航天工业实习/Aerospace Industry Intern Program

开课院系（School/Department）： 工学院/College of Engineering

学分（Credits）： 3
授课教师（Faculty）： 周超 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
组织高年级本科生参观和访问航空和航天中有代表性的工业单位，在条件（保密、时间）允许的情况下适当从事科研实践活动，从而对我国航空航天研究、发展和生产单位建立一定的了解，为学生下一步在个人感兴趣的航空航天子课题上继续深入学习和研究指明方向。

英文简介（Course Description）：
This course will organize several visitings and intern programmes of aerospace industry for junior undergraduates. These activities are designed to help our students deep understanding and build up an overview of Chinese aerospace industry, which could in turn guide their study and research in the near future.

-End-

课程号（Course Number）： 00333050
课程名称（Course Title）：金工实习/Metalworking Practice
开课院系（School/Department）： 材料科学与工程学院/School of Materials Science and Engineering
学分（Credits）： 3
授课教师（Faculty）： 高嵩 高级工程师 Senior Engineering，莫凡洋 长聘副教授 ，王永刚 助理教授 ，孟繁琦 工程师 Engineer，海晓 助理教授 ，邹如强 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
本课程共60学时3学分，学生暑期完成。教师授课和工厂实习同时进行，教师授课占22学时，工厂实习占38学时。主要培养学生金属加工和机械操作的基本技能。通过金工实习使学生了解实验安全、工艺技术及工业机械操作的基本知识和流程。课程共分十个章节，包括铸造、焊接、钢的热处理、切削加工基本知识、车工、铣工、刨工、磨工、钳工、数控加工技术等实践内容。

英文简介（Course Description）：
This is a one-semester course designed to introduce the student to basic metal working and machining concepts. This hands-on course will introduce students to many metal characteristics and machining procedures. Students will learn safety, craftsmanship, and an appreciation of the machining industry. The class includes casting, welding, cutting, lathe, milling machine, planing machine, and digital control machining techniques etc.. The experience and knowledge gained in this course will begin to develop an appreciation of industrial design, craftsmanship, orderly procedures, safe work

habits, pride in their work, integrity, proper work ethic, and an understanding of hand and power tools used in the metals shop.

-End-

课程号（Course Number）： 00333109
课程名称（Course Title）：可持续性理论与实践/Sustainability Theory and Practices
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： Tracy Morse(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
本课程将向学生介绍当前和未来能源供需的可持续性。课程将利用案例研究和实例，重点介绍可持续性理论和实践、二氧化碳排放和气候变化，当前和未来能源需求、高收入和低收入国家能源部门的未来挑战和机遇，跨学科和跨部门参与发展，以及这些解决方案如何影响社会、经济和环境。这门课程将由Rod Bain博士教授，并将邀请相关领域客座专家参与。

英文简介（Course Description）：
This course will introduce students to sustainability in the context of energy supply and demand both now and in the future. Using case studies and practical examples, the course will focus on sustainability theory and practice, current and future energy demands in terms of CO2 emissions and climate change, future challenges and opportunities in the energy sector for high and low income countries, trans/interdisciplinary and cross sectoral engagement in the development of energy solutions, and how these solutions may affect society, economies and the environment. This course will be led by Dr Rod Bain and will feature lectures from a range of experts from across the university.

-End-

课程号（Course Number）： 00333148
课程名称（Course Title）：工程科学应用分析/Applied Analysis for Engineering Sciences
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： 唐少强 教授 Professor，Emily TIAN(校外) 待定

先修课程(Prerequisites)：Calculus (Single variate, and multi-variate), Linear Algebra, Ordinary Differential Equations.

中文简介：
本课程的目标包括：（1）介绍广泛应用于工程科学、非线性力学和其他物理科学领域的现代（1900-1990）数学方法；（2）发动学生的科研积极性，包括启发思维，明确问题并建模，以及探索相应的数学方法；（3）弥合数学工具与其物理理解之间的鸿沟。

英文简介（Course Description）：
The objectives of this course include: to show some modern (1900-1990) mathematical methods that are widely used in engineering sciences, nonlinear mechanics and other physical sciences; to help initiating research activities, namely, to boost ideas, to formulate the problem, and to explore the mathematics; to help bridging the gap between the mathematical tools and the physical understandings.

-End-

课程号（Course Number）： 00333181
课程名称（Course Title）：工程项目管理中的金融决策/Financial Decisions in Engineering Project Management
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： Daricha Sutivong(校外) 待定

先修课程（Prerequisites）：

中文简介：
本课程主要介绍了在项目评估中广泛使用的金融技术。基于货币时间价值观念，该课程探讨如何分析和评估各种现金流模式，并提供项目评估和决策的常用方法，包括净现值、收益率，以及单一或多个项目决策的应用规范。该课程还涉及使用盈亏平衡分析，敏感性分析，决策树等方法在不确定环境下决策问题。学生将有机会在一个团队项目中对他们感兴趣的问题进行财务分析，创建管理报告并进行展示。

英文简介（Course Description）：
The course introduces widely-used financial techniques for project evaluation. Based on the time
value of money concept, the course examines how to analyze and valuate various cash flow patterns
and provides popular economic measures for project assessment and selection, including the net
present value and the rate of return, along with the application criteria forsingle and multiple project
decisions. The course also addresses decision under uncertainties using techniques such as
breakeven analysis, sensitivity analysis, decision tree, etc. Students will have an

opportunity to
perform a financial analysis of their interested problem in a group project and creating management
report and presentation.

-End-

课程号（Course Number）： 00333390
课程名称（Course Title）：生物医学工程实习/Biomedical Engineering Practice
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： 孙红芳 高级工程师 Senior Engineering

先修课程（Prerequisites）： 高等数学、大学物理、分子与细胞生物学、解剖学

中文简介：
本课程在美国佐治亚理工大学的生物医学工程系进行。本科生在那里会进不同的实验室直接参与科研活动，同时选修一至两门相关实验类课程。课程也安排参观世界一流实验室或科研设施，和本领域著名学者直接面对面讨论和交流。

英文简介（Course Description）：
This course is taken at Georgia Institute of Technology at Atlanta. All undergraduates will be assigned a research lab to take part in various projects. They also will take one or two experimental courses. In the meantime, students have opportunities to visit cutting-edge research facilities, and discuss with world-famous scientists face to face.

-End-

课程号（Course Number）： 00333724
课程名称（Course Title）：中华语言与文化/Chinese Language and Culture
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： ZHANG Aidong(校外) 待定

先修课程（Prerequisites）： N/A
Undergraduate and Graduate Students (all majors and all levels) with prerequisite: Basic Chinese reading and listening skills

中文简介：
本课程旨在介绍中华语言和文化的不同方面。包括中国思想、文化和语言之间的关系、中国语

言和文字的特点、中国社会、民间传说和语言、中国人的思维模式和思维方式、东西方的思维方式和文化属性、社会和文化的变化及其对汉语的影响。

英文简介（Course Description）：
This course is designed to introduce different aspects of Chinese language and culture. Including, the relationship between Chinese thought, culture, and language. The characteristics of Chinese language and scripts. Chinese society, folklore, and language. Chinese thought patterns and thinking styles. Eastern and Western ways of thinking and the cultural attributes embedded. The social and cultural changes as well as its influence on Chinese language.

-End-

课程号（Course Number）： 00333734
课程名称（Course Title）：数据驱动的优化和学习/Data-Driven Optimization and Learning
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： Bernd HEIDERGOTT(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
本课程广泛介绍了使用计算机仿真和流数据分析和优化动态随机模型的重要方面。重点是持续优化和学习及其广泛的应用领域：从社交网络到计算机网络，从金融工程到业务流程。该课程将向学生介绍递归算法的使用，通过基于仿真/数据驱动的方法来分析动态随机模型，以进行优化和学习。本课程的主要问题是如何使用仿真/流数据为现实生活中的问题做出更好、更负责任的决策。该课程还将反思我们在社会中见证的技术和数学发展。

英文简介（Course Description）：
This course gives a broad treatment of the important aspects of the use of computer simulation and of streaming data for the analysis and optimization of dynamic stochastic models. The emphasis is on continuous optimization and learning (i.e., we do not cover discrete optimization in this course). Applications will stem from a wide range of domains: from Social Networks to Computer Networks, and Financial Engineering to Business Processes. The course will introduce students to the use of recursive algorithms in analyzing dynamic stochastic models through simulation-based/data-driven methods for optimization and learning. The leading question of the course is how to use simulation/streaming-data to make better and more responsible decisions for real-life problems. The course will also reflect on the technological and mathematical developments we witness in our societies. While actively working on simulation projects, the course will provide space for reflecting on the mathematical/technological paradigm. That is, next to learning the actual techniques, students will be stimulated to reflect

on the history of science and the technological developments around them.

-End-

课程号（Course Number）： 00333754
课程名称（Course Title）：科学机器学习：融合科学与数据/Scientific Machine Learning: Blending Science with Data
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： Andrew OOI(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
数据驱动技术可用于基于给定数据构建工程问题模型。然而，通常情况下，当模型应用于训练数据参数范围之外时，其性能往往不佳。为了获得更准确的预测结果，需要将问题的科学知识引入数学模型中。本课程将教授学生如何高效地运用现代人工智能和机器学习工具解决经典工程问题。课程重点在于将科学的工程领域知识与现代人工智能工具相结合，从而找到工程问题的最优解。此外，我们还将向学生介绍不确定性量化方法，以及如何利用这些技术来理解解对输入参数不确定性的敏感性。本课程的主要目标是使学生掌握数据驱动工具，并能够为简化的工程应用创建数学模型。课程将着重于将科学知识与数据驱动技术相结合，以确保严谨的科学原理融入模型之中。

英文简介（Course Description）：
Data driven techniques can be used to find models for engineering problems based on given data. However, it is usually common that the derived models do not perform well when used outside the parameter range used in the training data. In order to obtain better predictions, scientific knowledge of the problem needs to be introduced into the mathematical model. In this course students will learn to efficiently apply modern day artificial intelligence and machine learning tools to classical problems in engineering. There will be emphasis on blending scientific engineering domain knowledge with modern AI tools to arrive at an optimal solutions to engineering problems. In addition, we will also introduce students to methodologies for uncertainty quantification and how these techniques can be used to understand the sensitivities of the solutions to uncertainties in input parameters. The main goal for this course is to arm students with data-driven tools that can be used to create mathematical models for simplified engineering applications. There will be an emphasis to blend scientific knowledge with data-driven techniques to ensure rigorous scientific principles is embedded into the model.

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课程号（Course Number）： 00333764
课程名称（Course Title）：人工智能驱动的控制工程/AI Enabled Control Engineering
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： 黄迅 教授 Professor

先修课程（Prerequisites）： 高数、线性代数、电路与电子、任意编程语言

中文简介：
为Globex暑期国际学校准备的experiencial learning性质的课程。基于人工智能乃至数据驱动的控制器设计是控制理论发展的全新方向，在授课中融入最新的AI编程工具、基于AI的控制仿真环境。1/3讲授基本原理，2/3课时做实验。内容：1. 针对控制理论最经典倒立摆问题设计了基于AI的大作业。2. 提供了所有所需的引文。3. 撰写了相关大作业的英文指导材料，帮助同学们从0开始一步步完成此大作业。

英文简介（Course Description）：
Introduce the fundamentals of classical and modern control theories to undergraduates in Engineering. The graduate students in dynamics and control are also welcomed if their undergraduate trainings were not in control.
The pre-requisite course is calculus and linear algebra. Knowledge in electronic circuits and signal and processing will be helpful too, but will be summarized in this tutorial when it is necessary. In addition, the emerging machine learning-based control methods will be introduced, mainly through the successful completion of the designed software tasks. Hence, students are expected to have experience with Python or other similar programming language.

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课程号（Course Number）： 00334590
课程名称（Course Title）：先进制造与机器人实践/Advanced Manufacturing and Robotics Practice
开课院系（School/Department）： 工学院/College of Engineering
学分（Credits）： 3
授课教师（Faculty）： 袁小婷 工程师 Engineer

先修课程（Prerequisites）： 无

中文简介：
《先进制造与机器人实践》课程旨在培养跨学科的复合型人才，提高学生的综合能力。课程面向全校各专业，以实践性、综合性实验教学为主。内容包括机器人智能制造、传感、驱动、控制等。在培养过程中，注重锻炼学生的工程观念、劳动观念，培养其热爱劳动、团结协作等优

秀品质。鼓励学生勤于思考、勇于创新、乐于实践、善于将理论知识应用于实际工作。通过本课程的学习，学生能够掌握机器人多方面的技能，为将来工作和研究奠定坚实基础。

英文简介（Course Description）：
《Advanced Manufacturing and Robotics Practice》 aims to cultivate interdisciplinary talents and improve students' comprehensive ability. The course is oriented to all majors in the school, and is mainly based on practical and comprehensive experimental teaching. The content includes intelligent manufacturing, sensing, drive, control, etc. In the process of training, we pay attention to exercising students' engineering consciousness and labor consciousness, and cultivate their excellent qualities such as love of labor, unity and cooperation. Students are encouraged to be diligent in thinking, brave in innovation, willing to practice, and good at applying theoretical knowledge to practical work. Through the study of this course, students will be able to master the skills of robotics in various aspects, and lay a solid foundation for future work and research.

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课程号（Course Number）： 00407810
课程名称（Course Title）：海洋学海上实践/Oceanography Practice at Sea
开课院系（School/Department）： 物理学院/School of Physics
学分（Credits）： 1
授课教师（Faculty）： 刘永岗 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
本课程的主要目的是使同学们能够从海上现场直观感受海洋环境，对海洋的水文、气象、化学、生物和地质等要素进行直接观测操作，并学习各观测仪器的原理与方法，了解海洋环境的复杂性、生动性和现代海洋观测的前沿，加深对海洋理论知识的理解，提升对海洋科学的兴趣。整个课程集中在船上完成，因此需要去沿海地区，总共需要约5天。

授课内容包括：在水文要素方面，有水深、海流、透明度、水色、温度等的测量，海浪、海况和海发光等的观测；在海洋气象要素方面，有能见度、温度、湿度、气压、海面风和高空风和降水量等的观测；在海洋化学要素方面，有盐度、溶解氧、pH和活性磷酸盐等的测量与原理介绍；在海洋生物要素方面，有海洋浮游生物和底栖生物调查；在海洋地址要素方面，进行海底表层和海底柱状取样，介绍样品的现场描述内容、保存方法及实验室后续分析，介绍悬浮体现场滤定方法、现场激光粒度仪法、浊度计法和海洋遥感遥测。

本课程不需要同学们有海洋学习和研究的基础。

英文简介（Course Description）：

The primary objective of this course is to enable students to gain direct, on-site experience in marine environments through offshore fieldwork. Participants will conduct hands-on observations and operational activities targeting hydrological, meteorological, chemical, biological, and geological elements of the ocean. The curriculum emphasizes learning the principles and methodologies of marine observation instruments, while exposing students to the complexity, dynamic nature, and cutting-edge advancements in modern oceanographic monitoring. This immersive approach aims to deepen theoretical understanding of marine science and foster greater interest in the discipline. As the entire program is ship-based, it requires traveling to coastal regions and spans approximately five days.

The teaching content includes:

1. Hydrological Elements
   Measurement of water depth, currents, transparency, water color, and temperature
   Observation of waves, sea state, and bioluminescence
2. Marine Meteorological Elements
   Observation of visibility, temperature, humidity, air pressure, surface wind, upper-level winds, and precipitation.
3. Marine Chemical Elements
   Measurement and principles of salinity, dissolved oxygen, pH, and active phosphate
4. Marine Biological Elements
   Surveys of marine plankton and benthos
5. Marine Geological Elements
   Surface sediment sampling and core sampling from the seabed.
   Field descriptions, preservation methods, and laboratory analyses of samples.
   On-site filtration methods for suspended particles, laser particle size analyzers, turbidimeters, and remote sensing techniques.

This course does not require students to have any prior background in marine studies or research.

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课程号（Course Number）： 00432216
课程名称（Course Title）：量子力学（Ⅱ）/Quantum Mechanics (II)
开课院系（School/Department）： 物理学院/School of Physics
学分（Credits）： 2
授课教师（Faculty）： 钱志新 副教授 Associate Professor

先修课程（Prerequisites）： 量子力学Ⅰ

中文简介：

在量子力学 I 的基础上，介绍He原子和多电子原子的基本理论，主要讨论量子力学中的微扰理论和变分方法; Hartree 理论，Hartree-Fock 理论和Thomas-Fermi理论. 双原子分子、多原子分子的转动谱和振动谱. 价键理论的基本概念. 介绍量子力学中的Feynman 路径积分方法（以自由粒子和谐振子为例）. 介绍WKB近似，Bohr 量子化条件，势垒的隧穿。量子力学里态的相干态描述; 介绍量子力学中的相位，包括Aharonov-Bohm 效应的实验观察; 引力导致的量子力学相位效应; Berry 相和 Aharonov-Anandan 的介绍. 讨论量子力学中的密度矩阵理论和 Wigner 函数的概念.

英文简介（Course Description）：

This course is intended for senior undergraduate students or motivated junior undergraduate students in physics major or chemistry major who have completed the study of the one-semester course of quantum mechanics. The level is more advanced than the usual course of quantum mechanics. Several topics listed below will get discussed at a high level. The method of the perturbation theory and the variational theory in quantum mechanics will be presented at the beginning. Introductory materials to the study of the atom of helium and those with more than two electrons are then presented the next. The methods of Hartree theory, Hartree-Fock theory, and Thomas-Fermi theory are discussed; quantum mechanical many-body theory is presented but at the level of an intruduction. The main topics further cover several other basics in the quantum chemstry, like the rotation and vibration of a diatom molecule and other small (and somehow simple) molecules. The path integral approach of Feynman to quantum mechanics is discussed. The course also include the subjects on the semi-classical methods such as WKB approximation; the application of them to bound states and scattering states is discussed. The final part of this course is devoted specifically to the topic on phases in quantum mechanics. After introducing the concept of phase in quantum mechanics, we discuss their effects in the Aharonov-Bohm experiments and other important experiments. On theoretical aspect, we introduce and discuss the concepts of the Berry phase and the Aharonov-Anandan phase. The theory of density matrix and the introduction to the Wigner function might also be presented in the course, though not always.

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课程号（Course Number）： 00437151

课程名称（Course Title）：物理学科暑期专题研讨/Selected Topics on Physics

开课院系（School/Department）： 物理学院/School of Physics

学分（Credits）： 2
授课教师（Faculty）： 何琼毅 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
物理学院举办的物理学、大气与海洋科学、天文学、核科学与技术领域的暑期学校；授课时间超过34学时，记2学分。

英文简介（Course Description）：
Selected Topics on Physics

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课程号（Course Number）： 01034391
课程名称（Course Title）：仪器分析原理与实验/Principle and experiments of Instrumental Analysis
开课院系（School/Department）： 化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）： 4
授课教师（Faculty）： 金长文 教授 Professor，张新祥 教授 Professor，李美仙 教授 Professor，吕占霞 高级工程师 Senior Engineering，周颖琳 副教授 Associate Professor，潘伟 高级工程师 Senior Engineering，陈明星 高级工程师 Senior Engineering，高珍 高级工程师 Senior Engineering，黄军 工程师 Engineer

先修课程（Prerequisites）： 普通化学，定量分析化学，普通物理，化学实验室安全技术

中文简介：
本课程将以分析化学特别是仪器分析化学的知识体系和思维方式培养为目标，通过任务式实验内容的工作，让学生对仪器分析基本知识内容框架、分析化学样品处理、分析化学数据处理及团队合作等方面进行积极参与，达到了解分析化学特别是仪器分析的基本原理、基本方法和基本应用的了解，完成仪器分析理论和实验同时进行的教学目标。

英文简介（Course Description）：
The aims of this course is to cultivate the knowledge system and thinking mode of analytical chemistry, especially instrumental analysis. Through task-based experimental content, students will actively participate in the framework of basic knowledge of instrumental analysis, analytical chemistry sample processing, analytical chemistry data analysis, and team collaboration, achieving an understanding of the basic principles, methods, and applications of analytical chemistry, especially instrumental analysis, To achieve the teaching goal of conducting both instrumental analysis theory and experiments simultaneously.

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课程号（Course Number）：01035260
课程名称（Course Title）：化学中的数学/Mathematics in Chemistry
开课院系（School/Department）：化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）：2
授课教师（Faculty）：刘剑 教授 Professor

先修课程（Prerequisites）：《高等数学》、《线性代数》、《普通物理》量子力学部分、《普通物理》力学部分

中文简介：
化学吸纳统计力学和量子力学的概念和理论，已经成为分子科学的基石。《化学中的数学》课程的授课内容着眼于化学统计力学和量子力学中的数学方法，对化学研究中常用的数学分析和算法工具进行系统介绍，致力于让本科学生/低年级研究生在较短时间内对化学研究中相关的数理知识有一个较为完善和全面的基本了解，为他们在本科高年级和研究生阶段的学习和研究奠定必要的基础。

英文简介（Course Description）：
“Mathematics in Chemistry” is focused on the application of mathematical methods in quantum mechanics as well as statistical mechanics to research in chemistry. It offers 2nd/3rd-year undergraduate students or even 1st-year graduate students a comprehensive introduction to the mathematical theories and techniques of quantum mechanics/statistical mechanics employed in higher level undergraduate courses as well as graduate ones.

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课程号（Course Number）：01035280
课程名称（Course Title）：化工新概念/New concept of modern chemical industry
开课院系（School/Department）：化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）：1
授课教师（Faculty）：马莲(校外) 待定

先修课程（Prerequisites）：化学化工相关课程

中文简介：
本课程是授课老师根据自己二十多年在现代跨国公司工作的职业生涯及经验，以现代跨国公司

为案例，介绍现代工业企业如何创新及可持续发展。并通过案例分析帮助同学们对现代国际化的化工行业及化工公司的发展理念，基本构架及运营有一个全面深入的了解！同时介绍现代化工行业与其他工业行业之间的相互关系以及化工行业未来的发展趋势。最后详细介绍现代人才所需的基本素质，求职和未来职业发展的设计与规划！

本课程希望能够帮助同学们及早明确自己的学习的目的和未来目标！ 帮助同学们更快地适应现代化机构的工作要求及节奏，更容易融入现代化的工作机构！从而帮助同学们更容易进入社会！并及早成为一名合格的对社会有贡献的现代化人才！

本课程以老师讲课，学生读书及小组讨论，学生演讲等多种形式同时进行。以期达到在学习的同时开阔学生的眼界，提高学生各方面的能力和见识！

英文简介（Course Description）：
This course is based on personal experiences in chemical industry more than 20 years and take chemical industry as an example to
*Introduce the development and operation of modern chemical industry, in order to help student getting an insight of the industry branch.
*Introduce the basic requirement for an employee and their career develop pass with the modern industry, to help fresh graduate finding their way in the companies and developing themselves better! And to help them getting to the society easier!

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课程号（Course Number）： 01035430
课程名称（Course Title）：化学应用与实践/Application and Practice of Chemistry
开课院系（School/Department）： 化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）： 1
授课教师（Faculty）： 高珍 高级工程师 Senior Engineering，邹鹏 教授 Professor

先修课程（Prerequisites）： 化学实验室安全技术

中文简介：
本课程旨在提高学生的劳动素养，树立正确的观念，培养学生必要的劳动能力。
课程内容由反映化学学科特点的几个模块组合而成。 学生可以自主选择并完成34个学时。 各模块的实践内容循序渐进。 学生必须完成所要求的基本任务和学时。 然后，可以自主选择不同的任务并承担具有挑战性的工作以满足总学时要求。
该课程包括四个模块：化学应用、金工实践、社会服务和开放实践。

英文简介（Course Description）：
This course aims to enhance students' labor literacy, establish correct values regarding labor, and cultivate essential labor skills.

The curriculum consists of several modules that reflect the characteristics of the discipline of chemistry. Students can independently select and complete 34 credit hours. The practical content of each module is progressively structured. Students must first fulfill the required basic tasks and credit hours, after which they may independently choose additional tasks and take on challenging assignments to meet the total credit hour requirement.
The course includes four modules: Chemical Applications, Metalworking Practice, Social Service, and Open Practice.

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课程号（Course Number）： 01035480
课程名称（Course Title）：交叉中的化学科学/Interdisciplinary Chemistry
开课院系（School/Department）： 化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）： 2
授课教师（Faculty）： 张文彬 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
化学作为一门与生命、材料、能源、环境及信息等领域深度交织的中心科学，始终是推动人类社会进步和技术革新的核心驱动力。本课程以“学科交叉”为核心理念，面向化学学院以及院外、校外相关专业的本科生（大二及以上）与研究生开放。课程每年聚焦一个前沿主题（如“化学与人工智能”），通过“理论-交叉-实践-前沿”四模块进阶式教学，构建以化学为核心的多维知识体系。第一模块系统解析化学与目标学科（如人工智能）的基础理论框架，阐明其交叉原理与科学价值；第二模块深入探讨学科融合的关键路径，通过方法论剖析与案例推演，培养学生突破学科壁垒的创新性思维；第三模块通过分组实践引导学生将理论转化为具体解决方案，在实验操作与项目设计中深化对知识的具象化理解；第四模块特邀相关领域的顶尖科学家分享前沿进展，以真实科研案例揭示交叉研究的突破逻辑。课程贯穿“基础认知-思维训练-实践验证-视野拓展”的全链条培养模式，致力于打造激发跨界创新的思维实验室，使学习者在化学与多元领域的共振中凝练科学洞察力，为应对能源转型、智能材料开发等复杂挑战积淀跨学科创新能力。

英文简介（Course Description）：
As a central science deeply intertwined with fields such as life sciences, materials, energy, environment, and information technology, chemistry has always served as a core driving force for breakthroughs in human society and technological innovation. This course, grounded in the philosophy of "interdisciplinary integration," is open to graduate students and undergraduates (sophomores and above) from the Chemistry major and related disciplines. Each year, the course focuses on a cutting-edge theme (e.g., "Chemistry and Artificial Intelligence") and employs a four-module progressive

framework—"theory, interdisciplinary exploration, practical application, and frontier advancement"—to construct a multidimensional knowledge system centered on chemistry. Module 1 systematically analyzes the foundational theoretical frameworks of chemistry and its target discipline (e.g., artificial intelligence), elucidating their interdisciplinary principles and scientific significance. Module 2 delves into the critical pathways of disciplinary convergence, fostering innovative thinking that transcends academic boundaries through methodological analysis and case-based simulations. Module 3 guides students in translating theories into concrete solutions via group projects, deepening tangible understanding through experimental operations and project design. Module 4 invites leading scientists to share frontier advancements, using real-world research cases to reveal the breakthrough logic of interdisciplinary studies. In summary, the course aims to create a "thought laboratory" that ignites cross-boundary innovation. By immersing learners in the resonance between chemistry and diverse fields, it refines their scientific insights and cultivates interdisciplinary problem-solving capabilities to address complex challenges such as energy transition and smart materials development.

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课程号（Course Number）：01035490
课程名称（Course Title）：AI化学实践/Artificial Intelligence for Chemistry Laboratory
开课院系（School/Department）：化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）：1
授课教师（Faculty）：郑捷 研究员 Research Fellow，李田 高级工程师 Senior Engineering，李霄 讲师 Lecturer

先修课程（Prerequisites）：机器学习及其在化学中的应用（刘志荣老师）
Python编程相关课程
线上公开课《机器学习》（吴恩达老师）
以上课程建议但不强制要求。

中文简介：
人工智能的快速发展深刻影响并重塑着科研范式，尤其在化学领域展现出广阔的前景与潜力。在本科化学实验教学中融入人工智能赋能科学研究的实践内容，与时俱进地培养学生跨学科的编程思维与数据科学素养，帮助学生及早熟悉AI赋能化学研究的新范式十分重要。AI化学实践课程面向化学学院本科生开设，旨在通过项目制实验引导学生探索人工智能与化学研究的融合，培养学生跨学科的研究能力与创新思维。课程采用“理论指导+实验操作+协作探究”的模式，通过“化学问题→数据→模型→验证”的完整训练，帮助学生熟悉人工智能在反应预测、条件优化、谱图解析、设备自动化等重要实验场景中的应用原理与实操过程，培养学生运用AI技术和跨学科知识解决实际问题的能力，为学生未来在AI4Science领域开展原创性工作奠定基础。课程教学强调实践训练，由学生自主组队并选择研究项目，引导学生在“做中学”，结合理论

讲座、方案研讨、交流与汇报等环节，通过文献调研、实验设计、实践操作、数据分析到论文撰写的完整科研训练培养学生的科学素养。课程注重过程性评价，既关注学生的实验操作、规范记录、安全环保等基本素养，也关注问题解决、创新思维和团队合作能力的培养。课程期望通过实践引导学生主动应用AI解决化学研究中的关键科学技术问题，探索新一代“化学+AI”拔尖创新人才的培养方案。

英文简介（Course Description）：

The rapid development of artificial intelligence (AI) has profoundly influenced and reshaped scientific research paradigms, particularly demonstrating broad prospects and potential in the field of chemistry. It is crucial to integrate AI-empowered scientific research practices into undergraduate chemistry laboratory teaching, fostering students' interdisciplinary programming thinking and data science literacy in a timely manner, and helping them become familiar with the new AI-driven research paradigm in chemistry at an early stage. The AI-Chemistry Practical Course, designed for undergraduate students in College of Chemistry, aims to guide students in exploring the integration of AI and chemical research through project-based experiments, cultivating their interdisciplinary research capabilities and innovative thinking. The course adopts a "theory-guided + hands-on experimentation + collaborative inquiry" model, providing comprehensive training through the workflow of "Chemical Problems → Data → Models → Validation", which helps students understand the application principles and practical processes of AI in critical experimental scenarios such as reaction prediction, condition optimization, spectral analysis, and equipment automation. It also nurtures their ability to solve real-world problems using AI technologies and interdisciplinary knowledge, laying a foundation for their future original work in the AI4Science field.

The course emphasizes practical training, where students independently form teams to select research projects. Guided by a "learning-by-doing" approach, the curriculum combines theoretical lectures, project discussions, exchanges, and presentations. Through a complete scientific training cycle—from literature review, experimental design, practical operations, and data analysis to paper writing—students develop scientific literacy. The course focuses on process-oriented evaluation, assessing not only basic competencies such as experimental skills, standardized documentation, and safety/environmental awareness but also problem-solving abilities, innovative thinking, and teamwork. It aims to inspire students to proactively apply AI in addressing key scientific and technological challenges in chemistry, thereby exploring innovative cultivation models for the next generation of "Chemistry + AI" talents.

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课程号（Course Number）：01035530

课程名称（Course Title）：有机化合物的合成与谱学结构表征/Syntheses and Spectroscopic Characterizations of Organic Compounds

开课院系（School/Department）：化学与分子工程学院/College of Chemistry and Molecular Engineering
学分（Credits）：2
授课教师（Faculty）：赵达慧 教授 Professor，张迪 助理研究员 ？Research Associate

先修课程（Prerequisites）：有机化学（一）、有机化学基础实验

中文简介：
以稳定的有机自由基分子的设计合成与谱学表征为主要学习和实践目标，课程内容将包含所合成分子的结构设计讨论、合成路线分析与设计、自由基分子的制备合成、自由基前体的谱学表征(NMR、UV-vis吸收和荧光光谱等）以及自由基分子的谱学表征（顺磁共振和吸收发射光谱）、实验报告撰写、实验总结讨论等内容。

英文简介（Course Description）：
With the goal of teaching and practicing the experimental skills of synthesizing, as well as characterizing the molecular structures and properties of organic compounds with closed- and open-shell structures, the course provide the students with opportunities to comprehensively studying relevant literatures, analyzing and discussing the organic synthesis routes, conducting organic synthetic procedures, as well as isolating and purification procedures, learning the fundamental instrumental theory of NMR, EPR and UV-vis absorption and fluorescence spectroscopy.

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课程号（Course Number）：01130160
课程名称（Course Title）：细胞生物学实验/Cell Biology Lab.
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：1
授课教师（Faculty）：张泉 副教授 Associate Professor，辛广伟 高级工程师 Senior Engineering，吕红霞 高级工程师 Senior Engineering，李美琪 工程师 Engineer

先修课程（Prerequisites）：先修 “细胞生物学“ 课程对理解实验中涉及到的细胞生命现象有帮助。

中文简介：
细胞生物学实验课程旨在通过精选的实验，培养学生掌握基本的实验操作技能和实验设计思路，训练科学观察、数据记录与分析能力，帮助学生学会使用理论知识分析问题、解决问题。通过该课程，学生将初步掌握细胞生物学研究的基本思维方式和重要实验技术，为后续科学研究奠定必要的知识与技能基础。

英文简介（Course Description）：
The Cell Biology Laboratory course aims to develop students’ fundamental experimental

skills and experimental design strategies through a selection of carefully chosen experiments. It trains students in scientific observation, data recording, and analysis, and helps them apply theoretical knowledge to analyze and solve problems. Through this course, students will gain a foundational understanding of the key thought processes and essential experimental techniques in cell biology research, providing them with the necessary knowledge and skills for future scientific studies.

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课程号（Course Number）：01130210
课程名称（Course Title）：遗传学实验/Genetics Lab
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：1
授课教师（Faculty）：张泉 副教授 Associate Professor，辛广伟 高级工程师 Senior Engineering

先修课程（Prerequisites）：遗传学，分子生物学

中文简介：
本课程紧密配合遗传学课程而设置，通过从实验设计和理念的讲授，到实际的遗传实验操作，加深对课堂讲授内容的理解，拓展思维的空间。

我们的遗传学实验内容将细胞染色体水平、基因组水平，功能基因组水平的实验有机的融合在一起。不仅包括经典的验证性实验，而且引入了与科研密切相关的现代基因功能研究的实验。首先通过展示和讲授不同的模式动物（如果蝇、线虫和斑马鱼），让学生认识到模式动物的在遗传性研究中的重要性。通过染色体制备、观察和引入果蝇平衡染色体的使用，让学生真正从实际使用的层面了解染色体是基因的载体，认识基因是如何通过染色体传递遗传信息的。经典的正向遗传学验证性实验，我们将通过一个杂交实验，就可同时分析和验证遗传学的三大定律（基因的自由组合，分离定律，连锁定律）、伴性遗传，同时分析基因间的遗传距离；基因的互作则通过玉米的遗传实验实现。现代后基因组时代反向遗传学的实验，则强调基因突变对研究基因功能的重要性，通过功能丧失（loss of function）或者获得(gain of function)的基本策略实现基因突变后研究目的基因表型的目的，“Gal4/UAS系统（被称为果蝇遗传学研究的瑞士军刀）诱导癌基因在果蝇中异位表达”可以实现功能获得的目的，而 “利用Flp/FRT 系统构建果蝇的Mosiac克隆 (获得纯合突变克隆)”可以实现功能丧失的目的。同时传授这些系统的灵活和组合使用可以达到的不同目的，进而让学生自己设计实验，从而实现利用遗传性理念和工具在科学研究中研究基因功能的目的。

英文简介（Course Description）：
This course focuses on the genetics Lab from concept to design and practical procedure, closely related to the theory course in order to deepen and extend the knowlege and dimension of thinking.
The content of this genetics Lab combined chromosome, molecular and functional experiments together, including classical genetic crosses and crosses of gene function

used in modern scientific researches. Firstly, we introduce C. elegans, Drosophila and zebrafish as model animals to emphasize their importance and respective characters in the research of genetics. Then through the preparation and analysis of polytene chromosome, observation of chromosomes of different species and identification of phenotypes of balancers and mutants in fly, let students to know the genes on the chromosome and how the genetic message pass through chromosomes. We design a single cross in which the classical genetic laws of segregation, recombination, distance among genes and sexual linkage can be tested and verified at the same time. The complex network of interaction that give rise to multifactorial traits can be tested and analyzed by counting the number of different phenotypes of core kernels. For the gene functional research in the term of reverse genetics, we emphasize the significance of the mutation through the strategy of loss or gain of function. The ectopic expression of oncogene in fly eye using Gal4/UAS system (A Fly Geneticist's Swiss Army Knife) and making Mosiac clones by FLP/FRT system are our extended experiments to achieve the goal of gain or loss of function. We also let students to design their own experiment using these versatile tools to study the function of genes. All these experiments are overlapped during the period of one semester.

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课程号（Course Number）： 01130912
课程名称(Course Title)：南海海洋生态学野外实践/Marine Ecology Field Practice of South China Sea
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 2
授课教师(Faculty)：李晟 长聘副教授 ，饶广远 教授 Professor，李大建 实验师 Lab Master，龙玉 讲师 Lecturer，贺新强 教授 Professor，孟世勇 工程师 Engineer，王戎疆 副教授 Associate Professor

先修课程（Prerequisites）： 生物学综合野外实习（或同类课程）

中文简介：
本课程面向生态学与演化生物学方向的2、3年级本科生，借由海洋生态学中的具体实例课题使学生掌握生态学研究的基本方法和流程，提升学生解决实际问题的科研实践能力和综合运用多学科知识的自主创新能力。课程实践地点在广西钦州三娘湾，以广西北部湾潮间带、近岸、浅海的多类型生态系统为天然实验室，以海洋生态学中的实例课题为载体，引领学生深入了解南海热带海洋生态系统的物种组成、种间关系、物质循环、能级传递，各类生态因子的作用及关系，人类活动对生态系统的影响等，并运用种群生态学、群落生态学及生态系统生态学的基本原理和研究方法解释现象、总结规律、提出并验证假设、解决生产实践中的具体问题。

英文简介（Course Description）：
This is a field practice course for senior grade students in the major of ecology and

evolution biology. The students will be organized to work on specific in situ cases of marine ecology topics using integrative research tools. The course will be taught at Sanniang Bay, Qinzhou, Guangxi, and use the intertidal and coastal areas of Beibu Bay as the study ecosystems. The students will learn knowledge of species composition, inter-specific relationship, energy flow and nutrient cycling etc. of the study systems, and gain insights into the ecological process and human-nature interactions of coastal South China Sea.

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课程号（Course Number）：01132677
课程名称（Course Title）：分子生物学实验/Molecular Biology Experiments
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：1
授课教师（Faculty）：毕群 副教授 Associate Professor，刘旖璇 工程师 Engineer

先修课程（Prerequisites）：普通生物学理论课，且建议了解一定的分子生物学实验课相关原理。

中文简介：
本课程旨在培训学生分子生物学基本的实验方法和技术。在实验过程中使学生掌握基础分子生物学实验的基本原理和结果分析方法，并得到相应的实验技能和操作训练。课程主要包括以下几个部分：

1. 质粒DNA的分离纯化。
2. DNA的限制性内切酶消化。
3. DNA琼脂糖凝胶电泳。
4. 利用PCR技术扩增GFP基因。
5. Gibson assembly构建pET28a-EGFP表达载体。
6. 阳性克隆的筛选及外源基因在原核细胞中的诱导表达。
7. 唾液细胞总RNA提取及逆转录合成cDNA。
8. 夜猫子基因推定及表达检测。
9. 转录因子HetR的凝胶阻滞分析。

英文简介（Course Description）：
The present course is an experimental teaching course opened for students majoring in biosciences. The technology commonly used in molecular biology will be taught in this course. Through several experiments, the students will not only learn the related technology, but also will realize how to use it in the practice of scientific research. This course includes following parts:

1. Extraction and purification of plasmid DNA.
2. Digestion of plasmid DNA with restriction endonucleases.
3. Agarose gel electrophoresis of DNA.

4. In vitro amplification of GFP gene by the polymerase chain reaction.
5. Construction of expression vector through Gibson assembly.
6. Identification of positive colonies and induction expression of foreign gene in prokaryotic cell.
7. Extraction of total RNA from salivary cells and its reverse transcription.
8. Detection of gene related to Delayed Sleep Phase Disorder (DSPD).
9. Electrophoretic mobility shift assay of transcription factor HetR.

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课程号（Course Number）： 01132679
课程名称（Course Title）：产业实习实践/Industry practice
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 3
授课教师（Faculty）： 王世强 教授 Professor，曲一铭 助理研究员 ？Research Associate

先修课程（Prerequisites）： 无

中文简介：
本课程主要内容为，组织学生赴产业相关单位进行不少于4周的实习实践，并在实践前进行相关技能培训，实践后进行总结报告。目的是引导学生通过亲身实践深入了解产业运作模式和发展方向，树立个人职业发展目标，进而合理规划学业和职业生涯。

英文简介（Course Description）：
The main content of this course is to organize students to go to industry enterprises for at least four weeks of practice. Students should be trained in relevant skills before practice. After practice, students need to make a summary report. Through summer internship in enterprises, this course will guide students to deeply understand the operation mode and development direction of enterprises. Through personal practice, students will establish personal career development goals, and then rationally plan their academic and career.

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课程号（Course Number）： 01132685
课程名称（Course Title）：衰老生物学/Biology of aging
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 2
授课教师（Faculty）： 陶伟 教授 Professor
先修课程（Prerequisites）： 具备基本的细胞生物学和遗传学的基本知识。

中文简介：
随着我国以及世界许多发达国家人口进入老龄社会，衰老成为对社会和发展有着重大影响的学科。衰老和健康老年也成为当前的热门话题和研究领域。本课程讲授衰老发生的基本原理和当前的主要理论，着眼于介绍与人类生活和健康密切相关的衰老知识，揭示衰老与社会普遍关注的癌症，神经退行性疾病以及心血管疾病等诸多衰老相关疾病发生的科学关系，介绍当前衰老科学的重大进展及其对当前人类社会及未来的深远影响，阐述当前潜在的抗衰老途径方法和现实意义，以及抗衰老面临的机遇和挑战。

英文简介（Course Description）：
With the population of our country and many developed countries entering the aging society, aging has become a subject that has a significant impact on society and development. Aging and healthy aging have become hot topics and research fields. This course introduces the basic principles and current main theories of aging, focuses on the introduction of aging knowledge closely related to human life and health, reveals the scientific relationship between aging and many aging related diseases, such as cancer, neurodegenerative diseases and cardiovascular diseases, which are generally concerned by the society, and introduces the major progress of current aging science and its depth to the current human society and the future Far influence, expound the current potential anti-aging methods and practical significance, as well as the opportunities and challenges of anti-aging.

-End-

课程号（Course Number）： 01133036
课程名称（Course Title）：生命的逻辑/The logic of life
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 2
授课教师（Faculty）： 白书农 教授 Professor，龙漫远(校外) 待定 ，钱紘(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
2021修改版：

《生命的逻辑》课程从2016年试开至今，已经开讲5年了。在2018年发布过一版课程介绍。该版介绍概括了2016、2017两年期间的课程内容，也介绍了选课同学的反馈。在之后三年，尤其是新冠疫情造成的影响，授课教师对“生命的逻辑”有了更深多的思考。加上2020年新冠疫情所致的居家工作，让授课教师有机会把之前几年授课内容整理成文。这些思考和写作，都使得本课程的内容和授课方式需要做出一些调整。另外，在过去5年授课过程中，注意到大部分同学很难有阅读课程推荐的参考书和文献的时间，好在从2019年至今，授课教师有幸获得一些演讲和专栏写作的机会，对本课程的内容做过一些概述。可以为有意向选修本课程的同学了解课程内容提供一些参考。

另外，本课程有一个特别的要求，即在开课第一天提交一份课前论文《我理解的生命》。概述一下自己目前理解的生命。篇幅在2页A4纸。请选课的同学做好准备。

2018版：

都说要珍惜生命。可是生命是什么？很多学者都认为他们在解读生命甚至“规定”生命。可是如果我们了解生命是在10的9次方（10亿）年的时间尺度中出现的自然现象，而人类有记录的历史不过是10的3次方（千）年的时间尺度上才发生的故事，会不会觉得号称自己或者自己研究的学科在“规定”生命的人在什么地方有点儿不对劲儿？

现在社会上，起码在我们的校园中，否认我们人类是生命体的人恐怕不多了。可是谁能说清楚“生命”究竟是什么？人们以为或者期待生物学家会给出标准答案，可是生物学家口中陌生而拗口的术语，他们演讲的幻灯片中令人眼花缭乱的符号，常常让绝大多数不以生物研究为业的人敬而远之。可是，树欲静而风不止。伴随对生命科学敬而远之的，却往往是对日新月异而且难以理解的新发现所带来的各种传言的困惑和面对变幻莫测生存环境的焦虑。生命科学发展得越迅猛，似乎离大众的距离也越远。研究者和大众之间在生命认知上越来越大的鸿沟该由谁来填补呢？

面对超越“摩尔定律”速率增加的生命科学研究领域的庞大信息，指望让大众按照专业生物教育的模式来了解生命显然是不现实的。可是，无论从社会还是从生命科学自身可持续健康发展的角度，又都不得不设法让更多的社会成员了解生命的本质和基本规律，从而在生活中遵循生命的规律而构建和谐的生活。毕加索当年受远古洞穴岩画启发而把毛发必现的写实的牛画成线条勾勒的抽象的牛，似乎为解决上述困境提供了一个值得尝试的途径：以抽象的方式，从海量信息中抽象出核心要素。看他寥寥几笔，大概没有几个成年人不会马上分辨出大师画的是“牛”而不是别的什么动物。以帮助受众思考生命本质、理解生命规律为目的，生命科学学院白书农教授根据其多年研究工作中形成的对生命的理解和感悟，设计了《生命的逻辑》课程，作为供全校同学（不分专业、不分年级）选修的通选课，和大家一起探讨我们每个人都无法回避的“生命”的本质及其规律问题。

本课程设计为暑假小学期小班课（限25人）。32个学时，2个学分。授课、讲座、结合讨论。主要围绕与大家日常生活密切相关的问题介绍与生命有关的基本知识及其内在联系。根据出席与讨论参与程度（10%）和两篇论文（每篇2000字左右的）以及两次讲座的心得（论文与心得共占90%）三方面来计成绩。两篇论文都是以“你理解的生命” 主题，总结自己对“生命”的理解。在课程的开始和结束时各提交一篇。论文目的在于帮助选课者了解自己随课程进程对“生命”现象理解的变化。论文将根据论点是否明确、论证是否有依据（是否有参考文献以及对参考文献引用的规范性）及论证的合理性等三方面予以评分。

特别值得介绍的是，本课程的讲座部分，将由两位美国著名大学的教授承担。一位是美国芝加哥大学的演化生物学教授龙漫远。他是国际上新基因起源研究的开创者和引领者。他将为本课程讲授生物演化的基本原理。另一位是位于美国西雅图的华盛顿大学的应用数学教授钱紘。他以数学的家学积淀，遍历天体物理、生物化学、蛋白质结构计算，最后在应用数学领域，用数学的方法，描述纷繁复杂的生命过程，从中发掘出简明美妙的基本规律。他将为本课程讲授能否以及如何用定量科学的逻辑来解释生命系统的内在规律。

英文简介（Course Description）：

My independent scientific career started from an attempt to decipher genetic program of organ formation, using stamen as an experimental system. This effort led to a scenario that a stamen is a node of three cycles: cell cycle, sexual reproduction cycle and life cycle, functioning as a turning point linking multicellular structures and unicellular sexual reproduction cycle.

The rationale of choosing decipher genetic program of organ formation as a research interest could be traced back to my postdoc era in UC Berkeley with Renee Sung. Through a project characterizing an Arabidopsis mutant "embryonic flower" in Renee's lab, I firstly faced a challenge on which the "vegetative" or "reproductive" phase is "default", whether a plant has a developmental program, in comparison with animal individual, and if a plant has, when is its starting and ending point. To answer these questions, I proposed a new concept called "plant developmental unit (PDU)" in 1993 (Bai 1999; Bai and Xu 2013). This concept contains three aspects: 1) a plant should have a determined genetic program otherwise no "generation" could be identified. Such a determined genetic program starts from a zygote and ends at two different types of gametes; 2) while unlimited number of organs can be generated by a shoot tip (e.g. the shoot apical meristem in angiosperms), the organ types are limited. Therefore, all organ types, if we ignore the number and imagine one pair of organs each each type, generated from one shoot tip (using Arabidopsis as an example, including cotyledon, rosette leaf, cauline leaf, sepal, petal, stamen and carpal) consists a PDU ; 3) a plant that people usually considered as an individual is essentially not an individual comparable to an animal, such as a worm, a fly and a human, which carries out the genetic program, but a colony comparable to coral, consisting of unlimited number of partial PDU. This concept is essentially the elaboration of ideas proposed by the founder fathers of modern botany, i.e. Grew and Malpigi back to 17th century, carried out by Waddington in 1960s' and should be revived in the future.

Based on the conceptual framework of PDU, I used to divide plant developmental program as three subprograms: vertical, controlling sequential emergence of organ types; horizontal, controlling organ formation of each type from a group of undifferentiated cells to an organ with particular shape, structure and function; and environmental response. The first is too difficult to experimentally pursue and the third one is developed so well and I have no idea to make the progress any better. So I chose the second. I chose stamen as my experimental system not only because of its conservation in shape and function, but because of its application potential in artificial male sterility used for heterosis in crop improvement.

Taken together, a set of principles emerged that governs plant morphogenesis or development although numerous variations can be added in for each species. These principles could be summarized as "plant morphogenesis 123". ONE means one start point,

i.e. SRC. TWO means two themes, i.e. structure building (through “neo-modularization) and environment responding (through two driving forces, i.e. photoautotroph and stresses responses). THREE means three sequential steps to complete a single “ring”:

1. photoautotrophism driving an increase in surface area for photosynthesis and away from the unicellularity of the SRC;
2. the increased external and internal stress that accompanies the increase in the surface area available for photosynthesis;
3. this increase in stress driving a reduction in the surface area available for photosynthesis and compelling the morphogenesis back toward the unicellularity of the SRC.

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课程号（Course Number）：01134110
课程名称（Course Title）：生态学野外实践/Field Practice of Forest and Wildlife Ecology
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：2
授课教师（Faculty）：王戎疆 副教授 Associate Professor，贺新强 教授 Professor

先修课程（Prerequisites）：普通生态学，生物学野外实习

中文简介：
生态学是研究生物与生物之间以及生物与环境之间关系的学科。生态学研究多在野外环境中开展，有其特殊的研究方法和实施过程，而这是无法通过一般课堂教学所能学习和体会的。本课程将把有一定生物学基础知识的本科生带到自然保护区等野外环境，主要在四川省岷山北部，以平武县王朗国家级自然保护区为核心基地，并涵盖周边位于唐家河国家级自然保护区、九寨沟国家级自然保护区、老河沟自然保护区内的若干野外站点。通过让学生参与野外生态学研究项目，学习野外生态学研究的基本过程和研究方法。通过本课程的学习，学生将加深对生态学基本概念的理解，了解生态学野外研究的基本过程和操作方法，从而掌握实验设计、数据获取以及数据分析等基本方法，培养学生基本的野外调查与科研能力，为将来从事动物学、植物学、保护生物学和生态学野外研究奠定基础。

英文简介（Course Description）：
Ecology is focused on the relationship between organism and environment and between organisms. Being conducted in wild environment, ecological researches possess specific methods and protocols, which could not be learned in common courses. In this course, the students with general knowledge of ecology will be brought into the wild environment such as nature reserves. They will take part in the ongoing projects of forest and wildlife ecological researches, from which they will learn the conventional and advanced methods in ecological researches. Through studying the course, the students will improve the understanding of general ecological concepts, and learn the methods of designing

experiments, inquiring data, and analyzing data, which will confer the basis for ecological field research in future.

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课程号（Course Number）：01134140
课程名称（Course Title）：生物学综合野外实习/Field Practice of Biology
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：2
授课教师（Faculty）：王戎疆 副教授 Associate Professor，李晟 长聘副教授 ，饶广远 教授 Professor，李大建 实验师 Lab Master，顾红雅 教授 Professor，龙玉 讲师 Lecturer，贺新强 教授 Professor，孟世勇 工程师 Engineer，张立光 工程师 Engineer，佟向军 教授 Professor
先修课程（Prerequisites）：植物生物学，动物生物学

中文简介：
生物学野外实习是生物类本科生重要的学习内容和基本的教学训练，是同学们了解生物多样性及其与环境相互关系的重要环节，它不仅是对动物生物学、植物生物学和其它生物学课程课堂知识和室内实验内容的必要补充，而且具有独特的形式、内容和效果。内容包括不同生境下植物的主要类群的识别，陆生植物和海洋潮间带藻类识别、标本的采集和保存方法，陆生动物（主要是昆虫）和海洋潮间带动物主要类群的识别，啮齿类动物种群调查、鸟类环志和动物行为观察和动物标本的采集和制作方法。通过野外实习培养学生自主发现问题、解决问题的能力，激发同学们探索自然奥秘的愿望，进而从内心热爱自然，热爱生命科学。此外，野外实习还是培养同学之间互助、团结和合作精神的课堂。

英文简介（Course Description）：
Field Practice of Biology is focused on plants, animals, their relationships and relationships between environment and organisms. In this course, the students will learn the basic identification of plants and animals, ecological methods to study the plant and animal life in the wild environment such as natural reserves. Through studying the course, the students will improve the understanding of general biological concepts, and learn the methods of designing experiments, inquiring data, and analyzing data, which will confer the basis for biological study in future.

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课程号（Course Number）：01134140
课程名称（Course Title）：生物学综合野外实习/Field Practice of Biology
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：2
授课教师（Faculty）：王戎疆 副教授 Associate Professor，李晟 长聘副教授 ，饶广远 教

授 Professor，李大建 实验师 Lab Master，顾红雅 教授 Professor，龙玉 讲师 Lecturer，贺新强 教授 Professor，孟世勇 工程师 Engineer，张立光 工程师 Engineer，佟向军 教授 Professor

先修课程（Prerequisites）：植物生物学，动物生物学

中文简介：
生物学野外实习是生物类本科生重要的学习内容和基本的教学训练，是同学们了解生物多样性及其与环境相互关系的重要环节，它不仅是对动物生物学、植物生物学和其它生物学课程课堂知识和室内实验内容的必要补充，而且具有独特的形式、内容和效果。内容包括不同生境下植物的主要类群的识别，陆生植物和海洋潮间带藻类识别、标本的采集和保存方法，陆生动物（主要是昆虫）和海洋潮间带动物主要类群的识别，啮齿类动物种群调查、鸟类环志和动物行为观察和动物标本的采集和制作方法。通过野外实习培养学生自主发现问题、解决问题的能力，激发同学们探索自然奥秘的愿望，进而从内心热爱自然，热爱生命科学。此外，野外实习还是培养同学之间互助、团结和合作精神的课堂。

英文简介（Course Description）：
Field Practice of Biology is focused on plants, animals, their relationships and relationships between environment and organisms. In this course, the students will learn the basic identification of plants and animals, ecological methods to study the plant and animal life in the wild environment such as natural reserves. Through studying the course, the students will improve the understanding of general biological concepts, and learn the methods of designing experiments, inquiring data, and analyzing data, which will confer the basis for biological study in future.

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课程号（Course Number）：01134140
课程名称（Course Title）：生物学综合野外实习/Field Practice of Biology
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：2
授课教师（Faculty）：王戎疆 副教授 Associate Professor，李晟 长聘副教授 ，饶广远 教授 Professor，李大建 实验师 Lab Master，顾红雅 教授 Professor，龙玉 讲师 Lecturer，贺新强 教授 Professor，孟世勇 工程师 Engineer，张立光 工程师 Engineer，佟向军 教授 Professor

先修课程（Prerequisites）：植物生物学，动物生物学

中文简介：
生物学野外实习是生物类本科生重要的学习内容和基本的教学训练，是同学们了解生物多样性及其与环境相互关系的重要环节，它不仅是对动物生物学、植物生物学和其它生物学课程课堂知识和室内实验内容的必要补充，而且具有独特的形式、内容和效果。内容包括不同生境下植

物的主要类群的识别，陆生植物和海洋潮间带藻类识别、标本的采集和保存方法，陆生动物（主要是昆虫）和海洋潮间带动物主要类群的识别，啮齿类动物种群调查、鸟类环志和动物行为观察和动物标本的采集和制作方法。通过野外实习培养学生自主发现问题、解决问题的能力，激发同学们探索自然奥秘的愿望，进而从内心热爱自然，热爱生命科学。此外，野外实习还是培养同学之间互助、团结和合作精神的课堂。

英文简介（Course Description）：

Field Practice of Biology is focused on plants, animals, their relationships and relationships between environment and organisms. In this course, the students will learn the basic identification of plants and animals, ecological methods to study the plant and animal life in the wild environment such as natural reserves. Through studying the course, the students will improve the understanding of general biological concepts, and learn the methods of designing experiments, inquiring data, and analyzing data, which will confer the basis for biological study in future.

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课程号（Course Number）：01138495

课程名称(Course Title):生命科学前沿实验模块课/Cutting Edge Laboratory Research Module in Life Sciences

开课院系（School/Department）：生命科学学院/College of Life Sciences

学分（Credits）：2

授课教师（Faculty）：王青松 副教授 Associate Professor，辛广伟 高级工程师 Senior Engineering，梁希同 助理教授 ，李美琪 工程师 Engineer

先修课程（Prerequisites）：普通生物学实验、生物化学实验、分子生物学实验

中文简介：

生命科学前沿实验模块课是一门以本科生自主探究为中心的生命科学创新实验课程。本课程由多位PI导师主持设计，将前沿的生物学科学问题和实验方法设计为适合本科生科研训练的创新实验课题。学生在PI导师与实验教学中心老师共同指导下，将所学专业知识技能综合应用于开放性的生物学创新实验课题，接受全面的科学训练过程，培养提升学生的文献查阅、实验设计与实验操作、科学沟通与写作等综合科研能力，使学生得到充分的科研思维、科研技能与自主科研能力的训练。

英文简介（Course Description）：

Cutting Edge Laboratory Research Module in Life Sciences is an innovative laboratory course in life sciences aimed at undergraduate independent inquiry. Designed and led by multiple PI (Principal Investigator) mentors, this course translates cutting-edge biological scientific problems and experimental methods into innovative experimental projects suitable for undergraduate research training. Under the joint direction of PI mentors and teachers from the experimental teaching center, students integrate their

professional knowledge and skills to tackle open-ended biological research projects, undergoing a comprehensive scientific training process. The course aims to foster and enhance students' comprehensive scientific research capabilities, including literature review, experimental design and operation, as well as scientific communication and writing, thus providing students with thorough training in scientific thinking, research skills, and independent research abilities.

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课程号（Course Number）： 01138495
课程名称(Course Title):生命科学前沿实验模块课/Cutting Edge Laboratory Research Module in Life Sciences
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 2
授课教师（Faculty）： 王青松 副教授 Associate Professor，李毓龙 教授 Professor，辛广伟 高级工程师 Senior Engineering，朱文苑 工程师 Engineer，冯杰思 副研究员 Associate Research Fellow

先修课程（Prerequisites）： 普通生物学实验、生物化学实验、分子生物学实验

中文简介：
生命科学前沿实验模块课是一门以本科生自主探究为中心的生命科学创新实验课程。本课程由多位PI导师主持设计，将前沿的生物学科学问题和实验方法设计为适合本科生科研训练的创新实验课题。学生在PI导师与实验教学中心老师共同指导下，将所学专业知识技能综合应用于开放性的生物学创新实验课题，接受全面的科学训练过程，培养提升学生的文献查阅、实验设计与实验操作、科学沟通与写作等综合科研能力，使学生得到充分的科研思维、科研技能与自主科研能力的训练。

英文简介（Course Description）：
Cutting Edge Laboratory Research Module in Life Sciences is an innovative laboratory course in life sciences aimed at undergraduate independent inquiry. Designed and led by multiple PI (Principal Investigator) mentors, this course translates cutting-edge biological scientific problems and experimental methods into innovative experimental projects suitable for undergraduate research training. Under the joint direction of PI mentors and teachers from the experimental teaching center, students integrate their professional knowledge and skills to tackle open-ended biological research projects, undergoing a comprehensive scientific training process. The course aims to foster and enhance students' comprehensive scientific research capabilities, including literature review, experimental design and operation, as well as scientific communication and writing, thus providing students with thorough training in scientific thinking, research skills, and independent research abilities.

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课程号（Course Number）： 01138495
课程名称(Course Title):生命科学前沿实验模块课/Cutting Edge Laboratory Research Module in Life Sciences
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 2
授课教师（Faculty）： 王青松 副教授 Associate Professor，伊成器 教授 Professor，彭金英 助理研究员 ？Research Associate，辛广伟 高级工程师 Senior Engineering

先修课程（Prerequisites）： 普通生物学实验、生物化学实验、分子生物学实验

中文简介：
生命科学前沿实验模块课是一门以本科生自主探究为中心的生命科学创新实验课程。本课程由多位PI导师主持设计，将前沿的生物学科学问题和实验方法设计为适合本科生科研训练的创新实验课题。学生在PI导师与实验教学中心老师共同指导下，将所学专业知识技能综合应用于开放性的生物学创新实验课题，接受全面的科学训练过程，培养提升学生的文献查阅、实验设计与实验操作、科学沟通与写作等综合科研能力，使学生得到充分的科研思维、科研技能与自主科研能力的训练。

英文简介（Course Description）：
Cutting Edge Laboratory Research Module in Life Sciences is an innovative laboratory course in life sciences aimed at undergraduate independent inquiry. Designed and led by multiple PI (Principal Investigator) mentors, this course translates cutting-edge biological scientific problems and experimental methods into innovative experimental projects suitable for undergraduate research training. Under the joint direction of PI mentors and teachers from the experimental teaching center, students integrate their professional knowledge and skills to tackle open-ended biological research projects, undergoing a comprehensive scientific training process. The course aims to foster and enhance students' comprehensive scientific research capabilities, including literature review, experimental design and operation, as well as scientific communication and writing, thus providing students with thorough training in scientific thinking, research skills, and independent research abilities.

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课程号（Course Number）： 01139376
课程名称（Course Title）：生物信息学实验/Bioinformatics Lab.
开课院系（School/Department）： 生命科学学院/College of Life Sciences
学分（Credits）： 1

授课教师（Faculty）：刘凤麟 工程师 Engineer

先修课程（Prerequisites）：生物信息学

中文简介：
“生物信息学实验”是面向本科生的主干基础课。本课程通过带领学生完成生物信息学领域具有代表性、先进性的实验，将生物信息学实验的实验原理、设计思路和实验技术结合起来，帮助学生掌握生物信息学实验的基本方法、培养学生的科研素养。
本课程是与“生物信息学”理论课配套的基础实验课程，促使学生加深对课堂讲授内容的理解，拓展思维的空间。教学内容以每学期教学大纲为准。

英文简介（Course Description）：
Bioinformatics experiment is a major course for undergraduates. By leading the students to carry out typical and cutting-edge bioinformatics experiments, we help them to grasp the methods of bioinformatics experiments and to develop experiment quality. The content of this course combined the experimental principles, design ideas and laboratory techniques.
This course associates with the theory study of bioinformatics, promoting the students to deepen their understanding of theory course and to extend the dimension of thinking. Details of teaching contents are showed in syllabus each semester.

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课程号（Course Number）：01139385
课程名称（Course Title）：生物信息产业实践/Practice in the Bioinformatics Industry
开课院系（School/Department）：生命科学学院/College of Life Sciences
学分（Credits）：2
授课教师（Faculty）：刘凤麟 工程师 Engineer，高歌 教授 Professor，孔雷 高级工程师 Senior Engineering

先修课程（Prerequisites）：无

中文简介：
本课程是一门旨在将理论知识与产业实践紧密结合的综合性课程。通过本课程的学习，学生将了解生物信息学相关企业的运作机制、发展动态以及技术应用，掌握产业实践的基本方法和技能。
通过案例分析、实地考察和项目实践等多种教学方式，学生将有机会了解产业的前沿技术和市场趋势，培养解决实际问题的能力。此外，课程还将注重培养学生的团队协作和创新精神。通过小组讨论、团队项目等形式，学生将学会与他人合作，共同解决实践中遇到的问题，培养创新思维和实践能力。
通过本课程的学习，学生将加深对生物信息学相关产业的理解，提升自己在产业实践中的竞争力，为未来的职业发展奠定坚实的基础。

英文简介（Course Description）：
This comprehensive course aims to tightly integrate theoretical knowledge with industrial practice. Through studying this course, students will gain an understanding of the operational mechanisms, development trends, and technological applications of enterprises, and master the basic methods and skills of industrial practice.
Utilizing various teaching methods such as case studies, field trips, and project practices, students will have the opportunity to learn about cutting-edge industrial technologies and market trends, and cultivate their ability to solve practical problems.
Additionally, the course will emphasize fostering students' team collaboration and innovative spirit. Through group discussions, team projects, and other formats, students will learn to collaborate with others, jointly solve problems encountered in practice, and cultivate innovative thinking and practical abilities.
Through studying this course, students will deepen their understanding of the bioinformatics-related industry, enhance their competitiveness in industrial practice, and lay a solid foundation for their future career development.

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课程号（Course Number）： 01230470
课程名称（Course Title）：北斗系统与时空智能/BDS-based Spatiotemporal Intelligence
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 2
授课教师（Faculty）： 陈秀万 教授 Professor

先修课程（Prerequisites）： 不需要先修课程。

中文简介：
北斗系统是中国自主卫星导航系统，与美国GPS、俄罗斯GLONASS和欧洲Galileo并称世界四大全球导航卫星系统（Global Navigation Satellite System，GNSS）。北斗三号基本系统已于2018年底建成并开始提供全球基本服务，2020年7月完成全球系统建设并正式提供服务。时空智能和视觉智能、声音智能一样，属于人工智能的一部分。精准时空服务——动态厘米级静态毫米级的高精度定位服务和纳秒级授时服务，已经成为人工智能感知外在所需的基础信息之一。“北斗系统与时空智能”属于二十世纪七十年代以来被称为世界三大尖端技术（空间技术、能源技术、人工智能）之“空间技术”与“人工智能”的交叉领域。
本课程结合北斗时空智能应用创新和全国大学生创新创业实践相关项目的实施，以及北京大学“导航与位置服务”学科建设，基于“北斗杯”全国青少年科技创新大赛（教育部科技司、共青团中央学校部、中国科协青少年科技中心和中国卫星导航系统管理办公室于2010年联合发起）项目十余年来累积的大中学生科技创新成果及孵化经验，面向大学生和社会公众，介绍北斗卫星导航与时空智能的基本概念、发展历史、关键技术、典型应用和对创新型国家建设的深远影响，展示北斗系统的应用发展前景，为大学生和社会公众提供一个全面了解北斗系统与时空智能的平台。

本课程依托中国卫星导航定位协会北斗产教融合创新专业委员会（北京大学遥感与地理信息系统研究所）、北京青少年拔尖创新人才培养基地（北京大学）、北京大学全球大学生创新创业中心、地球观测与导航教育部工程研究中心、中欧卫星导航技术培训合作中心等平台，突出跨学科综合优势，加强与教育部卫星导航联合研究中心（应用技术研究分中心）21所成员高校和“北斗遨翔”青少年科技创新教育计划的专家团队、科技教师、企业高管、行业主管人员等的合作，探索将北斗时空智能技术的原理、应用和前景融入基础自然科学和社会人文科学中，培养、激发青少年开展北斗时空智能创新创业的兴趣、热情。
本课程将邀请政、产、学、研、用、资领域专家担任课程讲师和创业导师，通过“线上+线下”讲座、考察、观摩、实训、挑战赛等形式，展现科学、技术、工程和商业等各个领域的专家对北斗时空智能技术的理解和创新创业体会。课程注重创新创业实践，以创新创业项目组为培养单元，选择若干个独具创意和产业化前景的时空智能应用领域（兼容芯片与智能终端、泛在定位与位置服务、导遥融合与时空云平台、车联网与智慧交通、安防监管与智慧应急、智能农机与智慧农商、航空导航与生命救援、船联网与智慧海洋、通导融合与智慧康养、时空智能与智慧城市、时空智能产教融合创新等）。优先支持“北斗杯”全国青少年科技创新大赛与“北斗之星”创新创业大赛丝路国际挑战赛获奖项目和双创孵化机构（创投基金）有资助意愿的项目，由双创“三师”（科技教师、科学大师、创业导师）对各项目团队进行针对性指导、训练，并通过挑战赛、项目路演、中外双创资源渠道对接等形式，推动双创团队和创投机构的成果转化与企业孵化合作。

英文简介（Course Description）：

BeiDou Navigation Satellite System (BDS) is one of the four space-based Global Navigation Satellite Systems (GNSS), along with US's GPS, Russia's GLONASS, and the Europe Union's Galileo. The China homegrown BDS system started to provide global initial service at the end of 2018 and global full operation service at the end of July 2020. Spatiotemporal intelligence, like visual intelligence and acoustic intelligence, belongs to part of artificial intelligence (AI). Precision space-time service has become one of the basic sensed information needed by AI. BDS/GNSS-based Spatiotemporal Intelligence (BDSI) belongs to the intersection field of space technology and artificial intelligence which, along with energy technology, have been called the world's three most advanced technologies since 1970s.
This course is aimed to integrate the incubation experience for and innovation achievements from participants of the BeiDou Cup China Adolescents Science & Technology Innovation Contest (BD-CASTIC) initiated by Science and Technology Department of the Ministry of Education with related organizations in 2010, and the navigation and location-based service (NLS) discipline initiated by Peking University, so as to provide innovation and entrepreneurship training for college students and other youngsters. The contents of the course include the introductions of basic concepts, development history, key technologies and typical applications of BDSI, and its far-reaching impact on the innovative country construction, and provide a platform for pioneers to fully understand BDS system and spatiotemporal intelligence.
Relying on Beidou Industry Education Integration Innovation Professional Committee (the Institute of Remote Sensing and Geographic Information Systems at Peking University) of GNSS and LBS Association of China, Beijing Youth Top-notch Innovative Talent Cultivation Base (Peking University), Peking University Center for Innovation and

Entrepreneurship of Global College Students, Engineering Research Center of Earth Observation and Navigation of the Ministry of Education, China-Europe Satellite Navigation Technology Training and Cooperation Center etc., this course strengthens the interdisciplinary advantages and cooperation among the 21 member universities of Joint Center of GNSS of the Ministry of Education, and the organizers and experts of BDShare Youth Science and Technology Innovation Education Program. Through the co-innovation among team experts, science and technology teachers, and enterprise executives, we wish to explore the principles, applications and prospects of BDSI technology into various natural sciences and social sciences, and cultivate and stimulate the interest and enthusiasm of young people in BDSI innovation and entrepreneurship.

Experts from governmental sectors, universities, institutions, application and investment organizations will be invited to serve as lecturers and entrepreneurship mentors. Through on-line and/or off-line lectures, field surveys, project roadshow, training and challenge competitions, participants will share understanding of BDSI and their innovative and entrepreneurial experience with experts in various fields. The course focuses on the practice of innovation and entrepreneurship, with project team as the training unit. Each team chooses one of the BDSI application fields with unique creativity and industrialization prospects, with incubating support prior to the BD-CASTIC and BDStars (SilkRoad) Innovation and Entrepreneurship Competition award winning projects and those with funding intention from innovation and entrepreneurship incubators. Outstanding science and technology teachers, scientific experts and venture mentors will jointly provide targeted guidance and training to the project teams, so as to strongly promote the cooperation between the team and venture capitalists in achievements incubating and technology transfer.

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课程号（Course Number）： 01231640
课程名称（Course Title）：普通地质实习A/Introdution to Field Geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 2
授课教师(Faculty)：张志诚 教授 Professor,许成 教授 Professor,黄宝春 教授 Professor,张元元 长聘副教授 ，吴辉 助理教授 ，王久源 助理教授
先修课程（Prerequisites）：《地球科学概论（二）》

中文简介：
本次野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习，重点强调地质基本概念、基本知识和基本技能训练。通过短期的野外实践使同学们对地质学研究的主要内容和特点有一个比较全面的、概括的了解；通过野外实习来巩固《地球科学概论》地质学部分的课堂教学内容，来加深对课程有关内容的理解；在实习中学习象地质点定点和描述，罗盘和地形图的使用等地质工作最基本的野外工作方法；

认识基本的地质体和地质现象、学会描述这些地质体和地质现象、分析它们形成的地质作用过程、综合分析北京地区的地质作用过程、了解北京地区地质演化历史、编制简单的实习报告。通过实习培养同学们对大自然的热爱，陶冶情操，提高对地质科学研究的兴趣；同时使同学们充分认识到地质实践对于地质科学的重要性。

英文简介（Course Description）：

Introdution to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. It is usually taken in the summer following the freshmen year, after completion of An Outline of Earth Sciences. In this course, you will have the opportunity make an all-important transition from classroom theory to real-world understanding. You will begin to be able to acquire an understanding of the fundamentals of the science of geology by learning it and doing it, to evaluate how field data are used to construct the knowledge we have about the Earth and its long geologic history. This course is designed to acquaint you with generic field skills used in geology and related fields and apply these fundamental principles, which can be used in a wide variety of applications. You will learn how to develop skills in surveying and measurement, use outcrop observations and measurements to deduce regional interpretations, produce professional-quality geological stratigraphic sections, interpret geologic history from rock descriptions, geologic relationships, and measured sections, identify common rocks and minerals, read maps, recognize identify landforms, and geological processes and structures. Now that you can combine all of your knowledge and skills to investigate and interpret the geology of the West Hill of Beijing based on your own observations, and write a summary report interpreting the geologic history and significance of the erea. You can gain additional life skills, including critical-thinking, problem-solving, team-work, scientific writing, and professionalism. You may be get an appreciation for the complexity and beauty of the Earth as well as the human impact on her processes during the field practice. You will find your study of the science of geology to be stimulating and rewarding, fully understand the importance of geological field trips of Earth Sciences.

-End-

课程号（Course Number）： 01231641
课程名称（Course Title）：普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 黄宝春 教授 Professor

先修课程（Prerequisites）： 无

中文简介：

普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：

Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

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课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 许成 教授 Professor

先修课程（Prerequisites）： 无

中文简介：

普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：

Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more

attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

-End-

课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 王久源 助理教授

先修课程（Prerequisites）： 无

中文简介：
普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：
Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

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课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 吴辉 助理教授

先修课程（Prerequisites）： 无

中文简介：
普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

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Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

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课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 张志诚 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：
Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through

field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

-End-

课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 张元元 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：
Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

-End-

课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 张元元 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：
Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking, and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

-End-

课程号（Course Number）： 01231641
课程名称（Course Title）： 普通地质实习A讨论班/Seminar on field geology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 张元元 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
普通地质野外教学实习对地球与空间科学学院地质和地球化学专业一年级学生来说是一次地质启蒙教育，是一次重要的认识实习。除了老师的讲解和指导外，通过讨论课的形式，促使每位同学认真思考地质体和地质现象的地质作用过程，培养同学们独立思考的能力，努力使学生通过野外实习获得最好的学习和成长体验；不单纯强调知识和技能的传授，更加重视激励学生的好奇/自信/激情的内在发展动力与综合素质能力的培养。

英文简介（Course Description）：
Introduction to Field Geology is the basic experience in many undergraduate geology programs, and is recommended for freshmen of the School of Earth and Space Sciences, Peking University. Except for the teacher's explanation and guidance, through the form of discussion seminar, each student is urged to seriously think about the geological process of geological data, cultivate the students' ability of independent thinking,

and strive to make the students obtain the best learning and growth experience through field geology. It does not simply emphasize the knowledge and skills, but pays more attention to the internal development driving force of stimulating students' curiosity / confidence / passion and the cultivation of comprehensive quality and ability.

-End-

课程号（Course Number）： 01231912
课程名称(Course Title)：五台山地区综合地质实习/Geology Excursions in the Wutai Region
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 2
授课教师（Faculty）： 魏春景 教授 Professor，张进江 教授 Professor，张波 副教授 Associate Professor，张贵宾 教授 Professor

先修课程（Prerequisites）： 地球科学概论，普通岩石学，地球化学，构造地质学

中文简介：
五台山综合野外地质实习是在野外地质认知实习及相关专业课室内学习基础上，为训练学生野外地质考察的综合能力及在变质岩区进行岩石和构造研究能力而设置的。每年6月底到7月初在五台山－恒山地区工作1.5周。实习考察8条路线30个观测点。

英文简介（Course Description）：
The geology excursions in Wutai region is for the undergraduate students, who finished the field training after the "general geology" course. This course will focus on the basic training of geologic investigation, including various types of rocks and structure geology reconstruction, especially in the high grade metamorphic area. All students will stay at Wutai-Hengshan area for ten days, and go across 5 long cross-sections and examine about 30 stops.

-End-

课程号（Course Number）： 01231913
课程名称(Course Title)：沉积地层古生物综合实习/Geological Excursion on Sedimentology, Paleontology and Bisotratigraphy
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 2
授课教师（Faculty）： 薛进庄 副教授 Associate Professor，周敏 高级工程师 Senior Engineering

先修课程（Prerequisites）： 普通地质学、结晶矿物学、岩石学、古生物学、地史学等

中文简介：
本课程是在以前的综合地质实习（2020年以前在三峡地区、2020年以后在贵州地区）基础上建立的、为地质学专业学生学习沉积学、地层学和古生物学的野外实践性课程。开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能。

英文简介（Course Description）：
This is a practical course for students in majors of geology and geochemistryon sedimentology, plaeontology and biostratigraphy, including a 10-day field excursion to visit geological sections ranging from latest Protozoic to Triassic in South China and the geoparks.

-End-

课程号（Course Number）：01231914
课程名称（Course Title）：地球系统野外建模/Earth system investigation and modelling
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：3
授课教师（Faculty）：季建清 教授 Professor，周敏 高级工程师 Senior Engineering

先修课程（Prerequisites）：(1)非本专业的同学，完成大学本科基础学科和通识课程学习（无论是理工人文社科类）；（2）本专业的修课同学，完成地球系统科学，地球系统演化和部分地球科学课程学习。

中文简介：
“八千里路、云和月（科学旅行），八千里山川、冷暖和天地（地球系统）”。
课程围绕祁连山东段，用兰州中川-永登-乌稍岭-古浪-武威-金昌-焉支山-山丹-张掖-肃南-扁都口-峨堡-祁连-热水镇-青海湖-拉脊山-积水峡-临夏（和政）-刘家峡-河口古镇-兰州中川，总行程约4000千米闭环科学旅行来实现地球系统科学主题的野外教学。具体包括（1）古生代祁连洋和板块构造，（2）青藏高原东北缘及与蒙古高原的接壤，（3）季风与西风带分界和进退，（4）冰川、祁连山、河流、黄土和沙漠戈壁及其生态系统，（5）地球冷暖（新生代和第四纪）与河西走廊（丝绸之路）兴衰，（6）临夏（和政）生命庇护所和脊椎生物的盛衰密码，（7）黄河与文明，“中国”的缘起和演变记录，综合板块、高原、山脉、冰冻圈、河流、盆地、生命、地貌、全球变化和人类家园、文明文化，进而落实为地球系统科学的调查和探索实习实践中。
设计教学实习和实验实践路线12条，落实为36-40个主题，12个思考命题，包括野外生存、无人机摄像、地形制图、时间序列建造和地球系统制图等在内的10项技能训练。通过课程，修课同学一方面饱览祖国河山、西部风光和地球系统演变下的生命荣枯盛衰，还能够逐步健全地球系

统科学系统完整知识体系和培养开展调查探索能力。

英文简介（Course Description）：
In order to foster a greater understanding of Earth systems science we need to build an understanding of the whole Earth system, and to do that we have to increase our knowledge of the component parts and the ways in which these interact. So we need to know how the Earth works as a planet today and how some components of the systems have evolved over geological time in response to changes in others. We design a 4000-kilometer professional science travel, which covers the eastern Qilian mountain range including Lanzhou, Wuwei, Zhangye, Haibei district(Qilian), Qinghai Lake, Xining, Hainan District and Linxia(Hezheng).
There are 7 main aspects will be involved in the science trip with the overall aim being to produce a holistic approach to understanding the Earth system and to give insights into the complex planet on which we live. a-Oceanic crust and plate tectonics; b-Qingzang Plateau and Mengolia Plateau; c-Monsoon region and westerlies; d- Qilian Mountain range, Cryosphere, rivers, loess, desert, e-Cenozoic global Change (cooling and warming) and the Rise and fall of Hexi corridor; f- Life cradle in Hezhen basin and ecology; g-Huanghe Rivers and Chinese civilization, culture.
The whole course consists of 16 broad, socially relevant and multidisciplinary themes: plate, plateau, mountain, glacier, river, basin, climate, soils, hazards, life, landscape, global change, habitat for humanity, civilization, culture, regional economies and so on. 10 skills, such as field survival, UAV photography, Earth system mapping, time-series construction and analysis, will be brought in the course. A major issue is providing a sufficient depth of information for modelling while still covering a breadth that integrates the components of the system adequately. The aim is to give an understanding of how the world works, not only currently but throughout its history.

-End-

课程号（Course Number）：01231916
课程名称（Course Title）：五台山地区综合地质实习讨论班/Geology Excursions in the Wutai Region
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：魏春景 教授 Professor

先修课程（Prerequisites）：与矿物学，岩石学几构造地质学等相关课程

中文简介：
五台山综合野外地质实习讨论班包括实习讲座及野外实习期间的小班讨论课，是在野外地质认知实习及相关专业课室内学习基础上，为训练学生野外地质考察的综合能力及在变质岩区进行岩石和构造研究能力而设置的。每年6月底到7月初在五台山－恒山地区工作1.5周。实习考察8

条路线30个观测点。

英文简介（Course Description）：
Seminar during the geology excursions in Wutai region is for the undergraduate students, who finished the field training after the "general geology" course. This course will focus on the basic knowldge of the filed trip and discussion about the observation in the field. This seminar provide basic training of geologic investigation, including various types of rocks and structure geology reconstruction, especially in the high grade metamorphic area. All students will stay at Wutai-Hengshan area for ten days, and go across 5 long cross-sections and examine about 30 stops.

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课程号（Course Number）： 01231916
课程名称（Course Title）： 五台山地区综合地质实习讨论班/Geology Excursions in the Wutai Region
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 张进江 教授 Professor

先修课程（Prerequisites）： 与矿物学，岩石学几构造地质学等相关课程

中文简介：
五台山综合野外地质实习讨论班包括实习讲座及野外实习期间的小班讨论课，是在野外地质认知实习及相关专业课室内学习基础上，为训练学生野外地质考察的综合能力及在变质岩区进行岩石和构造研究能力而设置的。每年6月底到7月初在五台山－恒山地区工作1.5周。实习考察8条路线30个观测点。

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Seminar during the geology excursions in Wutai region is for the undergraduate students, who finished the field training after the "general geology" course. This course will focus on the basic knowldge of the filed trip and discussion about the observation in the field. This seminar provide basic training of geologic investigation, including various types of rocks and structure geology reconstruction, especially in the high grade metamorphic area. All students will stay at Wutai-Hengshan area for ten days, and go across 5 long cross-sections and examine about 30 stops.

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Region
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：张贵宾 教授 Professor

先修课程（Prerequisites）：与矿物学，岩石学几构造地质学等相关课程

中文简介：
五台山综合野外地质实习讨论班包括实习讲座及野外实习期间的小班讨论课，是在野外地质认知实习及相关专业课室内学习基础上，为训练学生野外地质考察的综合能力及在变质岩区进行岩石和构造研究能力而设置的。每年6月底到7月初在五台山－恒山地区工作1.5周。实习考察8条路线30个观测点。

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开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：李秋根 副教授 Associate Professor

先修课程（Prerequisites）：与矿物学，岩石学几构造地质学等相关课程

中文简介：
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学分（Credits）： 0
授课教师（Faculty）： 吕增 副教授 Associate Professor

先修课程（Prerequisites）： 与矿物学，岩石学几构造地质学等相关课程

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学分（Credits）： 0
授课教师（Faculty）： 王潮 助理教授

先修课程（Prerequisites）：与矿物学，岩石学几构造地质学等相关课程

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学分（Credits）： 0
授课教师（Faculty）：
先修课程（Prerequisites）： 与矿物学，岩石学几构造地质学等相关课程

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条路线30个观测点。

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学分（Credits）：0
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先修课程（Prerequisites）：与矿物学，岩石学几构造地质学等相关课程

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课程号（Course Number）：01231917
课程名称（Course Title）：沉积地层古生物综合地质实习讨论班/Seminar on Geological

Excursions on Sedimentology, Paleontology and Biostratigraphy
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：孙元林 教授 Professor

先修课程（Prerequisites）：普通地质学、结晶矿物学、岩石学、古生物学等

中文简介：
本课程是配合”沉积地层古生物综合实习“课程，为地质学专业学生学习沉积学、地层学和古生物学开设的讨论实践课程、开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能；了解地质历史上发生过的一些重大地质生物事件。

英文简介（Course Description）：
It is a seminar for practical course of ″Geological Excursions on Sedimentology, Paleontology and Biostratigraphy″ to for students in majors of geology and geochemistry to train their field work skill and expand their knownledge on sedimentology, plaeontology and biostratigraphy.

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课程号（Course Number）：01231917
课程名称（Course Title）：沉积地层古生物综合地质实习讨论班/Seminar on Geological Excursions on Sedimentology, Paleontology and Biostratigraphy
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：孙作玉 副教授 Associate Professor

先修课程（Prerequisites）：普通地质学、结晶矿物学、岩石学、古生物学等

中文简介：
本课程是配合”沉积地层古生物综合实习“课程，为地质学专业学生学习沉积学、地层学和古生物学开设的讨论实践课程、开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能；了解地质历史上发生过的一些重大地质生

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英文简介（Course Description）：
It is a seminar for practical course of "Geological Excursions on Sedimentology, Paleontology and Biostratigraphy" to for students in majors of geology and geochemistry to train their field work skill and expand their knownledge on sedimentology, plaeontology and biostratigraphy.

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课程号（Course Number）：01231917
课程名称（Course Title）：沉积地层古生物综合地质实习讨论班/Seminar on Geological Excursions on Sedimentology, Paleontology and Biostratigraphy
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：程丰 助理教授

先修课程（Prerequisites）：普通地质学、结晶矿物学、岩石学、古生物学等

中文简介：
本课程是配合”沉积地层古生物综合实习“课程，为地质学专业学生学习沉积学、地层学和古生物学开设的讨论实践课程、开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能；了解地质历史上发生过的一些重大地质生物事件。

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开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences

学分（Credits）：0
授课教师（Faculty）：李秋根 副教授 Associate Professor

先修课程（Prerequisites）：普通地质学、结晶矿物学、岩石学、古生物学等

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英文简介（Course Description）：
It is a seminar for practical course of "Geological Excursions on Sedimentology, Paleontology and Biostratigraphy" to for students in majors of geology and geochemistry to train their field work skill and expand their knownledge on sedimentology, plaeontology and biostratigraphy.

-End-

课程号（Course Number）： 01231917
课程名称（Course Title）： 沉积地层古生物综合地质实习讨论班/Seminar on Geological Excursions on Sedimentology, Paleontology and Biostratigraphy
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 李秋根 副教授 Associate Professor

先修课程（Prerequisites）： 普通地质学、结晶矿物学、岩石学、古生物学等

中文简介：
本课程是配合”沉积地层古生物综合实习“课程，为地质学专业学生学习沉积学、地层学和古生物学开设的讨论实践课程、开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能；了解地质历史上发生过的一些重大地质生物事件。

英文简介（Course Description）：
It is a seminar for practical course of "Geological Excursions on Sedimentology, Paleontology and Biostratigraphy" to for students in majors of geology and geochemistry to train their field work skill and expand their knownledge on sedimentology, plaeontology and biostratigraphy.

-End-

课程号（Course Number）： 01231917
课程名称（Course Title）： 沉积地层古生物综合地质实习讨论班/Seminar on Geological Excursions on Sedimentology, Paleontology and Biostratigraphy
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 李秋根 副教授 Associate Professor

先修课程（Prerequisites）：普通地质学、结晶矿物学、岩石学、古生物学等

中文简介：
本课程是配合”沉积地层古生物综合实习“课程，为地质学专业学生学习沉积学、地层学和古生物学开设的讨论实践课程、开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能；了解地质历史上发生过的一些重大地质生物事件。

英文简介（Course Description）：
It is a seminar for practical course of ″Geological Excursions on Sedimentology, Paleontology and Biostratigraphy″ to for students in majors of geology and geochemistry to train their field work skill and expand their knownledge on sedimentology, plaeontology and biostratigraphy.

-End-

课程号（Course Number）：01231917
课程名称（Course Title）：沉积地层古生物综合地质实习讨论班/Seminar on Geological Excursions on Sedimentology, Paleontology and Biostratigraphy
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：0
授课教师（Faculty）：李秋根 副教授 Associate Professor

先修课程（Prerequisites）：普通地质学、结晶矿物学、岩石学、古生物学等

中文简介：
本课程是配合”沉积地层古生物综合实习“课程，为地质学专业学生学习沉积学、地层学和古生物学开设的讨论实践课程、开设此课程的目的包括：1）通过实地地质剖面的观察，使学生能更好地通过理论联系实际的方式掌握所学的地质学基础知识；2）通过对若干条剖面的实地考察，让学生认识主要沉积岩石类型、沉积结构和构造，以及主要的生物化石类型，分析和判定沉积相的类型和地层剖面所展示的地层发育序列和变化，了解和认识华南扬子地块的地质发展演化历史；3）通过本课程的实践，让学生学习和了解沉积学、地层学和古生物学研究的野外基本工作方法，并锻炼和培养学生进行野外地质工作技能；了解地质历史上发生过的一些重大地质生物事件。

英文简介（Course Description）：
It is a seminar for practical course of ″Geological Excursions on Sedimentology, Paleontology and Biostratigraphy″ to for students in majors of geology and

geochemistry to train their field work skill and expand their knownledge on sedimentology, plaeontology and biostratigraphy.

-End-

课程号（Course Number）： 01231918
课程名称（Course Title）：地球系统野外建模讨论班/Seminar on Earth system investigation and modelling
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 江大勇 教授 Professor

先修课程（Prerequisites）： 地球科学概论等相关地球科学基础课程

中文简介：
课程围绕祁连山东段，用兰州中川-永登-乌稍岭-古浪-武威-金昌-焉支山-山丹-张掖-肃南-扁都口-峨堡-祁连-
热水镇-青海湖-拉脊山-积水峡-临夏（和政）-刘家峡-河口古镇-兰州中川，总行程约4000千米闭环科学旅行
来实现地球系统科学主题的野外教学配套的讨论班教学

英文简介（Course Description）：
We design a 4000-kilometer professional science travel, which covers the eastern Qilian mountain range including Lanzhou, Wuwei, Zhangye, Haibei district(Qilian), Qinghai Lake, Xining, Hainan District and Linxia(Hezheng). In order to foster a greater understanding of Earth systems science we need to build an understanding of the whole Earth system, and to do that
we have to increase our knowledge of the component parts and the ways in which these interact. So we need to know how the Earth works as a planet today and how some components of the systems have evolved over geological time in response to changes in others.

-End-

课程号（Course Number）： 01231918
课程名称（Course Title）：地球系统野外建模讨论班/Seminar on Earth system investigation and modelling
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 李文博 研究员 Research Fellow

先修课程（Prerequisites）： 地球科学概论等相关地球科学基础课程

中文简介：
课程围绕祁连山东段，用兰州中川-永登-乌稍岭-古浪-武威-金昌-焉支山-山丹-张掖-肃南-扁都口-峨堡-祁连-
热水镇-青海湖-拉脊山-积水峡-临夏（和政）-刘家峡-河口古镇-兰州中川，总行程约4000千米闭环科学旅行
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课程号（Course Number）： 01231918
课程名称（Course Title）： 地球系统野外建模讨论班/Seminar on Earth system investigation and modelling
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 何涛 副教授 Associate Professor

先修课程（Prerequisites）： 地球科学概论等相关地球科学基础课程

中文简介：
课程围绕祁连山东段，用兰州中川-永登-乌稍岭-古浪-武威-金昌-焉支山-山丹-张掖-肃南-扁都口-峨堡-祁连-
热水镇-青海湖-拉脊山-积水峡-临夏（和政）-刘家峡-河口古镇-兰州中川，总行程约4000千米闭环科学旅行
来实现地球系统科学主题的野外教学配套的讨论班教学

英文简介（Course Description）：
We design a 4000-kilometer professional science travel, which covers the eastern Qilian mountain range including Lanzhou, Wuwei, Zhangye, Haibei district(Qilian), Qinghai Lake, Xining, Hainan District and Linxia(Hezheng). In order to foster a greater understanding of Earth systems science we need to build an understanding of the whole Earth system, and to do that

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-End-

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课程名称（Course Title）： 地球系统野外建模讨论班/Seminar on Earth system investigation and modelling
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 0
授课教师（Faculty）： 季建清 教授 Professor

先修课程（Prerequisites）： 地球科学概论等相关地球科学基础课程

中文简介：
课程围绕祁连山东段，用兰州中川-永登-乌稍岭-古浪-武威-金昌-焉支山-山丹-张掖-肃南-扁都口-峨堡-祁连-
热水镇-青海湖-拉脊山-积水峡-临夏（和政）-刘家峡-河口古镇-兰州中川，总行程约4000千米闭环科学旅行
来实现地球系统科学主题的野外教学配套的讨论班教学

英文简介（Course Description）：
We design a 4000-kilometer professional science travel, which covers the eastern Qilian mountain range including Lanzhou, Wuwei, Zhangye, Haibei district(Qilian), Qinghai Lake, Xining, Hainan District and Linxia(Hezheng). In order to foster a greater understanding of Earth systems science we need to build an understanding of the whole Earth system, and to do that
we have to increase our knowledge of the component parts and the ways in which these interact. So we need to know how the Earth works as a planet today and how some components of the systems have evolved over geological time in response to changes in others.

-End-

课程号（Course Number）： 01233170
课程名称（Course Title）：地震概论/Introduction to Seismology
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 2
授课教师（Faculty）： 赵克常 教学副教授

先修课程（Prerequisites）： 无

中文简介：
本课程是为全校学生开设的素质教育通识课程，具有典型的自然科学课程的特征。它简明扼要地介绍了地震学的基本概念以及研究的方法，内容包括地震学史、地震仪原理与地震图、地震波的传播理论、地球内部结构、勘探地震学、地震预报、临震措施和地震学最新进展。通过本课程的学习， 提升学生的自然科学的素质，增强学生的抗震减灾意识以及提升学生的临震逃生能力。

英文简介（Course Description）：
As a general education course aimed at all the students at the campus for promoting quality-oriented education, Introduction to Seismology is characterized by its typical natural science features. The course provides a brief introduction to basic concepts and research methods of seismology, which covers Seismology history, seismograph principles and seismogram, seismic waves propagation theories, interior Earth structure, exploration seismology, earthquake prediction, imminent earthquake measures and recent advances in seismology. This course enables the students to promote their quality of natural science, enhance their awareness of earthquake resistance and disaster mitigation and improve their skills for imminent earthquake escape.

-End-

课程号（Course Number）：01233660
课程名称（Course Title）：地球物理野外实习/Geophysical Field Practice
开课院系（School/Department）：地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）：2
授课教师（Faculty）：李嘉琪 助理教授

先修课程（Prerequisites）：高等数学、普通物理、数学物理方程、地球介质力学、地震学、普通地质学

中文简介：
地球物理学是一门强烈依赖于观测资料的学科，通过对大量观测资料的分析，发现新现象、产生新理论，从
而不断发展。本课程的目的是：学生通过野外观测与资料处理的实际操作，加深对理论知识的理解，初步掌
握获取资料、处理资料，解释资料的能力，培养发现问题、解决问题的能力，为进一步在地球物理学及相关
领域开展科研工作奠定基础。主要内容包括：地表地质现象的考察；地球物理前沿处理技术学习；地震观测
台阵的设计及地震观测；地震观测资料处理和解释。

英文简介（Course Description）：

Geophysics strongly depends on observation data. Based on analysis of the observation data, finding new phenomena, producing new theories, then achieving continuous development.
The purpose of this course is that by field observation and data processing students deepen
their understanding of theoretical knowledge, primarily grasp the ability of data acquiring,
processing and explanation, strengthen their capability of finding and solving questions, which
are all needed for their future work. Main contents include geology survey, advanced technology
study, seismic array design, and seismic data processing and explanation.

-End-

课程号（Course Number）： 01235260
课程名称（Course Title）：3S野外综合实习/Practice on RS, GIS and GPS
开课院系（School/Department）： 地球与空间科学学院/School of Earth and Space Sciences
学分（Credits）： 1
授课教师（Faculty）： 李培军 教授 Professor，田原 副教授 Associate Professor，范闻捷 研究员 Research Fellow，任华忠 长聘副教授 ，郭庆华 教授 Professor

先修课程（Prerequisites）： 《地理信息系统概论》；《遥感概论》；《地球科学导论》

中文简介：
通过在典型区域的野外综合实习，使学生了解3S综合实践应用的基本方法，培养学生的实际动手能力，帮助其深入理解和掌握所学的理论知识：

走出校门，置身于大自然之中，实地验证课堂上所学的地图学、自然地理基础知识和3S基本理论的过程。

将遥感、地理信息系统和全球定位系统所学的各种方法和理论应用于实际工作中，加深对基本理论知识的理解。

掌握自然地理野外调查的基本技能，培养和锻炼学生的动手和独立工作能力。

掌握综合利用遥感、地理信息系统和全球定位系统进行区域野外调查和专题遥感解译工作的基本方法和技术。

英文简介（Course Description）：
This mandatory class provides an integral filed practice on GIS, RS, and GPS. The main contents of this class are data acquisition, route planning, filed exploration, RS image interpretation, GPS navigation, and land survey.The students are required to comprehensively apply what they have learnt in GIS, RS, and GPS classes in practice to fulfill all the tasks, which will improve their understandings and application abilities of the basic knowledge.

-End-

课程号（Course Number）：01533300
课程名称（Course Title）：城乡地域空间认知实习/Regional Science: Practice of Theories and Models
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：1
授课教师（Faculty）：阴劼 讲师 Lecturer

先修课程（Prerequisites）：无

中文简介：
城乡地域空间认知实习是五年制城市规划专业本科教学的必要环节，是专业评估考察的内容。本实习选取京津冀都市圈作为基地。在启动阶段，以天津市区及滨海新区、北京市、唐山市为主要基地开始系统性的实习教学。在条件成熟时，逐步扩展至石家庄、承德、张家口等城市，形成以京津唐为核心的京津冀都市圈实习基地。
（1）以京津冀都市圈为教学实习基地，能够充分体现“坚持以地理学为基础的、理工结合的规划教学科研体系”的城市规划专业办学特色，发挥我系在中国城市化、区域研究与规划、创新空间与创新群体、经济地理等城市规划领域的长项研究，通过连续的教学实习，可以达到教学相长的效果。
（2）京津冀环渤海城市群是中国目前已形成三大城市群之一，天津滨海新区作为全国综合配套改革试验区，起着探索新的区域发展模式、为全国发展改革提供经验和示范的作用。以此区域作为实习基地，有利于学生了解我国城市化进程中的最前沿问题。
（3）京津冀都市圈内的城市，在性质、规模、产业、历史、文化等方面各有特点，利于根据教学任务的调整组织实习路线。
（4）京津冀都市圈以北京为中心，远近适宜，交通发达，利于实习的开展。
近年来，我院的城市与区域规划系及城市与经济地理学系等承担了天津大港城市总体规划、土地利用总体规划等工作，也承担了京津冀都市圈其它城市的多项规划研究项目（如：北京市土地利用总体规划、河北迁安城乡一体化规划等）。同时，北京大学与天津签署了积极参与服务天津滨海新区建设的备忘录，为滨海新区的开发开放和可持续发展提供科技和智力支撑，使京津冀都市圈作为我院的实习基地有着良好的基础与前景。
我系已经与天津市规划院、天津经济技术开发区（泰达）就共建教学实习基地达成合作意向。

英文简介（Course Description）：
N/A

-End-

课程号（Course Number）：01535130

课程名称（Course Title）：野外生态学/Field Ecology
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师(Faculty)：朱彪 教授 Professor,唐志尧 教授 Professor,吉成均 研究员 Research Fellow

先修课程（Prerequisites）：植物学（下）
普通生态学1
普通生态学2

中文简介：
野外生态学生态学专业必修的野外实习课程，本课程以河北坝上北京大学生态系统观测站为基地，沿几个重要的地理因子（气候、植被、土壤）的梯度设计了多条线路，旨在通过讲授和实习相结合，培养学生观察野外生态现象，掌握野外调查方法以及提出科学问题的能力

在实习中，学生通过对八条实习路线上的不同地理、植被、土壤格局的观察和相关数据的获取，深入认识格局的特征及内在机制，提出科学问题和假说，并在条件允许的情况下对这些问题和假说进行回答和验证。在获取的数据的基础上，综合分析实习区的地理和生态现象。在这一过程中，学生需要综合运用知识和数据，对具有地区特色的问题进行思考和分析，并选择合适的题目撰写论文。

英文简介（Course Description）：
Field Ecology is designated to train students the skills of observing, measuring and recording ecological phenomena, and the ability of putting forward scientific questions. It is obligatory for students majoring in Ecology. The field course is based on the Peking University Saihanba Ecological Observatory in Hebei Province. Eight field routes are designed to following the gradients of four main determinants in this region: climate, vegetation, soil and human disturbance.
The students are required to record vegetation, soil data along the eight routes in groups, leading by the teacher and teaching assisstants. The field data are integrated for testing the hypothesis put forward in the field observations. Each student has to submit a final report in the form of academic paper with part of the field data and their knowledges in ecology.

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课程号（Course Number）：01537530
课程名称（Course Title）：普通地质实习/Field Practice of Physical Geology
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：1
授课教师（Faculty）：张家富 教授 Professor

先修课程（Prerequisites）：普通地质学

中文简介：
地球概论野外实习课是为环境学院本科生和研究生开设的野外实习课。要求选修本课程的学生上个学年（近期）选修过“地球概论”或“普通地质学”。“地球概论”课是为北京大学地理、环境等非地质专业本科生开设的有关地球科学，特别是关于地壳的组成、构造和演化知识的基础课，课程由三部分核心内容构成：（一）地壳的物质组成，讲述矿物和岩石学基本内容，认识重要的常见矿物和岩石；（二）地壳的地质构造，介绍有关地质构造和大地构造的基本知识，重点学习褶皱构造、断层构造，以及板块构造学说；（三）地壳演化简史。

英文简介（Course Description）：
Field practice of Earth Sciences

-End-

课程号（Course Number）：01539340
课程名称（Course Title）：地貌实习/Field Practice of Geomorphology
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师（Faculty）：张家富 教授 Professor，刘耕年 教授 Professor，李有利 教授 Professor，刘建宝 教授 Professor

先修课程（Prerequisites）：地貌学

中文简介：
实习地区主要包括山西大同盆地、河北秦皇岛地区。大同盆地是我国地貌类型丰富（包括山地、平原、河流、火山、冲积扇、各种黄土地貌和新构造活动形迹及地貌，丰富的新生代沉积类型和良好的露头剖面）、丰富的历史人文景观，同时是我国重要的能源化工基地而又地处我国的生态脆弱地带，具有长期的地貌学研究历史和良好的研究基础，因而是我国最理想的地貌学教学实习地区。秦皇岛地区拥有十分齐全和典型的海岸地貌组合以及典型的滨海平原和具有特色的基岩山地地貌，而且是我国十分重要的港口城市和最重要的海滨旅游城市。两个地区包括了属于地貌学研究对象的大部分地貌类型和地貌过程。通过本次实习课程的学习，学生在教师指导下，系统学习和掌握地貌学野外研究的基本方法。包括如何围绕研究目的，收集和相关文献，制定野外考察和研究方案；针对各种宏观和微观的地貌现象，如何观察、测量、分析、研究、描述和记录；资料整理、分析研究、图表绘制、研究报告撰写等。通过实习，还可以对自然地理、经济地理、历史与人文地理、风景旅游、资源开发与环境保护等问题获得较多的感性认识。

英文简介（Course Description）：
The areas for the field training included Datong Basin in Shanxi Province and Qinhuangdao City in Hebei Province. In Datong Basin there are many types of landforms such as maintains, plain, rivers, alluvial fans, and different types of typical loess landforms.

There are also lots of phenomena of neotectonic movements and neoteconic landforms, such as fault scarps, fault grabens or horsts, volcano cones, basaltic lava plateforms or ridges. And there are also many different types of Cenozoic sediments and many good geologic outcrop sections. There are also very rich in historic and cultural scenic spots. The region is one of the most important energy sources and chemical industry of China though it is an ecologically fragile region. The region of Qinhuangdao City is a coastal region, which included almost all types of coastal landforms, typical coastal plain and unusual beautiful mountains. Qinhuangdao City is one of the most important tourist city as well as a famous historical cultural city and an important modern seaport. The two regions included most types of landforms and geomorphologic processes and evolutionary history. There is a long history of geomorphological and Quaternary and geographical research on the regions. So the regions are very idea for field training in geomorphology.

In the training course the students will systematically learn the field research methods of geomorphology, which include how to collect relevant literature materials, maps and other information, draw up a plan for the field investigation and research program, how to observe, measure, analyze, research, descript and to record the results, how to analyze the materials, draw maps and diagrams, and to write the research report of the regions based on the research purpose and under the guidance of teachers. From the training course the students can also get some perceptual knowledge of physical geography, economic geography, historical and cultural geography, scenery and tourist geography, resource exploitation, environmental and ecological sciences.

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课程号（Course Number）： 01630078
课程名称（Course Title）：性格分析与电影/Character analysis and film
开课院系(School/Department)：心理与认知科学学院/School of Psychological and Cognitive Sciences
学分（Credits）： 2
授课教师（Faculty）： 钟杰 副教授 Associate Professor

先修课程（Prerequisites）： 普通心理学或心理学概论

中文简介：
精神分析的理论与技术不仅应用于临床心理学中的研究与心理治疗过程，也对电影艺术领域有极大的影响。《性格分析与电影》这门课程旨在介绍精神分析理论中的性格分析原理，并结合被心理临床实践检验过的有关理论和电影剧本实例，探讨电影中的人物刻画的科学性规律。本课程不仅可以提高学生对电影的鉴赏能力，更重要的是提升对人类性格的兴趣与科学认识，更好的理解人性与我们的人生。

英文简介（Course Description）：

The theories and technologies of psychoanalysis are not only applied in the research and psychotherapy of clinical psychology, but also has a great impact on the field of film art. The course psychoanalysis and film characterization aims to introduce the principle of character analysis in psychoanalysis theory, and explore the scientific law of characterization in movies by combining relevant theories tested by psychological clinical practice and movie script examples. This course can not only improve students' ability to appreciate movies, but also enhance their interest in human characters and its scientific understanding, so as to better understand human nature and our lives.

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课程号（Course Number）： 01630716
课程名称（Course Title）：医学心理学/Medical psychology
开课院系(School/Department)：心理与认知科学学院/School of Psychological and Cognitive Sciences
学分（Credits）： 2
授课教师（Faculty）： 杨炯炯 副教授 Associate Professor

先修课程（Prerequisites）： 普通心理学、实验心理学、（变态心理学修过最好）

中文简介：
在这门课中，将从心理学在医学实践中的应用的角度，讲授绪论、研究方法、心理评估与测量、心理应激、心身疾病、异常心理、健康心理、病人心理、护理心理、医患关系、心理干预、神经心理康复等方面，使学生了解心理学在疾病发病、发展和预后中的重要作用，培养心身统一观，掌握基本的心身疾病和心理健康知识，将心理学的知识应用于医学实践中。

英文简介（Course Description）：
In this lecture, I will focus on the application of psychology in medical sciences. The chapters include introduction, methodology, psychological assessment, mental stress, psychosomatic disorder, mental disorder, health psychology, mental health for patients, mental health for nursing, relationship between doctors and patients, mental intervention, neuropsychological rehabilitation, and so on. By this lecture, students will learn the importance of psychology in medical sciences, and are familiar with basic knowledge of psychosomatic disorders and mental health.

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课程号（Course Number）： 01630746
课程名称（Course Title）：发展认知神经科学/Developmental Cognitive Neuroscience
开课院系（School/Department）： 教务部
学分（Credits）： 3

授课教师（Faculty）：解万泽 助理教授

先修课程（Prerequisites）：无

中文简介：
发展认知神经科学是近年来广受关注的交叉学科。《发展认知神经科学》这门课程将帮助心理学、神经科学等相关专业的学生更好地了解大脑与认知功能发展的特点，以及基因和经验在脑与认知发展过程中扮演的重要角色。本课程的内容将涵盖与社会、认知、情绪发展相关的重要理论及科学问题，并聚焦于神经科学如何帮助我们解答脑与认知发展相关的理论及应用问题。本门课教授的主题包括但不限于：脑发育的理论与机制；发展认知神经科学常用的研究方法；重要认知功能，如注意、语言、记忆以及视觉等发展的神经机制；以及如何利用神经科学的手段对儿童精神病例的预后进行预测。
本课程对学生的基本要求是：了解发展认知神经科学中的前沿理论，明白大脑及重要认知功能发展的规律及机制，掌握常用的神经科学手段的原理与使用方法，包括实验设计及数据分析等。

英文简介（Course Description）：
This course explores the fascinating and complex puzzle – the developing brain, as well as how genes and experience interactively contribute to brain development and shape who we are. In this course, we will explore the central concepts of social, cognitive, and emotional development with an emphasis on the role that neuroscience can play in raising and answering theoretical and applied developmental questions, including but is not limited to the following: How does the brain structure develop from childhood to early adulthood? What are the neuroscience tools that researchers use to study the brain in children? What are the neural mechanisms underlying the development of various cognitive functions, such as attention, language, memory, and face perception? Can neuroscience help us to determine who will develop psychopathology? This course will cover development from infancy through adolescence. We will discuss theoretical and empirical work that encompasses both typical and atypical development and emphasizes a translational approach between basic developmental science and clinical applications. The intention is to (a) lay a foundation for the students to comprehend and conduct research in brain and cognitive development and (b) introduce the students to different neuroscience perspectives and approaches used to study development.

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课程号（Course Number）：01630751
课程名称（Course Title）：精神分析发展史/The History of Psychoanalysis
开课院系(School/Department)：心理与认知科学学院/School of Psychological and Cognitive Sciences
学分（Credits）：2
授课教师（Faculty）：钟杰 副教授 Associate Professor

先修课程（Prerequisites）： 无

中文简介：
《精神分析发展史》通过对精神分析理论发展的历史，帮助同学们理解人类对“自我”的认识历史。本课程将重点帮助学生对人类探索自我的历史过程进行梳理，激发学生的好奇心，通过以下理论的学习，深入理解人类认识自我过程中的发展的重点学派、流派和方法学差异，梳理处人类认识自我的理论发展的科学脉络和线索。本课程将对以下精神分析的核心流派进行学习：1）古典精神分析学派；2）自我心理学派（包括中间学派）；3）客体关系学派；4）自体心理学派。已经近年来这个学术领域的重要进展。

英文简介（Course Description）：
"The History of Psychoanalysis" is a history of the development of psychoanalytic theory to help students understand the history of human understanding of the "self". This course will focus on helping students sort out the historical process of human self-discovery, stimulate students' curiosity, deeply understand the key schools, schools and methodological differences in the development of human self-understanding through the study of the following theories, and sort out the scientific context and clues of the theoretical development of human self-understanding. This course will examine the following core schools of psychoanalysis: 1) the classical school of psychoanalysis; 2) the school of Ego-psychology; 3) the object relational school; 4) self psychology. There have been important developments in this academic field in recent years.

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课程号（Course Number）： 01831990
课程名称（Course Title）：跨文化交流学/Inter-cultural Communication
开课院系（School/Department）： 新闻与传播学院/School of Journalism and Communication
学分（Credits）： 2
授课教师（Faculty）： 许静 教授 Professor，李臻怡(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
当今在“地球村”中，人们生活在跨文化交流日益频繁的社会环境里。跨文化的知识和能力是21世纪大学教育，特别是素质教育的内容之一。

本课的目的是：使选课者掌握“跨文化交流学”(Intercultural Communication)这一传播学分支的基本概念和基本理论，增加中外跨文化交流知识，提高跨文化交流技能，建立跨文化交流意识，培养分析和解决跨文化交流问题能力。

英文简介（Course Description）：
In today's “Global Villege”, people are experiencing more frequent interaction across cultures. Knowledge and competence in intercultural communication are essential for

21st century university education, in particular as part of overall character development for the students.

The objective of this course is to equip the students with basic concepts and theories of Intercultural Communication as a branch of communication studies with enhanced knowledge, competence, and awareness, as well as analysis skills to resolve intercultural challenges.

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课程号（Course Number）：01832150
课程名称（Course Title）：媒体与国际关系/Media and International Relations
开课院系（School/Department）：新闻与传播学院/School of Journalism and Communication
学分（Credits）：2
授课教师（Faculty）：陈开和 教授 Professor

先修课程（Prerequisites）：不要求先修课程，但选课同学需阅读并熟悉现当代国际关系历史，并具有较好的英语阅读能力。

中文简介：
本课程将结合具体案例，帮助选课学生熟悉有关“媒体与国际关系”的主要理论视角，媒体在不同国际关系形态中发挥作用的主要方式，以及媒体在我国对外关系中的影响。

英文简介（Course Description）：
This course will familiarize students with the basic theoretical perspectives in the field of Media and International Relations. It will also introduce the roles that media play in major international relations formats like war, diplomacy and international public relations. In the final part, the course will discuss the relationship between media and China`s foreign relations.

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课程号（Course Number）：01833970
课程名称（Course Title）：影视文化与批评/Cultural Critique in Film and Television
开课院系（School/Department）：新闻与传播学院/School of Journalism and Communication
学分（Credits）：2
授课教师（Faculty）：张慧瑜 长聘副教授

先修课程（Prerequisites）：无

中文简介：

本课程全面系统地教授影视文化与批评的理论及方法，结合中外电影史、电视史的案例，展现不同批评理论的脉络和实践方式，增强学生从影视理论的角度来研究影视文化现象，掌握影视批评的基本方法，学会写作影视批评文章。

英文简介（Course Description）：
This course is about theories and methodoliogies of film and television studies, combines Chinese film history , foreign film history and TV history together to show different ways of critics, helps students to research film and television culture in a theoretical perspective and write film critical articles.

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课程号（Course Number）： 01834180
课程名称(Course Title):全球传播的新闻叙事及想象/Global Journalism in a World of Crisis
开课院系（School/Department）： 新闻与传播学院/School of Journalism and Communication
学分（Credits）： 2
授课教师（Faculty）： 吴靖 教授 Professor，张展(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
本课旨在跟进学生对国际新闻的认识，从策略叙事的角度解析新近发生的对地区或世界形势发展，以及全球新闻业产生较大影响的代表性案例，并探讨国内媒体对外传播中尚存的不足。希望本课可以激发学生的全球新闻想象，并形成学生对新媒体环境下国际新闻演变发展的批判思维，以及对中国媒体叙事策略的反观。

英文简介（Course Description）：
This class seeks to deepen students' understanding of narrative analysis, especially strategic narratives in the studies of international news and stimulates students imagi-nation of the Global Journalism. It focuses on the most critical cases that recently emerged and have significantly impacted the evolution of global journalism as well as China's (mediated) engagement with the world media environment.

The class is composed by four main parts:
Part I. Theoretic Understanding of Narratives in International News and Its De-velopment
This part provides a basic theoretic understanding of media narratives, strategic narra-tives, international news, and the importance of narrative analysis in media and com-munication studies. Responding to the changing news industry that is shaped by the development of digital media ecology, elements such as connectivity, interactivity, re-contextualization of media content, and the complex web of intercultural dynamics are taken into consideration to observe the new Web 2.0 storytelling.
Part II. Emerging Cases of the world of Crisis and the development in narratives

This part will discuss how the news narratives were developed into shaping this world filled with crisis. Emerging critical cases will include: Europe-China Relation after the Eurozone debt Crisis(2009-2014); Brexit and its impact on China(2015); Trump's Greater America and his full—range mediated Campaign(2016); and China's One Belt One Road Initiatives (2014-2017)

Part III. New Trends in Global Journalism: Crisis of Journalism or Challenges?

This part will introduce some of the most trendy phenomenons (e.g. data journalism, networked journalism, fake news) recently leaded the move of the global news indus-try in response to the development of the new media technology and the spread of so-cial network platforms. The discussion will not center "journalism" as business to dis-close the so-called "crisis", but center "journalism" as production of reliable infor-mation and analysis, that we just arrived at its golden time.

Part IV. Where and How is China's Voice?

This part will focus on the performance of Chinese media going out and whether the development of its strategic narratives fit or not yet fit into the global media environ-ment. The current limits of Chinese media narratives of going abroad, and the future improvement that should be learned and prepared for a better narrative version of China's stories will be inspired.

Given the significant challenges facing the World— America (e.g. uncertainties after Trump's presidency, anti-globalization movement); Europe (e.g., the potential for EU disintegration, the refugee crisis, and right-wing political movements) and China (the slowing growth in the economy, the looming environmental sustainability crisis, and the challenges to China's public diplomacy), this class unfolds at an especially im-portant time when protectionism, populism and anti-globalization are on the rise, and China's international role is winning more significance in face of the changing power structures of the global economy and political order. Students will be guided to look at these cases of emerging crisis through the lens of narrative analysis, and guided to un-derstand the challenges posed by new technologies for future news making. The pro-duction of news has already became a never-ending process and web of creating in-formation and fact-checking, we are all in such process and web now as different nodes in creating, transmitting, updating, or recreating narratives about ourselves and the world.

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课程号（Course Number）： 01834300
课程名称（Course Title）：媒体与中国社会/Media and Society in China
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 陈开和 教授 Professor

先修课程（Prerequisites）：不要求先修课程。选课同学事先对中国现当代历史应有所了解。

中文简介：
本课程将帮助学生学习和了解中国（包含中国大陆以及香港、台湾等地区）新闻与传播事业的总体情况，以及中国新闻传播政策的演变过程及相关影响因素。此外，课程将分析中国各类媒体（包括印刷媒体、电子媒体以及新兴的网络媒体等）的发展过程及其与中国社会的互动关系，同时探讨中国媒体在海外的影响力，以及海外媒体在中国的情况及对中国社会的影响。课程讲授方式包括教师讲授、以及相关的小组讨论/参观考察等。

英文简介（Course Description）：
This course offers a general overview of journalism and communications in China, with a focus on the Mainland China. Media in other parts of Greater China, including Hong Kong and Taiwan will also be addressed. It will analyze the features, developments and impact of various media: print, TV, radio, online media, and social media like Weibo and Wechat. Based on an understanding of the development and current media landscape, the course will take a comparative look into the role of the media in Chinese society. It will also look at how China is perceived in and outside China through the prism of the media, as well as how the outside world is covered by Chinese correspondents.

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课程号（Course Number）：01834348
课程名称（Course Title）：健康传播研究：理论与方法/Health Communication Research: theories and Methodologies
开课院系（School/Department）：新闻与传播学院/School of Journalism and Communication
学分（Credits）：1
授课教师（Faculty）：许静 教授 Professor

先修课程（Prerequisites）：无

中文简介：
健康传播作为传播学的一大分支，兴起于上世纪80年代的美国。经过40多年的发展，健康传播已经形成相对较多的研究成果和一定的理论方法。相比之下，国内的健康传播研究起步较晚。2016年，在韩启德院士的倡导下，北京大学与北大医学部创办了国内第一个健康传播专业硕士项目，在致力于跨学科的实践创新型人才培养的同时，也致力于吸收新理论和新方法，构建合理的知识体系，为研究型人才的培养创造条件。
本课程邀请海内外学者，以专题讲座的形式，着重介绍健康传播研究中较具前沿性和代表性的理论和方法，以促进中外学术交流，推动相关研究。

英文简介（Course Description）：
As a major branch of communication studies, health communication emerged in the United States in the 1980s. After more than 40 years of development, health communication has

formed a relatively large number of research results and certain theoretical methods. In comparison, domestic health communication research started relatively late. In 2016, under the advocacy of Academician Qide Han, Peking University and Peking University Health Science Center established the first master's program in health communication in China. While committed to cultivating interdisciplinary, practical, and innovative talents, it also aims to absorb new theories and methods, build a reasonable knowledge system, and create conditions for the cultivation of research talents.
This course invites scholars from home and abroad to focus on the introduction of cutting-edge and representative theories and methods in health communication research through thematic lectures, in order to promote academic exchanges between China and foreign countries and advance related research.

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课程号（Course Number）：01834349
课程名称(Course Title):人工智能生成内容实务(AIGC)/Artificial Intelligence Generated Content
开课院系（School/Department）：新闻与传播学院/School of Journalism and Communication
学分（Credits）：2
授课教师（Faculty）：严富昌 高级工程师 Senior Engineering

先修课程（Prerequisites）：无

中文简介：
使学生通过本课的学习，能够知晓AIGC的类型、特点和优势，了解AIGC产业的技术特征和发展趋势；能够掌握基于Stable Diffusion的ComfyUI环境的部署、配置和调试，学会ComfyUI模型、节点和插件的安装与设置，并通过其创作基本的工作流；能够熟练掌握文生文、文生图以及图生图等标准工作流的制作和使用；熟悉通过LoRA微调模型、ControlNet过程控制、IPAdapter风格引用以及InstantID角色学习等节点继承、引用和控制图像的生成和输出；知晓AnimateDiff动画生成工作流和SVD视频生成工作流的使用，并掌握大语言模型和文本生成语音在工作流中的调用。让学生具备综合运用不同类型和作用的节点创作工作流的能力，解决实际问题，为未来从事影视传媒等相关行业，进行内容生产和创作，积累相关知识、技巧和实践经验。

英文简介（Course Description）：
Through the study of this lesson, students will be able to understand the types, characteristics, and advantages of AIGC, as well as the technical features and development trends of the AIGC industry;Be able to master the deployment, configuration, and debugging of the ComfyUI environment based on Stable Diffusion, learn the installation and setup of ComfyUI models, nodes, and plugins, and create basic workflows through them;Be able to master the production and use of standard workflows such as text-to-text, text-to-image, and image-to-image;Be familiar with the generation and output of images through node inheritance, reference, and control using LoRA fine-tuning

models, ControlNet process control, IPAdapter style references, and InstantID role learning;Knowledge of the use of AnimateDiff animation generation workflow and SVD video generation workflow, and master the use of large language models and text generation speech in workflows.To equip students with the ability to comprehensively use different types and functions of nodes to create workflows, solve practical problems, and accumulate relevant knowledge, skills, and practical experience for future content production and creation in related industries such as film and television media.

-End-

课程号（Course Number）： 02036010
课程名称（Course Title）： 民俗学专题/ The Forms of Folklore
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 程梦稷 助理教授

先修课程（Prerequisites）： 无。

中文简介：
本课程探讨民俗学中的基础概念和分类，在涵盖口头、物质及行为等民俗学主要类别的基础上，以中国民间文学为中心，在每一类别中，将深入研究叙事（神话、传说、民间故事）和诗歌形式（民歌、史诗、叙事歌谣）等子类型。通过案例分析、课堂汇报以及实地考察，学生将基本掌握民俗学的主要知识，为民俗学与民间文学研究提供一个生动的入门途径。

英文简介（Course Description）：
This course explores the foundational concepts and categories in folklore studies, with a particular focus on traditional Chinese folk culture. Topics include the three primary categories of folklore: verbal folklore (folk literature), material folklore, and customary folklore. Within these categories, we will examine subtypes such as narratives (myths, legends, folktales) and poetic forms (songs, epics, ballads). Through case studies, interactive classroom discussions, and field trips, students will gain both a theoretical understanding of folklore studies and firsthand exposure to Chinese folk culture. This course seeks to balance academic rigor with cultural enrichment, providing an engaging introduction to both folklore studies and Chinese heritage.

-End-

课程号（Course Number）： 02230021
课程名称（Course Title）：三星堆与川蜀历史文化/Sanxingdui and Sichuan History and Culture
开课院系（School/Department）： 考古文博学院/School of Archaeology and Museology

学分（Credits）：1
授课教师（Faculty）：赵昊 预聘副教授

先修课程（Prerequisites）：无

中文简介：
在中华文明多元一体结构形成与发展的过程中，四川盆地是一个既相对孤立，又与其它地区存在不同程度交流的独特地区。相对于汉代以后四川盆地的历史而言，先秦时期这一地区的早期人类活动和文明化进程一直以来相对模糊。在近几十年的考古工作中，有关古蜀文明的重要考古发现和研究成果不断涌现，极大的提升了学术界和社会公众对于川蜀历史的直接认识。本课程将通过带领学生深入考古现场、博物馆和研究机构，直观的了解和接触有关古蜀文明考古的重要成果。重点参观对象将包括从新石器时代至战国时期以成都平原为中心的宝墩、三星堆、金沙、都江堰等多处重要遗址和博物馆，系统性的了解自约公元前5000-公元前300年古蜀地区的文化演进过程、各时期社会结构特征、以及与四川盆地以外地区文化交流的表现。

英文简介（Course Description）：
In the process of the formation and development of the pluralistic and integrated structure of Chinese civilization, the Sichuan Basin is a unique region that is not only relatively isolated, but also has different degrees of exchanges with other regions. Compared with the history of the Sichuan Basin after the Han Dynasty, the early human activities and civilization process in this area in the pre-Qin period have been relatively vague. In recent decades, important archaeological discoveries and research results related to the ancient Shu civilization have emerged, which have greatly enhanced the direct understanding of the history of Sichuan and Shu by the academic community and the public. This course will lead students to go deep into archaeological sites, museums and research institutions to intuitively understand and get in touch with the important achievements of archaeology related to the ancient Shu civilization. The key objects of the visit will include a number of important sites and museums from the Neolithic Age to the Warring States Period, such as Baodun, Sanxingdui, Jinsha and Dujiangyan, centered on the Chengdu Plain, to systematically understand the cultural evolution process of the ancient Shu region from about 5000 BC to 300 BC, the characteristics of the social structure of each period, and the performance of cultural exchanges with regions outside the Sichuan Basin.

-End-

课程号（Course Number）：02230563
课程名称（Course Title）：考古学研究专题/Advanced Topics in Archaeological Research
开课院系（School/Department）：考古文博学院/School of Archaeology and Museology
学分（Credits）：1
授课教师（Faculty）：邓振华 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
《考古学研究专题》是一门主要面向高年级本科生开设的进阶课程，旨在对考古学不同研究领域的前沿问题与方法进行系统性介绍与讨论。课程内容具有较强的专题性与开放性，每次开课将结合学生的学习需求以及当前学术研究的发展动态，确定具体主题，以引导学生深入理解相关领域的理论框架与研究方法，并提升其独立思考与学术分析能力。

本次课程以“陶器研究与阐释”为主题，围绕考古陶器的技术分析、生产组织、流通模式及使用与废弃等关键问题展开，综合传统类型学方法与材料科学手段，探讨陶器在古代社会中的功能与意义。通过系统学习与专题讨论，帮助学生理解器物研究在考古学中的核心地位，并将其与更广泛的社会文化问题相联系。

英文简介（Course Description）：
Advanced Topics in Archaeological Research is an advanced course designed for senior undergraduate students, aiming to provide a systematic introduction to and discussion of current issues and methodologies across different fields of archaeology. The course is characterized by its thematic focus and flexibility: specific topics are determined for each offering in response to students’ academic needs and developments at the forefront of research. Through this structure, the course seeks to guide students toward a deeper understanding of relevant theoretical frameworks and research approaches, while also enhancing their capacity for independent thinking and scholarly analysis.

The present course is devoted to Ceramic Studies and Interpretation, focusing on key issues in the study of archaeological pottery, including technological analysis, organization of production, circulation patterns, and use and disposal. By integrating traditional typological approaches with methods drawn from materials science, the course explores the functions and meanings of ceramics in past societies. Through systematic study and thematic discussion, it aims to highlight the central role of artefact studies in archaeology and to situate ceramic research within broader socio-cultural questions.

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课程号（Course Number）： 02316320
课程名称（Course Title）：元伦理学导论/Introduction to Metaethics
开课院系（School/Department）： 哲学系/Department of Philosophy
学分（Credits）： 2
授课教师（Faculty）： 赵新侃 助理教授

先修课程（Prerequisites）： 无

中文简介：
本课程概要地介绍元伦理学的基本理论，并精读一部当代有影响力的该领域著作，以兼顾广度和深度。

英文简介（Course Description）：
This course introduces the basic theories in metaethics, and guides the students through one contemporary classics, so as to ensure both width and depth of the engagement.

-End-

课程号（Course Number）：02334141
课程名称（Course Title）：科学哲学前沿/Summer School on Philosophy of Science
开课院系（School/Department）：哲学系/Department of Philosophy
学分（Credits）：2
授课教师（Faculty）：陆俏颖 长聘副教授 ，Matthew Sims(校外) 待定 ，Nicholas J. Teh(校外) 待定

先修课程(Prerequisites)：No Prerequisite. Open to any undergraduate student interested in the philosophy of science.

中文简介：
这门课程提供了对物理学和生物学哲学基础的跨学科探索，旨在阐明它们的概念框架和方法论。通过整合物理学哲学和生物学哲学的见解，学生将深入了解这些科学领域内的基本问题、假设和争论。
课程的第一周将探讨物理学哲学，审视空间、时间、因果关系和物理定律等基础概念。学生将批判性地分析量子力学、相对论和热力学等理论对我们对现实、决定论和科学知识界限的理解的影响。
第二周的焦点将转向生物学哲学，学生将探索生命的本质、演化、复杂性以及在生物系统中目的论的作用。主题可能包括物种的定义、自然选择机制、基因与性状之间的关系，以及遗传学发展的哲学意义。
整个课程将关注物理学和生物学之间的交叉点，包括对涌现、还原主义和科学统一性的讨论。学生将培养批判性思维能力，并对物理学和生物学的哲学基础有着细致的理解。他们将能够对科学理论进行批判性评估，阐明自己的哲学立场，并欣赏不同科学学科之间的相互联系。

英文简介（Course Description）：
This course offers an interdisciplinary exploration of the philosophical underpinnings of both physics and biology, aiming to elucidate their conceptual frameworks, methodologies, and implications. By integrating insights from the philosophy of physics and the philosophy of biology, students will gain a deep understanding of the fundamental questions, assumptions, and debates within these sciences.
The first week of the course delves into the philosophy of physics, examining foundational concepts such as space, time, causality, and the nature of physical laws.

Students will critically analyze the implications of theories such as quantum mechanics, relativity, and thermodynamics on our understanding of reality, determinism, and the limits of scientific knowledge.
In the second week, the focus shifts to the philosophy of biology, where students will explore the nature of life, evolution, complexity, and the role of teleology in biological systems. Topics may include the nature of species, the mechanisms of natural selection, the relationship between genes and traits, and the philosophical implications of developments in genetics and synthetic biology.
Throughout the course, attention will be given to the intersections between physics and biology, including discussions on emergence, reductionism, and the unity of science. Students will have developed critical thinking skills and a nuanced understanding of the philosophical foundations of both physics and biology. They will be equipped to critically evaluate scientific theories, articulate their own philosophical positions, and appreciate the interconnectedness of different scientific disciplines.

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课程号（Course Number）： 02335200
课程名称（Course Title）：庄子哲学/Philosophy of Zhuang Zi
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 郑开 教授 Professor

先修课程（Prerequisites）：

中文简介：
庄子是中国哲学史上最有特色的人物之一。其独特的关于人生和世界的思考，以及生活方式的选择，在中国历史上留下了浓墨重彩的一笔。本课程以庄子内七篇为主，将系统介绍庄子以生命为中心的哲学思考，其中包括对世界、权力、财富、功名等的理解。在讲授的过程中，希望借助于庄子和儒家对比的方式，展现两种不同的生命形象。

英文简介（Course Description）：
Zhuangzi is one of the most distinctive figures in history of Chinese philosophy. His special meditation on life, world, and choice on lifestyle, has produced a deep and long-reaching influence on Chinese history. This course will focus on the inner chapter of zhuangzi, and attempts to introduce the philosophical thoughts centering on life systematically, including the understanding of world, power, wealth and fame. During the course, I hope to show you two kinds of different life forms by means of comparing Zhuangzi and Confucianism..

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课程号（Course Number）： 02431420
课程名称（Course Title）：俄罗斯政治与外交/Politics and Foreign Affairs of Russia
开课院系（School/Department）： 国际关系学院/School of International Studies
学分（Credits）： 3
授课教师（Faculty）： 关贵海 副教授 Associate Professor
先修课程（Prerequisites）： 国际关系史，中国外交史

中文简介：
本课程是一门既研究国际政治、又研究俄罗斯历史与现实的综合性课程。它以俄罗斯国家发展的历史变迁为主线，以政治为主要内容，兼及经济、外交、文化。学习这门课，要求以当前俄罗斯现实问题为出发点，以科学的方法论为指导，把理论和实际、历史与现状结合起来，把俄罗斯社会发展与世界发展的趋势和规律联系起来。

英文简介（Course Description）：
The Lecture gives a historical review on russian past and present and makes a panorama of russian domestic and foreign policy developments.

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课程号（Course Number）： 02432090
课程名称（Course Title）：本土视野下的中国外交与国际事务/Chinese Perspective on International and Global Affairs
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 陈长伟 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
本课程将在本土视野之下介绍中国外交与国际事务的互动关系，分析中国如何通过全面参与国际和全球事务为国内经济与社会发展营造有利的外部环境，以及该过程如何影响了中国自身的政治和外交行为。本课程分导论、主体和结论三部分。导论部分将介绍中国外交与国际事务研究的主要学习方法，主体部分讨论当代中国对外关系的主要理论与现实问题，包括中国对外关系的历史背景、民族主义和公众舆论对中国对外政策的影响、中国对外政策的决策机制、主要决策者及其风格分析、中国和全球治理、中国和世界经济、中国的软实力建设和公共外交、中国的周边外交战略、以及学术界关于中国对外政策分析中的若干理论争鸣。结论部分则尝试对对中国未来的国际地位进行前瞻性的讨论。

英文简介（Course Description）：
This undergraduate lecture course is designed to survey major topics of the international relations of the People’s Republic of China with a specific focus on

Chinese perspective. With a brief introduction of major theoretical perspective on foreign policy studies, the main body of the course is organized around special topics of Chinese foreign policies, including the Chinese historical legacy and its impact on China's foreign policy, nationalism and public opinion in contemporary China, mechanism of China's foreign-policy decision-making, leaders and their styles, China's attitudes towards global governance, the economic dimension of China's interactions with the outside world, public diplomacy and China's soft power and China's policy towards peripheral countries, (in particular, the Northeast Asia and the South China Sea). This course pays attention to the application of different international relations theories to the problems under study. The course aims to acquaint students with knowledge of China's involvement in world affairs in historical and contemporary perspectives and train them with an analytical understanding of the dynamics of China's foreign policy.

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课程号（Course Number）：02433200
课程名称（Course Title）：伊斯兰与世界政治/Islam in World Politics
开课院系（School/Department）：国际关系学院/School of International Studies
学分（Credits）：2
授课教师（Faculty）：王联 教授 Professor

先修课程（Prerequisites）：无

中文简介：
20世纪70年代以来，伊斯兰复兴运动的勃兴，把看似远离现实的宗教推向世界政治舞台的前沿，伊斯兰及伊斯兰教与世界政治的密切互动，成为政界、学界和社会大众争论不休的话题。
一系列亟待回答的重大理论和现实问题，摆在世人面前：如何理解伊斯兰教？如何评价当代伊斯兰复兴思潮和复兴运动？如何认识伊斯兰与社会现代化进程的互动？如何认识当今世界格局下，伊斯兰与西方世界的关系？是伊斯兰力量的崛起威胁了西方世界的安全，因而西方国家要展开积极的干预，还是西方的霸权、强权政治妄图主导伊斯兰世界的政治和社会变革，从而引发反美、反西方的伊斯兰力量的复兴？诸如此类的重大问题，使得对伊斯兰与世界政治关系的研究，成为当前国际政治学科的一个前沿性课题。
本课即是为了全面、系统地梳理这些问题而进行的一项尝试，通过对伊斯兰、伊斯兰教的发展和传播，选择典型国家和地区的代表性案例进行分析和讨论，穿插运用图片和音像资料，从理论、历史和现实的角度，着重研究世界政治中的伊斯兰与世俗政治、伊斯兰与民族国家、伊斯兰传统与现代化进程等三方面的问题。
通过课堂讲授和课内外的讨论，使同学们对世界政治中的伊斯兰因素，得到更为全面、系统的认知和了解，进一步认清世界政治的复杂性，对课程涉及的主要问题具备鲜明的正确立场，对当今伊斯兰因素与世界政治的互动有一个宏观把握。

英文简介（Course Description）：

There is little question that the major social phenomenon in the contemporary Islamic world is the resurgence of Islamist movements. In this seminar we shall attempt to understand the roots, the motives and the significance of these movements.

Proceeding from an introduction to Islam-- the religion of about one billion people worldwide--a number of key questions will give shape to the seminar. How to understand the religion of Islam well and truly? What exactly does political Islam in world politics mean? To what extent has political Islam been shaped over the decades by the western powers, and how might we best understand the relations among Islam, nation-state, modernity and popular politics in the light of its situation in the world.

Although the Islamic revolution in Iran has captured the imagination of many Muslims, Islamist movements in locales like Egypt, Algeria, Palestine, Sudan, Afghanistan and Pakistan have their own histories and their own burdens, and it shall be as important to discern the differences as to underline the similarities.

Of course, the events of September 2001 have underlined that extremist Muslim groups are prepared to pursue their aim through violence. Therefore, especially in the course, we will arrange several lectures examining the nature of groups such as al-Qaeda, as well as exploring the extent of their support in contemporary Islamic societies.

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课程号（Course Number）： 02534380
课程名称（Course Title）：应用经济计量/Applied Econometrics
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 秦雪征 教授 Professor

先修课程（Prerequisites）： This course is intended for the upper undergraduate students in Economics, Business or other social science majors. Graduate students are also welcome. Prior training in Introductory Econometrics or Statistics is required. The main focus of the course is to use econometric tools to solve real-world problems, and thus we will not spend much time on the mathematical derivation of basic models.

中文简介：
本课程旨在系统介绍计量经济学的常用研究方法，并培养学生独立运用计量经济模型及计算机软件分析解决实证经济问题的能力。课程主要涵盖以下内容：线性回归和函数形式的选取，异方差和序列相关性，基础和高级时间序列模型，混合横截面和面板数据模型，离散选择模型，内生性和工具变量估计，联立方程模型等。实现以上模型所需要的计算机编程技术（SAS软件）也将在课上讲授。同时，学生将有机会独立使用现实经济数据进行项目研究，从而提高自己的科研能力。

英文简介（Course Description）：
This course provides you with a general understanding of the econometric modeling tools that are frequently used in the empirical economic studies. The topics covered include linear regressions and the selection of functional forms, heateroskedasticity and serial correlation, basic and more advanced time series techniques, pooled cross-sectional and panel data models, models for binary choice and limited dependant variables, endogeneity and instrumental variable estimation, simultaneous equation models, etc. The computer programming techniques that are needed to implement the above models will also be taught using SAS software. In addition, you will get a taste of empirical research using the real-world data by conducting an independent research project.

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课程号（Course Number）： 02535030
课程名称（Course Title）：企业全面风险管理/Enterprise Risk Management
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 陈凯 副教授 Associate Professor
先修课程（Prerequisites）： Risk Management, Finance, Calculus, Probability

中文简介：
Enterprise Risk Management在国内被翻译为全面风险管理或企业全面风险管理。本课程在讨论企业全面风险管理的框架基础上，介绍企业全面风险管理在实务中的需要和应用。本课程将分别从企业全面风险管理的概念、改革、模型、应用和未来进行阐述，要求同学们在了解企业全面风险管理的概念和框架的同时，掌握其模型和应用。同学会被要求以小组为单位解决一些实务问题，并给出课题报告。

英文简介（Course Description）：
Enterprise risk management is a complex yet critical issue that all companies must deal with as they head into the twenty-first century. It empowers you to balance risks with rewards as well as people with processes. But to master the numerous aspects of enterprise risk management, you must first realize that this approach is not only driven by sound theory but also by sound practice.
This course is based on the framework of Enterprise Risk Management. It also introduces the models and applications of Enterprise Risk Management. The scheme of the course is followed by introduction, reform, model, application and future of Enterprise Risk Management.
It requires students not only to understand the concepts and framework of Enterprise Risk Management, but also to master the risk management model and applications in the real world. Students are required to finish a group project and present the report at

the end of the course.

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课程号（Course Number）：02535510
课程名称（Course Title）：新结构智库实践/NSE Academic Think Tank Practice
开课院系（School/Department）：经济学院/School of Economics
学分（Credits）：3
授课教师（Faculty）：于佳 研究员 Research Fellow，沈鸿 无职称

先修课程（Prerequisites）：《新结构经济学导论》

中文简介：
《新结构智库实践》课程是面向本科生和研究生所开设的政策研究实践课程，该课程秉承“知成一体”的理念，旨在为学生在掌握新结构经济学基本理论的基础上，创造认识世界、改造世界一体的实践机会。该课程基本目标是运用新结构经济学理论工具和实践方法论，从现象出发，获取对现实世界经济结构变迁和政策方案的最大化理解。

英文简介（Course Description）：
This course introduces NSE academic think-tank practice to senior undergraduate and graduate students. It consists of a theory section that introduces methodology for think-tank practice based on New Structural Economics and a practice section that provides students with opportunities to participate in actual think-tank consulting projects. The course aims to help students to obtain a deeper understanding of issues related to development and structural transformation in the real world economy.

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课程号（Course Number）：02535620
课程名称（Course Title）：新结构经济学国际实践/International Practice from the Perspective of the New Structural Economics
开课院系（School/Department）：教务部
学分（Credits）：3
授课教师（Faculty）：于佳 研究员 Research Fellow

先修课程（Prerequisites）：无，对发展经济学尤其是一带一路国家发展实践感兴趣的学生都可以报名。

中文简介：
本课程为学生解读“一带一路”倡议以及新结构经济学视角下的国际实践。在引入新结构经济学“增长甄别与因势利导框架”的基础上，分析非洲、亚洲工业园区发展的实践和经验，并提

出“一带一路”建设需要第三方合作，包括与发达国家和国际组织的合作。“一带一路”建设中需要秉持绿色发展理念，推动基础设施绿色、低碳化，加强生物多样性保护和应对气候变化。在全球化重构形势下，“一带一路”建设面临新的挑战和机遇，需要在新结构经济学指导下推动 “基础设施+制造业+服务业”的新模式。

课程包括以下八个单元：
一、全球化背景下“一带一路”倡议与新结构经济学：“华盛顿共识”的失败，新结构经济学成为发展中国家的可行选项
二、新结构经济学“增长甄别与因势利导框架”和工业园区建设的利益相关方分析（GROW model）
三、案例分析：非洲工业园区发展的实践，包括埃塞俄比亚的成功经验以及新结构国际智库团队在贝宁、尼日利亚等国家的具体实践案例
四、案例分析：亚洲国家承接中国产业转移的实践，包括中巴经济走廊的得失分析
五、案例分析：“一带一路”对接金砖机制、亚投行，“一带一路”发展中国家不仅需要优惠资金，更需要新的发展理念和最佳实践
六、“一带一路”建设中的第三方合作，包括与发达国家和国际组织的合作
七、“一带一路”建设与绿色发展，包括应对气候变化、光伏产能转移的潜力评估
八、全球化重构形势下“一带一路”建设的挑战和机遇：全球产业链的区域化、多元化正在加速，部分“一带一路”发展中国家特别是非洲面临边缘化，需要推动 “基础设施+制造业+服务业”新模式

英文简介（Course Description）：
This course will help students to understand the "belt and road initiatives" (BRI) and the international practice from the perspective of new structural economics, as well as the application of Growth Identification and Facilitation Framework (GIFF tool). The course assess the experience and lessons learnt from the industrial park development in selected African and Asian countries. The BRI needs third party cooperation, including cooperation with developed countries and international organizations. BRI also needs to uphold the concept of green development, promote green and low carbon infrastructure, strengthen biodiversity conservation and address climate change. Given the new trend of regionalization in the global supply chain, BRI is facing new challenges and opportunities, it is proposed to promote the new mode of "infrastructure + manufacturing + service" under the guidance of new structural economics. The course includes the following eight units:

1) BRI in the era of globalization: failure of "Washington consensus" while new structure economics becomes a viable option for developing countries.

2) New structural economics "Growth Identification and Facilitation Framework, GIFF) and stakeholder analysis of industrial park development (GROW model).

3) Case analysis: industrial park development in Africa, including the successful experience of Ethiopia; the INSE think tank team's practice in Benin, Nigeria, and other African countries.

4) Case analysis: Asian countries undertaking China's industrial transfer, including assessment of China Pakistan Economic Corridor.

5) Case study: BRI vs. BRICS mechanism (including New Development Bank) and AIIB. The developing countries in BRI need concessional resources but more on new development concept and best practices.

6) BRI and third party cooperation, including cooperation with developed countries and international organizations.

7) BRI and green development, including the assessment of the potential of responding to climate change and relocation of solar photovoltaic capacity from China to other developing countries.

8) The challenges and opportunities of BRI under the new trend of globalization: The regionalization of supply chain has been accelerating and some developing countries, African countries in particular, are facing marginalization. Therefore, in the implementation of BRI, a new model of "infrastructure + manufacturing + service" should be adopted.

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课程号（Course Number）： 02830730
课程名称（Course Title）：当代中国社会/Contemporary Chinese Society
开课院系（School/Department）： 光华管理学院/Guanghua School of Management
学分（Credits）： 3
授课教师（Faculty）： 谢宇 教授 Professor，董浩 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
在今天这个时代，我们尤其感兴趣中国在发生什么。在1949年中国建国之前，中国经历了从1840年的鸦片战争到第二次世界大战结束的百年屈辱历史，中国一直处于贫穷，落后的深渊。直到1978年的经济改革，中国才恢复了与世界其他国家的联系，并开启了一个新的时代。自1978年以来，中国经历了在人类历史上无论从规模、速度还是影响上都史无前例的社会变革，中国社会的各个方面都在进行着根本而永久的改变。

这一课程将会介绍中国社会的一些最显著的特征，包括工作单位，教育系统，城乡差距，人口迁移，社会不平等，婚姻和家庭，民族和宗教。教学重点是要在中国的历史、文化、政治和经济背景下来理解中国的社会现象。

这一课程会给学生一个理解中国的社会学视角，使学生能够学会研究中国的其他社会变迁，而

且这些社会变迁的长远影响并不仅仅在于现在生活在中国的13亿中国人，而且也会影响到世界上其他的发达国家和发展中国家。

英文简介（Course Description）：
This is a particularly exciting time to know what is going on in China today. After its unification in 1949, following a “century of humiliation” between the Opium War that began in 1840 and the end of the Second World War, China remained poor, undeveloped and isolated from the rest of the world until 1978, when economic reform initiated a new era. Since 1978, China has been undergoing a social transformation of which the scope, rapidity and impact are unprecedented in human history; all aspects of Chinese society are changing fundamentally and forever.

The seminar offers an introduction to some of the most prominent features of Chinese society, including work organizations, the education system, the urban/rural divide, migration, social inequality, marriage and family, ethnicity and religion. The emphasis is on understanding social phenomena in China within its historical, cultural, political and economic context.

This seminar gives a substantive introduction to sociological perspectives of China that will allow students to begin to study other social changes in China and their long-term impact on not only the 1.3 billion Chinese now living in China—the largest population in the world today—but also people living elsewhere, in developed as well as developing countries.

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课程号（Course Number）： 02930239
课程名称(Course Title)：中国刑事司法体系导论/Introduction to Chinese Criminal Justice System
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 江溯 长聘副教授 ，吴雨豪 助理教授

先修课程（Prerequisites）： 无

中文简介：
本课程将帮助学生从历史、政治和法律的角度理解中国的刑事司法。对于每个部分，将给出一个简短的介绍，以提供相关领域的大局，同时选择重要的主题进行进一步讨论。本课程不仅旨在提供“纸面上的中国刑事司法”，而且旨在提供“行动中的中国刑事司法”。由于刑事司法在中国的法律制度中发挥着极其重要的作用，对中国刑事司法的理解将有助于学生更好地了解中国的法律、政治和社会。

英文简介（Course Description）：
This Course will help the students to understand Chinese criminal justice from historical, political and legal perspectives. For each section, a brief introduction will be given to provide a big picture of the relevant field, at the same time important topics will be selected for further discussions. This course is aimed at providing not only the “Chinese criminal justice in book” but “Chinese criminal justice in action”. Since criminal justice plays an extremely important role in Chinese legal system, the understanding of Chinese criminal justice will help the students to have better understanding of Chinese law, politics and society.

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课程号（Course Number）： 02930242
课程名称(Course Title)：国际组织法导论/An Introduction to International Organizations Law
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 陈一峰 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
在过去超过四分之三个世纪里，基于条约成立、拥有国家成员资格和独立法律人格的国际组织已成为全球事务中不可或缺的组成部分。无论是联合国维护和平与安全的使命，世界银行和国际货币基金组织推动可持续发展的努力，还是世界卫生组织促进科技合作的实践，国际组织在现代多边关系中都发挥着关键作用。

本暑期课程系统讲解国际组织得以创立并规范其运作的法律体系，旨在帮助学生掌握国际组织法的基本原理。课程采用"讲座+专题研讨"的复合教学模式，共设置10个教学单元，包含前往驻华国际组织总部的实地考察环节，并将以学生专题汇报作为课程成果展示。

英文简介（Course Description）：
For over three-quarters of a century, international organizations—possessing a treaty-basis, State-membership and an autonomous legal personality—have been integral to global affairs. Whether it is the pursuit of peace and security by the United Nations, or sustainable economic development by The World Bank and International Monetary Fund, or scientific and technical cooperation, by the World Health Organization, international organizations are essential to modern multilateral relations.

This summer course introduces the law both enabling and governing every international organization. The objective is to possess students of a foundational understanding of

international organizations law. It comprises 10 sessions, combining lecture- and structured seminar-based formats, together with a planned field trip to a Beijing-headquartered international organization and student presentations.

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课程号（Course Number）： 02930247
课程名称（Course Title）：比较法律与治理：第二次大分流/Comparative Law and Governance: The Second Great Divergence
开课院系（School/Department）： 法学院/Law School
学分（Credits）： 1
授课教师（Faculty）： 戴昕 长聘副教授

先修课程（Prerequisites）： 无先修课程要求

中文简介：
本课程面向具备近现代世界史基础知识且对全球科技创新竞争感兴趣的各专业本科生。课程以“第二次大分流” 为核心视角，融合课堂讲授、集体讨论与个人写作任务。课程教学核心目标为对比 19 至 21 世纪中西方科技创新领域的法律与治理模式，评估不同国家和地区为谋求地缘政治比较优势、推动创新所采用的各类法律与治理策略的实际效果，让学生理解科技创新背后法律、治理与地缘政治的深层关联，培养学生跨时空、跨区域的比较分析思维和对全球科技竞争格局的研判能力。
课程内容以 “大分流” 理论为脉络层层展开，首课引入彭慕兰《大分流》与 2026 年美国政府 “第二次大分流” 相关论述，搭建课程分析框架；随后依次探讨 20 世纪西方解释东西方兴衰的主流社会科学理论，深入剖析 “内卷化”“高水平均衡陷阱” 等概念在近代中国及东南亚历史中的体现，并将其作为后续分析的理论工具。课程进一步对比中美实用主义与欧洲理想主义的治理文化差异，以移动支付发展为例，阐释文化特质对科技创新的影响；同时从工程学、信息科学视角，讲解持续改进、系统思维、数据生产要素等理念，分析钱伟长控制论工程学等理论对中西方科技创新的支撑作用。在此基础上，课程聚焦中、美、欧国家创新体系的异同，梳理创新研究领域的核心理论，探讨全球平台经济的地域特征与 AI 发展的地缘政治意义。此外，课程还对比中、美、欧的国家合法性基础，剖析西方代议制、中国特色社会主义等不同治理模式的合法性逻辑，以及欧盟民主赤字、WTO 权威弱化等现实问题。课程最后回归 “内卷化” 理论，将其应用于西方治理体系分析，探讨西方福利国家的监管内卷现象，分析其对创新体系、市场机制的影响，结合图钦的政治解体理论，研判西方治理体系面临的深层挑战。
整个课程通过跨学科、跨区域的比较分析，串联起历史、法律、政治、经济、科技等多领域知识，引导学生从历史规律和理论框架出发，理解当下全球科技创新与治理的竞争格局，思考不同治理模式的优势与挑战

英文简介（Course Description）：
This is a 1-credit undergraduate course that consists of 8 sessions with a total of 16 contact hours, targeting undergraduate students of all disciplines who have a basic knowledge of modern and contemporary world history and an interest in the global

competition for technological innovation. Centered on the core perspective of "the Second Great Divergence", the course integrates lectures, class discussions and individual writing assignments. Students' academic performance is assessed through daily 100-200 word reading reflections and a 1000-2000 word integrative essay at the end of the course. Clear academic integrity requirements are specified: students are allowed to communicate for learning and refer to AI and other resources, but all submitted assignments must be independently written.

The core teaching objectives of the course are to compare the legal and governance models in the field of technological innovation between China and the West from the 19th to the 21st century, and evaluate the effectiveness of various legal and governance strategies adopted by different countries and regions to foster innovation in pursuit of comparative geopolitical advantages. It aims to enable students to understand the in-depth connection between law, governance and geopolitics behind technological innovation, and cultivate their cross-temporal and cross-regional comparative analytical thinking as well as the ability to judge the pattern of global technological competition.

The course content unfolds layer by layer with the theory of "Great Divergence" as the thread. The first session introduces Kenneth Pomeranz's The Great Divergence and the relevant discussions of the Trump Administration's "the Second Great Divergence" in 2026, establishing the analytical framework of the course. It then explores the mainstream social science theories in the West that explained the rise and fall of the East and the West in the 20th century, and delves into the embodiment of concepts such as "involution" and the "high-level equilibrium trap" in the modern history of China and Southeast Asia, which are used as theoretical tools for subsequent analysis. The course further compares the differences in governance culture between the pragmatism of China and the United States and European idealism, and takes the development of mobile payments as an example to explain the impact of cultural characteristics on technological innovation. From the perspectives of engineering and information science, it also expounds on concepts such as continuous improvement, systems thinking and data as a factor of production, and analyzes the supporting role of theories such as Qian Xuesen's cybernetic engineering in technological innovation in China and the West. On this basis, the course focuses on the similarities and differences between the national innovation systems of China, the US and the EU, sorts out the core theories in the field of innovation studies, and discusses the regional characteristics of the global platform economy and the geopolitical significance of AI development. In addition, it compares the foundations of national legitimacy in China, the US and the EU, analyzes the legitimacy logic of different governance models such as Western representative systems and socialism with Chinese characteristics, as well as practical issues such as the EU's democratic deficit and the weakening authority of the WTO.

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课程号（Course Number）： 03033950
课程名称（Course Title）：信息伦理与隐私保护/Information Ethics and Privacy Protection
开课院系（School/Department）： 信息管理系/Department of Information Management
学分（Credits）： 2
授课教师（Faculty）： 夏汇川 助理教授

先修课程（Prerequisites）： 无

中文简介：
信息伦理与隐私保护问题在大数据和智能时代日益凸显，比如数据标签与分类隐藏的种族歧视、数据画像对隐私的滥用、智能系统对人的替代与超越、政治中的选举操控、物联网涉及的隐私侵犯等。本门课程，将向学生们介绍各类信息伦理与隐私保护问题，并与学生们一起探讨这些问题可能带来的商业、政治、社会、与个人方面的影响。这门课旨在锻炼并提升学生独立思考能力，让学生们掌握一些批判性思维方法去考虑大数据与智能时代的信息伦理与隐私保护问题，使其学生们能够对这些问题进行一定深度上的思考与反省

英文简介（Course Description）：
Information ethics and privacy problems are becoming increasingly significant in the Big Data and Artificial Intelligence (AI) era, such as the racial discrimination hidden in the data categorization, privacy intrusion by data profilization, AI's substitution and superiority over humans, data manipulation in political campaigns, and privacy violations in the Internet of Things (IoT). This course aims to introduce various Information ethics problems to students and discuss with them about the impacts and consequences of these problems on commerce, politics, society, and personal lives. This course will strengthen students' independent thinking and train them with the methods to critique and reflect on information ethics in the Big Data and AI era

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课程号（Course Number）： 03132520
课程名称（Course Title）：田野调查实践/Social Study Practicum
开课院系（School/Department）： 社会学系/Department of Sociology
学分（Credits）： 3
授课教师（Faculty）： 刘爱玉 教授 Professor，卢晖临 教授 Professor

先修课程（Prerequisites）：本课程的先修课要求是《社会学概论》、《社会调查与研究方法》，两门课均为社会学系的专业课程。

中文简介：
在社会科学对研究方法的训练中，研究的手艺和研究者的材料和问题意识最接近。本课程将从研究的过程入手，探索在社会学的本科培养项目中如何实现从研究兴趣到研究问题的转变，如果将研究问题付诸研究实践并撰写研究报告。本课程分为两部分，第一部分为授课教师引领学

生读书和讨论，对社会科学研究技艺的几个核心环节进行集中的理论训练，会集中学习一些田野调查经典的研究范例。第二部分为分单元练习的部分，学生将以自己感兴趣的问题为基础，逐一完成各个单元的训练和写作。每一个训练环节中，学生将对本阶段的联系成果进行发言和相互评议，教师将对每一个研究课题进行点评。本课程的目标是选课同学能感受到什么是社会科学的基本研究素质，特别是培养自己动手动脚找材料和充分利用图书馆的文献资源，将自己的兴趣发展成为可以探索的研究问题的能力。学生会被要求以小组的形式展开实践调查，并不断讨论调查的材料和结果，以回应提出的研究问题。本课程也提供田野调查报告或小型论文的写作训练。
本课程是小班课程，有两名老师共同负责一个班的讨论、田野和写作训练，每个班限定在8名同学以内。

英文简介（Course Description）：
Social study is one of the core educational means to grow empirical senses in undergraduate students. We aim it to foster both analytical and theoretical thinking by introducing the social study methods to the students. Social study methodologically could be learned at three levels, theory (including history and philosophy of social science), methods and research crafts. This course focuses at the last level, the research craft. We will walk the students through the whole research process and explores the possibility of teaching social study methods in a sociological
way.

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课程号（Course Number）： 03132520
课程名称（Course Title）： 田野调查实践/Social Study Practicum
开课院系（School/Department）： 社会学系/Department of Sociology
学分（Credits）： 3
授课教师（Faculty）： 熊跃根 教授 Professor，刘能 教授 Professor

先修课程（Prerequisites）： 本课程的先修课要求是《社会学概论》、《社会调查与研究方法》，两门课均为社会学系的专业课程。

中文简介：
在社会科学对研究方法的训练中，研究的手艺和研究者的材料和问题意识最接近。本课程将从研究的过程入手，探索在社会学的本科培养项目中如何实现从研究兴趣到研究问题的转变，如果将研究问题付诸研究实践并撰写研究报告。本课程分为两部分，第一部分为授课教师引领学生读书和讨论，对社会科学研究技艺的几个核心环节进行集中的理论训练，会集中学习一些田野调查经典的研究范例。第二部分为分单元练习的部分，学生将以自己感兴趣的问题为基础，逐一完成各个单元的训练和写作。每一个训练环节中，学生将对本阶段的联系成果进行发言和相互评议，教师将对每一个研究课题进行点评。本课程的目标是选课同学能感受到什么是社会科学的基本研究素质，特别是培养自己动手动脚找材料和充分利用图书馆的文献资源，将自己的兴趣发展成为可以探索的研究问题的能力。学生会被要求以小组的形式展开实践调查，并不

断讨论调查的材料和结果，以回应提出的研究问题。本课程也提供田野调查报告或小型论文的写作训练。
本课程是小班课程，有两名老师共同负责一个班的讨论、田野和写作训练，每个班限定在8名同学以内。

英文简介（Course Description）：
Social study is one of the core educational means to grow empirical senses in undergraduate students. We aim it to foster both analytical and theoretical thinking by introducing the social study methods to the students. Social study methodologically could be learned at three levels, theory (including history and philosophy of social science), methods and research crafts. This course focuses at the last level, the research craft. We will walk the students through the whole research process and explores the possibility of teaching social study methods in a sociological
way.

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课程号（Course Number）： 03132550
课程名称（Course Title）： 社会调查实践/Practise
开课院系（School/Department）： 社会学系/Department of Sociology
学分（Credits）： 4
授课教师（Faculty）： 张哲 助理教授

先修课程（Prerequisites）： 无

中文简介：
专业实习安排在大三进行，其目的是在专业学习和调查的基础上，让学生对本专业有更具体深刻的认识。通过跟随导师在相关单位或项目的实地调研，更深入地了解社会学应用，将所学的专业知识初步应用到实际中去。

英文简介（Course Description）：
The course is aimed to improve the ability of field research for the third-year students in sociology. To get the credit of this course, the students are required to go in field to do research under the supervision of the instructing teachers, and finish the research report.

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课程号（Course Number）： 03134010
课程名称（Course Title）：社会调查研究（一）/social research and fieldwork (1)
开课院系（School/Department）： 社会学系/Department of Sociology

学分（Credits）：2
授课教师（Faculty）：王迪 副教授 Associate Professor

先修课程（Prerequisites）：无

中文简介：
田野调查是社会科学学者了解社会现象、理解人类行为的重要方法，开展社会研究需要进入“田野”、扎根
基层、理解日常。本课程将带领学生开展深入的田野调查，研究议题将围绕社会发展与数字技术的交叉领域
展开，研究对象关注县城或农村居民。完成本课程后，学生将掌握如何开展田野调查、如何认识和理解研究
对象、如何整理和组织田野调查数据等社会调查技能

英文简介（Course Description）：
Conducting fieldwork is one of the most fundamental approaches for social science researchers
to grasp social phenomenon and understand human behaviours. Good practices of social science research require entering the field site, living within grassroots society, and
understanding daily and mundane lives of local communities. In this course, students will join
the two lecturers to conduct in-depth fieldwork research. Research topics will focus on the
intersected areas of social development and digital technologies. The course will focus specifically on rural or suburban areas in China. Students are expected to obtain skills such as
conducting fieldwork, interviewing key informants, collecting and organising fieldwork data.

-End-

课程号（Course Number）：03134020
课程名称（Course Title）：社会调查研究（二）/Social Research and Fieldwork (2)
开课院系（School/Department）：社会学系/Department of Sociology
学分（Credits）：2
授课教师（Faculty）：王迪 副教授 Associate Professor
先修课程（Prerequisites）：社会调查研究（一）

中文简介：
培养社会科学的素养需要方法训练和经验感提升并重，本课程将带领学生在田野调查（一）基础上展开进一步的田野工作，在教师的带领下、同学的互助下，结成研究小组，围绕一些议题，

对基层社会尤其是县域社会展开调研，并在此过程中体验田野调查的过程，并领悟社会科学剖析现象与行为的方法。本课程期待学生在完成课程后能对田野调查有更深刻的理解，能产生对于某类社会问题的研究兴趣，并由动力沿着一定的问题脉络，在未来开展进一步的探索和研究。

英文简介（Course Description）：

The arts of the social sciences requires both method training and experience in the field. This course will lead students to participate in more advanced field work, form research groups under the guidance of the teachers, and cooperate with their fellow students, to conduct empirical research, especially in relation to the county-level society. It is expected the students can experience the process of field investigation and acquire the methods of analyzing social phenomena and behaviors. The students are expected to have a deeper understanding of field research, to develop an interest in certain social problems, and to be motivated to further explore certain puzzles after completing the course.

-End-

课程号（Course Number）： 03139110
课程名称（Course Title）：死亡的社会学思考/Sociological Perspectives of Dying and Death
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 张洋 预聘副教授 ，陆杰华(校外) 待定

先修课程（Prerequisites）： 无

中文简介：

《死亡的社会学思考》课程是为全校跨专业的本科生专门设置的通选课程之一。目前，国内高校开设与死亡社会学相关的课程并不多见，死亡社会学的相关教材也相对较少。为此，本门课程重点从社会学视角审视在中国社会经济转型背景下，尤其人口老龄化加速的宏观背景下与临终、死亡与丧亲关怀相关的重点议题。课程涉及的主要内容包括死亡社会学产生的现实背景、学科研究对象、相关理论基础、学科研究方法等方面，重点从跨学科（尤其是社会学）和跨文化对死亡教育、死亡过程、死亡类型、临终关怀、死亡应对等议题进行学理性的诠释。

英文简介（Course Description）：

The sociological perspective of dying and death is one of the courses that are specially set for the undergraduate at the university. At present, there are few studies about the course of the sociology of dying and death in domestic universities, and there are relatively few related teaching materials about the sociology of dying and death. To this end, this course focuses on the social and economic background of China's social and economic transformation from the perspective of sociology, especially in the macro background of population aging and the key issues related to death, death and loss of pro. The contents of the course include realistic background, research object, study

of death society related theories, research methods and other aspects, the focus from the interdisciplinary (especially Sociology) and cross culture on death education, death process, causes of death and hospice care type to deal with issues such as rational interpretation.

-End-

课程号（Course Number）： 03230020
课程名称（Course Title）：政治学原理/Principles of Politics
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 马啸 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
本课程包括政治与政治学、利益与政治、政治权力、政治权利、政治统治、政治管理、国家、政党、政治社团、政治心理、政治思想、政治社会化、政治革命、政治改革、政治民主等十八个方面的内容，展开阐述了关于人类社会政治的本质和政治生活基本方面的理论和观点。本课程是政治学、行政管理学专业的主干理论基础课，通过本课程的学习，使学生掌握政治学的基本理论和分析方法，理解政治的本质和基本规律，形成政治分析的基本能力，并且为政治学和行政管理学其它课程的学习作理论准备。

英文简介（Course Description）：
This course includes concept of politics and political science, the interests and politics, political power, political rights, political rule, political management, state, political parties, political social organizaions, political psychology, political ideologies, political socialization, political revolution, political reform, political democracy, etc., the aims of the course are expand and elaborate theories and views of the fundamental aspects of human social and political nature and political life. This course is a professional`s trunk theoretical basic course for political science, administrative management undergraduate students. Through this course, so that students can grasp theoretical and analytical methods, can understand the nature of and the basic political laws, can form the basic ability of political science, espesically can prepare for other courses of study for the theoretical analysis and administration.

-End-

课程号（Course Number）： 03233590
课程名称（Course Title）：理解中国治理：理论与方法/Understanding China's Governance:

Theory and Methods
开课院系（School/Department）：教务部
学分（Credits）：3
授课教师（Faculty）：刘颜俊 长聘副教授

先修课程（Prerequisites）：无。国际暑期学校课程，全英文授课，要求有较好的英文沟通以及学术文献阅读和写作能力。
No prerequisites. Open to undergraduate and entry-level graduate students interested in China’s governance, comparative politics, and political analysis.

中文简介：
本课程透过中国治理的视角，介绍政治分析的核心理论与方法。它的目的是(1)为学生提供理解治理---国家能力、政策过程、代表性/响应性、国家-社会关系等的主要分析框架；(2)将中国治理置于比较和全球视角中；(3)培养学生使用适当的定性和定量方法设计和评估有关中国及其他国家治理的严谨研究。

英文简介（Course Description）：
This course introduces core theories and methods in political analysis through the lens of China’s governance. It aims to (1) provide students with major analytical frameworks for understanding governance—state capacity, policy process, representation/responsiveness, and state–society relations— (2) situate China ‘s governance in comparative and global perspective, and (3) train students to design and evaluate rigorous research on governance in China and beyond using appropriate qualitative and quantitative methods.

-End-

课程号（Course Number）：03631990
课程名称（Course Title）：速成法语（零起点）/French for Reading from scratch
开课院系（School/Department）：外国语学院/College of Foreign Languages
学分（Credits）：2
授课教师（Faculty）：孙凯 副教授 Associate Professor
先修课程（Prerequisites）：无

中文简介：
本课程旨在用32学时使零起点学生了解法语的发音规则，熟练掌握重要语法知识，全面领会基础语法，能够应用常见词汇和实用句型，在借助字典的情况下具备中、高级法语阅读能力以及初级听、说、写、译的能力，并能够从事一般性国际文化交流及科研工作。

英文简介（Course Description）：
This course is designed to enable students from the starting point to learn French pronunciation rules, acquire important grammar knowledge, fully understand the basic

grammar, apply common vocabulary and practical sentences within 32 hours.Through training, students can acquire intermediate and advanced French reading ability with the help of dictionaries, and have the ability of primary listening, speaking, writing and translating, as well as being able to engage in general international cultural exchange and scientific research.

-End-

课程号（Course Number）： 03835270
课程名称（Course Title）：英语词汇与英美文化/English Words in Culture Context
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 王静文 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程面向非英语专业本科生。这是一门集词汇学习和文化学习于一体的课程。重点介绍英语的发展，英美语言中词汇的构成和词义的发展，同义词，反义词，英语中的惯用法、成语、谚语，词语掌故，各种各样的英语，以及英语词汇测试等。
课程以课堂讲授为主，辅之以多媒体手段，为同学提供形象、生动的语言材料。在了解英语词汇及其文化内涵的同时，通过学习经典材料、利用图书馆或网络资源完成课堂报告等形式，全面提高综合运用英语的能力。

英文简介（Course Description）：
This course introduces students to the systematic study of English vocabulary, its structure, history and cultural context. The course will focus on the structure and meaning of English words, including word formation, types of meaning and sense relations. Broader topics will also be explored, such as the history of English, semantic change, meaning and context and varieties of English.

Students are expected to read the textbook before class. Class components include lectures, discussions and oral presentations. At the end of the course students will be able to analyze morphologically complex words, have a firm grasp of basic patterns of English word formation, enrich their vocabulary and acquire a better understanding of the English language and culture.

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课程号（Course Number）： 03835270
课程名称（Course Title）： 英语词汇与英美文化/English Words in Culture Context

开课院系（School/Department）：英语语言文学系/English Language and Literature
学分（Credits）：2
授课教师（Faculty）：王静文 讲师 Lecturer

先修课程（Prerequisites）：无

中文简介：
本课程面向非英语专业本科生。这是一门集词汇学习和文化学习于一体的课程。重点介绍英语的发展，英美语言中词汇的构成和词义的发展，同义词，反义词，英语中的惯用法、成语、谚语，词语掌故，各种各样的英语，以及英语词汇测试等。
课程以课堂讲授为主，辅之以多媒体手段，为同学提供形象、生动的语言材料。在了解英语词汇及其文化内涵的同时，通过学习经典材料、利用图书馆或网络资源完成课堂报告等形式，全面提高综合运用英语的能力。

英文简介（Course Description）：
This course introduces students to the systematic study of English vocabulary, its structure, history and cultural context. The course will focus on the structure and meaning of English words, including word formation, types of meaning and sense relations. Broader topics will also be explored, such as the history of English, semantic change, meaning and context and varieties of English.

Students are expected to read the textbook before class. Class components include lectures, discussions and oral presentations. At the end of the course students will be able to analyze morphologically complex words, have a firm grasp of basic patterns of English word formation, enrich their vocabulary and acquire a better understanding of the English language and culture.

-End-

课程号（Course Number）：03835500
课程名称（Course Title）：新西兰历史与文化/New Zealand: History and Culture
开课院系（School/Department）：英语语言文学系/English Language and Literature
学分（Credits）：2
授课教师（Faculty）：马小琦 讲师 Lecturer

先修课程（Prerequisites）：无

中文简介：
新西兰历史与文化是一门为北大本科生开设的全英语授课的文化与语言素质课程。本课程得到北京大学新西兰中心支持，邀请新西兰梅西大学以及其他大学所派教授举办客座讲座，和刘红中老师进行点评并负责课程的各个教学环节的形式进行。本课程旨在以全球的视野介绍和解析新西兰的历史与文化，内容分专题，让学生对新西兰的历史、文化与社会，及其教育、科技、

环境、媒体、电影业等的发展概况有一个较全面的了解。课程内容将以讲义、专题讲座、电影等为主要内容，以课堂讲授和集体讨论并举为主要方式。本课程还鼓励学生参加北京大学新西兰中心主持的新西兰系列讲座，新西兰电影系列放映。本课程特设有答疑时间，欢迎学生到新西兰中心借阅图书杂志，不定期邀请新西兰学者、专家、新西兰留学生等进入课堂，与学生互动，为学生提供更多的学习机会。通过本课程的学习，学生不仅能学会怎样进入某一学科的初步研究，而且能在轻松活泼的学习过程中提高英语听、说、读、写各方面实际运用能力，学会适应西方大学的教学方式，培养学生掌握在全球化与多元化的双重视角下的进行学习与研究的能力，尤其适合于有志全面提高英语水平、进入英语专业课程学习或出国留学的学生。

英文简介（Course Description）：

New Zealand is the last country on earth to be settled by humans, but also the first country in innovations such as women's voting, social welfare, environmental protection, and an independent foreign policy voice. The course introduces students to the history, cultures and contemporary issues of New Zealand through presentations by New Zealand professors and Beida faculty members, films and other audio-visual materials, and interesting student projects. Opportunities for student discussion are actively encouraged. The course enables students to improve their academic English by using the language to explore all the themes of the course.

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课程号（Course Number）： 03835500
课程名称（Course Title）： 新西兰历史与文化/New Zealand: History and Culture
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：

新西兰历史与文化是一门为北大本科生开设的全英语授课的文化与语言素质课程。本课程得到北京大学新西兰中心支持，邀请新西兰梅西大学以及其他大学所派教授举办客座讲座，和刘红中老师进行点评并负责课程的各个教学环节的形式进行。本课程旨在以全球的视野介绍和解析新西兰的历史与文化，内容分专题，让学生对新西兰的历史、文化与社会，及其教育、科技、环境、媒体、电影业等的发展概况有一个较全面的了解。课程内容将以讲义、专题讲座、电影等为主要内容，以课堂讲授和集体讨论并举为主要方式。本课程还鼓励学生参加北京大学新西兰中心主持的新西兰系列讲座，新西兰电影系列放映。本课程特设有答疑时间，欢迎学生到新西兰中心借阅图书杂志，不定期邀请新西兰学者、专家、新西兰留学生等进入课堂，与学生互动，为学生提供更多的学习机会。通过本课程的学习，学生不仅能学会怎样进入某一学科的初步研究，而且能在轻松活泼的学习过程中提高英语听、说、读、写各方面实际运用能力，学会适应西方大学的教学方式，培养学生掌握在全球化与多元化的双重视角下的进行学习与研究的能力，尤其适合于有志全面提高英语水平、进入英语专业课程学习或出国留学的学生。

英文简介（Course Description）：
New Zealand is the last country on earth to be settled by humans, but also the first country in innovations such as women's voting, social welfare, environmental protection, and an independent foreign policy voice. The course introduces students to the history, cultures and contemporary issues of New Zealand through presentations by New Zealand professors and Beida faculty members, films and other audio-visual materials, and interesting student projects. Opportunities for student discussion are actively encouraged. The course enables students to improve their academic English by using the language to explore all the themes of the course.

-End-

课程号（Course Number）： 03835520
课程名称（Course Title）：英美文学概况/Introduction to British & American Literature
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程由外教授课，主要内容包括英美文学发展史及代表作家的简要介绍和作品选读。从英美两国历史、语言发展角度出发，简要介绍英美两国各个重要时期的主要历史背景，文学流派，主要作家的文学生涯、创作思想、艺术特色及其主要代表作品，包括诗歌、小说、散文等。本课程从课堂表现，课堂报告以及考试等方面评定学生成绩。

英文简介（Course Description）：
This course will give a survey of the major movements in English literature. Students will read pieces of famous literature and discuss the ideas and style of these works. We will have examples of major authors from poetry, fiction and nonfiction, and cover both classic and modern literature.
Students will be evaluated based on class participation, a presentation, and exam.

-End-

课程号（Course Number）： 03835520
课程名称（Course Title）： 英美文学概况/Introduction to British & American Literature
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程由外教授课，主要内容包括英美文学发展史及代表作家的简要介绍和作品选读。从英美两国历史、语言发展角度出发，简要介绍英美两国各个重要时期的主要历史背景，文学流派，主要作家的文学生涯、创作思想、艺术特色及其主要代表作品，包括诗歌、小说、散文等。本课程从课堂表现，课堂报告以及考试等方面评定学生成绩。

英文简介（Course Description）：
This course will give a survey of the major movements in English literature. Students will read pieces of famous literature and discuss the ideas and style of these works. We will have examples of major authors from poetry, fiction and nonfiction, and cover both classic and modern literature.
Students will be evaluated based on class participation, a presentation, and exam.

-End-

课程号（Course Number）： 03835620
课程名称（Course Title）：美国华人移民的历史与文化/History and Culture of Chinese Immigrants in America
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer，Tian Xiaofeng(校外) 待定

先修课程（Prerequisites）： n/a

中文简介：
通过阅读当代文学及其他作品和欣赏电影，探索美国华人移民的历史与文化问题。主要探讨的论题包括华人移民美国的历史、华人移民的文化和传统、以及中国文化在美国与其他文化的融合问题。
学生将发现在美国华人移民的历史和文化探讨中的一些主要问题，同时对当前教育和文化领域现存的一些问题有一定的了解。
本课程旨在通过阅读当代作品提高英语程度。通过阅读和讨论，学生提高语言能力， 而且能够在美国华人的历史和文化问题上拓宽视野。

英文简介（Course Description）：
Exploration of the history and culture of Chinese immigrants in the U.S. through reading of literary and other cultural texts and appreciation of movies. Topics include the history of Chinese immigration in America, the culture and tradition of Chinese immigrants and the interaction of Chinese culture with other cultures in America. Students identify some main issues involved in the discussion of the history and culture

of Chinese in America and gain an understanding of the current issues in education and cultural realms.
Designed to enhance English proficiency through reading of contemporary works. Through reading and discussion, students develop language skills, in addition to gain new perspectives of history and culture of Chinese America.

-End-

课程号（Course Number）： 03835710
课程名称（Course Title）：语言、文化与交际/Language, Culture and Communication
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 郑萱 教学副教授

先修课程（Prerequisites）： 无

中文简介：
本课程旨在通过介绍和讨论语言、文化和跨文化交际的一些主要议题，提高学生在交际中的跨文化意识，发展跨文化交际能力。课程的前一半侧重于对比汉、英语在不同层面的差异和对交际的影响；后一半侧重于讨论对于这些差异的超越。

英文简介（Course Description）：
Through discussion of selected topics on language, culture, and intercultural communication, this course aims to help students cultivate cross-cultural awareness, and develop intercultural communication competence. The first half of the course focuses on differences between Chinese and English at various levels, and their influence on communication. The second half discusses the transcendence of such differences.

-End-

课程号（Course Number）： 03835730
课程名称（Course Title）：美国文化概览/Introduction to American Culture
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程是为非英语专业学生基础阶段开设的文化专题课，课程类别为本科必修，由外教授课。本课程的目标在于：通过重点介绍美国的历史文化、风土人情、风俗习惯和语言发展等，帮助

学生拓展有关这些英语国家文化历史发展的知识，提高阅读英文书刊和同英语国家人士交往的能力，从而激发他们的学习兴趣，为进一步学习打下基础；培养学生辨证唯物主义的历史观，增强学生的跨文化意识，从而进一步增强学生的跨文化交际能力。

英文简介（Course Description）：
This course is taught by American professors. Students will have a brief understanding of American culture through teachers' instruction, classroom discussion, group work and after-class assignments. It is designed to cover the basics of American history and development, culture and customs. The course aims to develop students' intercultural communicative skills by broadening their understanding of American culture

-End-

课程号（Course Number）： 03835730
课程名称（Course Title）： 美国文化概览/Introduction to American Culture
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程是为非英语专业学生基础阶段开设的文化专题课，课程类别为本科必修，由外教授课。本课程的目标在于：通过重点介绍美国的历史文化、风土人情、风俗习惯和语言发展等，帮助学生拓展有关这些英语国家文化历史发展的知识，提高阅读英文书刊和同英语国家人士交往的能力，从而激发他们的学习兴趣，为进一步学习打下基础；培养学生辨证唯物主义的历史观，增强学生的跨文化意识，从而进一步增强学生的跨文化交际能力。

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This course is taught by American professors. Students will have a brief understanding of American culture through teachers' instruction, classroom discussion, group work and after-class assignments. It is designed to cover the basics of American history and development, culture and customs. The course aims to develop students' intercultural communicative skills by broadening their understanding of American culture

-End-

课程号（Course Number）： 03835780
课程名称（Course Title）：批判性思维与学术写作/Critical Thinking and Academic Writing
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2

授课教师（Faculty）：张欢瑞 助理研究员 ？Research Associate

先修课程（Prerequisites）：无

中文简介：
本课程将向学生介绍批判性思维与学术写作的要求与规则，关注文本分析、有效论证的建构以及证据和二手资料的使用，讲解写作的基本过程。
学生通过阅读各种文体的具有挑战性的材料以及写作从而强化其批判性思维的能力，提炼其修辞技能，写作过程中着重关注修改和文体风格。

英文简介（Course Description）：
This course introduces students to the demands and conventions of critical thinking and writing. It focuses on analyzing texts, building effective arguments, and using evidence and secondary source materials as well as the instruction on the stages of the writing process, from pre-writing exercises through rough drafts and revisions.

Students enhance their critical thinking abilities by reading and writing challenging material, refine their rhetorical strategies, practice writing processes with special attention to revision and style, and write and read in a variety of genres. Their writing exercise includes formal and informal writing and preparing a final portfolio.

-End-

课程号（Course Number）：03835780
课程名称（Course Title）：批判性思维与学术写作/Critical Thinking and Academic Writing
开课院系（School/Department）：英语语言文学系/English Language and Literature
学分（Credits）：2
授课教师（Faculty）：张欢瑞 助理研究员 ？Research Associate

先修课程（Prerequisites）：无

中文简介：
本课程将向学生介绍批判性思维与学术写作的要求与规则，关注文本分析、有效论证的建构以及证据和二手资料的使用，讲解写作的基本过程。
学生通过阅读各种文体的具有挑战性的材料以及写作从而强化其批判性思维的能力，提炼其修辞技能，写作过程中着重关注修改和文体风格。

英文简介（Course Description）：
This course introduces students to the demands and conventions of critical thinking and writing. It focuses on analyzing texts, building effective arguments, and using evidence and secondary source materials as well as the instruction on the stages of the writing process, from pre-writing exercises through rough drafts and revisions.

Students enhance their critical thinking abilities by reading and writing challenging material, refine their rhetorical strategies, practice writing processes with special attention to revision and style, and write and read in a variety of genres. Their writing exercise includes formal and informal writing and preparing a final portfolio.

-End-

课程号（Course Number）： 03835900
课程名称（Course Title）：高级英语写作/Advanced English Writing
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程为外教授课，旨在通过记叙文、议论文等多题材写作提高学生的英语写作水平及能力，训练学生系统的运用英语词汇，指导学生运用正确合理的语法结构及语言准确用英文表达自己的思想。通过对写作过程的关注，进一步启发学生们创造性思维能力，从而提高学术研究及写作素养。

英文简介（Course Description）：
This course is designed to give students instruction in and opportunities to use a variety of strategies, genres, purposes, and audiences in order to expand and improve students' writing. We will focus on the writing process. Some of the writing you will do will be based on your ability to think critically, creatively, strategically, and reflectively about personal observations, relationships, and experiences. In addition, you will be asked to do academic research and writing.

-End-

课程号（Course Number）： 03835900
课程名称（Course Title）： 高级英语写作/Advanced English Writing
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：

本课程为外教授课，旨在通过记叙文、议论文等多题材写作提高学生的英语写作水平及能力，训练学生系统的运用英语词汇，指导学生运用正确合理的语法结构及语言准确用英文表达自己的思想。通过对写作过程的关注，进一步启发学生们创造性思维能力，从而提高学术研究及写作素养。

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This course is designed to give students instruction in and opportunities to use a variety of strategies, genres, purposes, and audiences in order to expand and improve students' writing. We will focus on the writing process. Some of the writing you will do will be based on your ability to think critically, creatively, strategically, and reflectively about personal observations, relationships, and experiences. In addition, you will be asked to do academic research and writing.

-End-

课程号（Course Number）：03835950
课程名称（Course Title）：高级英语口语/Advanced Oral English
开课院系（School/Department）：英语语言文学系/English Language and Literature
学分（Credits）：2
授课教师（Faculty）：马小琦 讲师 Lecturer

先修课程（Prerequisites）：无

中文简介：
本课程为外教授课，旨在通过课堂讨论，小组活动，口语交流等多种多样的活动提高学生在实际生活中的英语口语应用能力。本课程不仅为学生创造良好的口语交流环境，同时也丰富了学生的文化体验，使学生充分锻炼在各种场景中的英语会话与交际能力。

英文简介（Course Description）：
This class is a dynamic oral English class designed to develop and strengthen language skills through practical in-class discussions, activities, and dialogues. These in-class exercises are complemented by an intensive audio-visual-oral computer program designed to reinforce English communication skills. The purpose of the class is two-fold: to provide students a stimulating environment in which to practice oral English and to allow them the opportunity to interact and gain cultural experience from a native English teacher. With a special emphasis on interactive learning, the overall objectives are for students to improve pronunciation and their ability to express ideas clearly in both formal and informal settings.

One important aspect of the class is that the students get to know each other well, so they can more comfortably communicate in a second language. Through various group and individual activities, students build relationships of trust that allow them to not only increase their second language proficiency, but gain valuable communication

skills. Because the class provides students an opportunity to work in groups, they build a foundation in teamwork. This empowers them with an understanding of how effective interdependence contributes to a successful work environment. environment.

-End-

课程号（Course Number）： 03835950
课程名称（Course Title）： 高级英语口语/Advanced Oral English
开课院系（School/Department）： 英语语言文学系/English Language and Literature
学分（Credits）： 2
授课教师（Faculty）： 马小琦 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
本课程为外教授课，旨在通过课堂讨论，小组活动，口语交流等多种多样的活动提高学生在实际生活中的英语口语应用能力。本课程不仅为学生创造良好的口语交流环境，同时也丰富了学生的文化体验，使学生充分锻炼在各种场景中的英语会话与交际能力。

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One important aspect of the class is that the students get to know each other well, so they can more comfortably communicate in a second language. Through various group and individual activities, students build relationships of trust that allow them to not only increase their second language proficiency, but gain valuable communication skills. Because the class provides students an opportunity to work in groups, they build a foundation in teamwork. This empowers them with an understanding of how effective interdependence contributes to a successful work environment. environment.

-End-

课程号（Course Number）： 03835983
课程名称（Course Title）：世界英语与英语世界/World Englishes and the English World

开课院系（School/Department）：英语语言文学系/English Language and Literature
学分（Credits）：2
授课教师（Faculty）：马小琦 讲师 Lecturer，徐志长(校外) 待定

先修课程（Prerequisites）：大学英语C级课程

中文简介：
本课程主要介绍“世界英语”(World Englishes)这门学科的发展现状，以及理论与实践。课程内容主要包括英国英语、美国英语、澳大利亚英语、以及其它国家和地区（包括东南亚各国和中国）的英语发展和使用。本课程的目的是使学生能够了解世界英语的基本理论和在英语世界(the English world)的本土化发展和使用。本课程的教学要求是，学生具有本科以上的英语基础，并了解一些各国英语变体（例如英国英语，美国英语和中国英语）之间的差异和相似之处。

英文简介（Course Description）：
This course introduces the developments of the discipline of World Englishes, and relevant theories and practices. It covers British English, American English, Australian English, and other Englishes, including major Southeast Asian Englishes and Chinese English, in terms of their use and development. The major objective of this course is to enable students to understand fundamental theories of World Englishes and how they are nativised and used in local contexts. The requirement for taking the course is that students should have an English proficiency at or above the tertiary level, and a basic understanding of the variations and similarities among major English varieties (e.g., British English, American English and Chinese English).

-End-

课程号（Course Number）：04130440
课程名称（Course Title）：瑜伽/Yoga
开课院系（School/Department）：体育教研部/Section of Physical Culture
学分（Credits）：1
授课教师（Faculty）：亓昕 教学教授

先修课程（Prerequisites）：无

中文简介：
一、 课程介绍
1．现代瑜伽是通过瑜伽姿势、呼吸与调息、冥想等几大部分内容，首先着眼于身体的强健，并注重自我意识引导，使之学会控制身体活动及情绪，由内而外地通过发展个体存在的潜在能力实现自我完美的过程。现代瑜伽是对内部存在的完整性或统一性的体会，它是全民健身优选的一种修身养性的体育活动。本课程实践教学部分主要教授瑜伽基本练习方法，包括瑜伽呼吸、体式练习、调息练习、瑜伽休息术。通过呼吸运动与体位法相结合，直接对内部器官和系统加以按摩和运动，健身祛病、修塑体形。通过瑜伽静坐冥想，使身体健康与精神旺盛，消除紧张

情绪，使心神宁定、智力增长。本课程理论教学部分主要教授瑜伽的定义、起源、发展阶段、经络及脉轮，以及瑜伽如何促进现代人身心健康等内容。
2．安全注意事项
（1）开始练习体式之前，胃、膀胱和大肠最好排空，最好在进餐后三至四个小时之后进行练习；练习后可以多喝水，至少半小时后喝水进食，并注重营养均衡。
（2）不宜穿太紧的服饰练习，着装舒适透气有弹性即可，建议穿着上紧下松的棉氨纶服饰；练习时一般不穿鞋，可着棉袜；避免戴紧绷约束的饰物。
（3）学习瑜伽体式时不要勉强达成某种姿势，以免造成不必要的伤害；练习时间不在长而在专注，专注并且持之以恒的练习才能收到预期的功效。

二、课程任务
1．掌握瑜伽的基本体位法和调息法，培养学生健康生活的观念。
2．掌握一项终身体育锻炼技能，并在实践中发展学生的全面素质。

英文简介（Course Description）：
1.　the introduction of the course

1） Modern yoga is through yoga postures, breathing and pranayama, meditation, and so most of the content, first look at the body strong, and pay attention to self-consciousness guidance, so that it can learn to control physical activities and emotion, and realize the perfect process from inside and outside by developing the potential ability of individual existence. Modern yoga is an experience of the integrity or unity of the internal existence. It is a kind of physical exercise that is preferred by the national fitness program. The practice teaching of this course mainly teaches the basic practice of yoga, including yoga breathing, postures, pranayama and yoga rest. Through the combination of breathing exercises and body position, massage and exercise directly to the internal organs and systems. Through meditation, we can make our body healthy and energetic, dispel nervousness and make our mind steady and intelligence grow. The theory teaching section of this course mainly teaches the definition, origin, development stage, meridian and chakra of yoga, and how yoga promotes the physical and mental health of modern people.

2)　safety precautions
A The stomach, bladder and large intestine are best emptied before starting the exercise. It is best to exercise after three to four hours after the meal. After practice, you can drink more water, drink water after at least half an hour, and pay attention to the balance of nutrition.

B Not to wear too tight clothing practice, clothing comfortable and breathable and flexible, it is recommended to wear tightened cotton spandex clothing; practice usually without shoes, can be cotton socks; avoid wearing tightly bound accessories.

C Do not reluctantly achieve some kind of posture when learning yoga pose, so as to avoid unnecessary injury; practice time is not long and concentrating, and consistently

practice can receive the desired effect.

2. curriculum task

1） Master the basic position and pranayama method of yoga, and cultivate students' concept of healthy life.

2) Master a lifelong physical training skill and develop the overall quality of students in practice.

-End-

课程号（Course Number）：04130440
课程名称（Course Title）：瑜伽/Yoga
开课院系（School/Department）：体育教研部/Section of Physical Culture
学分（Credits）：1
授课教师（Faculty）：亓昕 教学教授

先修课程（Prerequisites）：无

中文简介：
一、 课程介绍
1．现代瑜伽是通过瑜伽姿势、呼吸与调息、冥想等几大部分内容，首先着眼于身体的强健，并注重自我意识引导，使之学会控制身体活动及情绪，由内而外地通过发展个体存在的潜在能力实现自我完美的过程。现代瑜伽是对内部存在的完整性或统一性的体会，它是全民健身优选的一种修身养性的体育活动。本课程实践教学部分主要教授瑜伽基本练习方法，包括瑜伽呼吸、体式练习、调息练习、瑜伽休息术。通过呼吸运动与体位法相结合，直接对内部器官和系统加以按摩和运动，健身祛病、修塑体形。通过瑜伽静坐冥想，使身体健康与精神旺盛，消除紧张情绪，使心神宁定、智力增长。本课程理论教学部分主要教授瑜伽的定义、起源、发展阶段、经络及脉轮，以及瑜伽如何促进现代人身心健康等内容。
2．安全注意事项
（1）开始练习体式之前，胃、膀胱和大肠最好排空，最好在进餐后三至四个小时之后进行练习；练习后可以多喝水，至少半小时后喝水进食，并注重营养均衡。
（2）不宜穿太紧的服饰练习，着装舒适透气有弹性即可，建议穿着上紧下松的棉氨纶服饰；练习时一般不穿鞋，可着棉袜；避免戴紧绷约束的饰物。
（3）学习瑜伽体式时不要勉强达成某种姿势，以免造成不必要的伤害；练习时间不在长而在专注，专注并且持之以恒的练习才能收到预期的功效。

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1．掌握瑜伽的基本体位法和调息法，培养学生健康生活的观念。
2．掌握一项终身体育锻炼技能，并在实践中发展学生的全面素质。

英文简介（Course Description）：

1. the introduction of the course

1） Modern yoga is through yoga postures, breathing and pranayama, meditation, and so most of the content, first look at the body strong, and pay attention to self-consciousness guidance, so that it can learn to control physical activities and emotion, and realize the perfect process from inside and outside by developing the potential ability of individual existence. Modern yoga is an experience of the integrity or unity of the internal existence. It is a kind of physical exercise that is preferred by the national fitness program. The practice teaching of this course mainly teaches the basic practice of yoga, including yoga breathing, postures, pranayama and yoga rest. Through the combination of breathing exercises and body position, massage and exercise directly to the internal organs and systems. Through meditation, we can make our body healthy and energetic, dispel nervousness and make our mind steady and intelligence grow. The theory teaching section of this course mainly teaches the definition, origin, development stage, meridian and chakra of yoga, and how yoga promotes the physical and mental health of modern people.

2) safety precautions

A The stomach, bladder and large intestine are best emptied before starting the exercise. It is best to exercise after three to four hours after the meal. After practice, you can drink more water, drink water after at least half an hour, and pay attention to the balance of nutrition.

B Not to wear too tight clothing practice, clothing comfortable and breathable and flexible, it is recommended to wear tightened cotton spandex clothing; practice usually without shoes, can be cotton socks; avoid wearing tightly bound accessories.

C Do not reluctantly achieve some kind of posture when learning yoga pose, so as to avoid unnecessary injury; practice time is not long and concentrating, and consistently practice can receive the desired effect.

2. curriculum task

1） Master the basic position and pranayama method of yoga, and cultivate students' concept of healthy life.

2) Master a lifelong physical training skill and develop the overall quality of students in practice.

-End-

课程号（Course Number）：04130630
课程名称（Course Title）：汉字太极与养生课/Taiji and Health Preserving through Chinese Characters
开课院系（School/Department）：体育教研部/Section of Physical Culture
学分（Credits）：1
授课教师（Faculty）：李朝斌 副教授 Associate Professor

先修课程（Prerequisites）：无

中文简介：
一、课程介绍
1.汉字太极是以太极为理念，根据人体硬件的升、降、开、合，软件气机的升降和意识的收放，以阴阳变换为总纲。达到人体身、心、灵、慧动态平衡，眼、耳、鼻、舌、身、意六根归一的和谐状态。汉字太极把文化、修身、音乐、创新融为一体，是度文化性、哲学性、艺术性的传统体育项目。
本课程是言传和身教，言传；每堂课前25分钟读经典著作，教材；大学、道德经、金刚经、心经等经典。诵读后学生针对每一章讨论5分钟，要求；学生在讨论的过程中要结合自己的学习和生活。教师提问5分钟，教师提出问题全班同学共同讨论。身教；教师教授躯体间架结构的同教师给每位同学捏架子。教授汉字太极的基本动作(手、眼、身、法、步，基本笔划，简单的汉字，汉字的基本笔划和手、眼、身、法、步的配合)。
通过汉字太极与养生课的学习；使学生了解言传和身教之间的关系，了解民族传统体育运动，使学生德、智、体、美有机的结合，达到修身养性之目的。
通过汉字太极与养生课的学习；使学生树立正确的人生观和价值观，把握自己生命的状态，使学生觉知常无欲以观其妙；常有欲以观其徼在生活当中的应用。
通过汉字太极与养生的学习；能够提高学生身体的灵活性、协调性、柔韧性达到增进健康、激发活力、愉悦身心的目的。
通过汉字太极与养生的学习；使学生能够根据自己情绪的变化每天书写不同的汉字，练习不同的套路。使每个人都能结合自己的生理状况和特点找到自己的运动形式。
2、安全注意事项
（1）穿宽松的服装（如；传统的养生服装或运动服）
（2）要求同学要注意自身的生理安全，如有胸闷、心慌、头痛等生理等状况，向老师提出。老师根据情况安排。
二、课程任务
1、培养学生终身体育意识，掌握民族传统体育的理念和汉字文化体系。
2、身体力行掌握和做到准确、实效、功夫上身。
3、提高自身修养，完善自身人格。

英文简介（Course Description）：
The Syllabus for Chinese Character Tai Chi（Hanzi Taiji） and Health- preserving Course

1. Introduction of the course
i. The Chinese character Tai Chi is based on Taiji, according to the rise, fall, opening and closing of human body hardware, the fluctuation of software breath and the retraction of consciousness, with Yin and Yang transformation as the general

principles. To achieve the dynamic balance of body, heart, spirit and wisdom, and achieve the eye, ear, nose, tongue, body, consciousness six normalization harmonious state. Chinese character Tai Chi combines culture, self-cultivation, music and innovation. It is a traditional sport with cultural, philosophical and artistic characteristics. This course consists of teaching by word and example. Teaching by words: read classics 25 minutes before each class. Textbooks: classics, such as The Great Learning, Tao Te Ching, Diamond Sutra, and Heart Sutra. After reading, students discuss 5 minutes for each chapter. Students should combine their study and life in the process of discussion. Teachers ask questions for 5 minutes, and the whole students discuss them together. Teaching by examples: The teacher teaches the structure of the body, and the teacher kneads skeleton for each student. Teaching the basic movements of Chinese character Tai Chi (hand, eye, body, method, step, basic stroke, simple Chinese character, basic strokes of Chinese characters and coordination of hand, eye, body, method and step). Through the study of Chinese character Tai Chi and the course of health care, the students can understand the relationship between the words and examples, understand the traditional sports, and combine the students' morality, intelligence, body and beauty, so as to achieve the purpose of cultivation.

Through the study of Chinese character Tai Chi and the course of health care, the students can set up a correct outlook on life and values and grasp the state of their own life, enable students to realize that "without desire to observe things to small to micro, with desire to observe their laws and purposes" and its application in life.

Through the study of Chinese character Tai Chi and the course of health care, it can improve the flexibility, coordination and suppleness of the students' body, and achieve the purpose of improving health, stimulating vitality and pleasing the body and mind.

Through the study of Chinese character Tai Chi and the course of health care, students can write different Chinese characters and practice different routines every day according to their own emotional changes. So that everyone can combine their own physiological conditions and characteristics to find their own form of movement.

ii. Safety Precautions

a) Wear loose clothing (e.g., traditional health clothes or sportswear)

b) Students are required to pay attention to their physical safety, such as chest tightness, panic, headache and other physiological conditions. The teacher arranges it according to the situation

2. Curriculum Task

i. Cultivate students' sense of lifelong physical education, grasp the concept of traditional national sports and culture system of Chinese characters

ii. Practice and grasp accurately and effectively.

iii. Improve self-cultivation and improve personal personality

-End-

课程号（Course Number）：04130630
课程名称（Course Title）：汉字太极与养生课/Taiji and Health Preserving through Chinese Characters
开课院系（School/Department）：体育教研部/Section of Physical Culture
学分（Credits）：1
授课教师（Faculty）：李朝斌 副教授 Associate Professor

先修课程（Prerequisites）：无

中文简介：
一、课程介绍
1.汉字太极是以太极为理念，根据人体硬件的升、降、开、合，软件气机的升降和意识的收放，以阴阳变换为总纲。达到人体身、心、灵、慧动态平衡，眼、耳、鼻、舌、身、意六根归一的和谐状态。汉字太极把文化、修身、音乐、创新融为一体，是度文化性、哲学性、艺术性的传统体育项目。
本课程是言传和身教，言传；每堂课前25分钟读经典著作，教材；大学、道德经、金刚经、心经等经典。诵读后学生针对每一章讨论5分钟，要求；学生在讨论的过程中要结合自己的学习和生活。教师提问5分钟，教师提出问题全班同学共同讨论。身教；教师教授躯体间架结构的同教师给每位同学捏架子。教授汉字太极的基本动作(手、眼、身、法、步，基本笔划，简单的汉字，汉字的基本笔划和手、眼、身、法、步的配合)。
通过汉字太极与养生课的学习；使学生了解言传和身教之间的关系，了解民族传统体育运动，使学生德、智、体、美有机的结合，达到修身养性之目的。
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通过汉字太极与养生的学习；能够提高学生身体的灵活性、协调性、柔韧性达到增进健康、激发活力、愉悦身心的目的。
通过汉字太极与养生的学习；使学生能够根据自己情绪的变化每天书写不同的汉字，练习不同的套路。使每个人都能结合自己的生理状况和特点找到自己的运动形式。
2、安全注意事项
（1）穿宽松的服装（如；传统的养生服装或运动服）
（2）要求同学要注意自身的生理安全，如有胸闷、心慌、头痛等生理等状况，向老师提出。老师根据情况安排。
二、课程任务
1、培养学生终身体育意识，掌握民族传统体育的理念和汉字文化体系。
2、身体力行掌握和做到准确、实效、功夫上身。
3、提高自身修养，完善自身人格。

英文简介（Course Description）：
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1. Introduction of the course
i. The Chinese character Tai Chi is based on Taiji, according to the rise, fall, opening and closing of human body hardware, the fluctuation of software breath and the retraction of consciousness, with Yin and Yang transformation as the general

principles. To achieve the dynamic balance of body, heart, spirit and wisdom, and achieve the eye, ear, nose, tongue, body, consciousness six normalization harmonious state. Chinese character Tai Chi combines culture, self-cultivation, music and innovation. It is a traditional sport with cultural, philosophical and artistic characteristics. This course consists of teaching by word and example. Teaching by words: read classics 25 minutes before each class. Textbooks: classics, such as The Great Learning, Tao Te Ching, Diamond Sutra, and Heart Sutra. After reading, students discuss 5 minutes for each chapter. Students should combine their study and life in the process of discussion. Teachers ask questions for 5 minutes, and the whole students discuss them together. Teaching by examples: The teacher teaches the structure of the body, and the teacher kneads skeleton for each student. Teaching the basic movements of Chinese character Tai Chi (hand, eye, body, method, step, basic stroke, simple Chinese character, basic strokes of Chinese characters and coordination of hand, eye, body, method and step). Through the study of Chinese character Tai Chi and the course of health care, the students can understand the relationship between the words and examples, understand the traditional sports, and combine the students' morality, intelligence, body and beauty, so as to achieve the purpose of cultivation.

Through the study of Chinese character Tai Chi and the course of health care, the students can set up a correct outlook on life and values and grasp the state of their own life, enable students to realize that "without desire to observe things to small to micro, with desire to observe their laws and purposes" and its application in life.

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Through the study of Chinese character Tai Chi and the course of health care, students can write different Chinese characters and practice different routines every day according to their own emotional changes. So that everyone can combine their own physiological conditions and characteristics to find their own form of movement.

ii. Safety Precautions

a) Wear loose clothing (e.g., traditional health clothes or sportswear)

b) Students are required to pay attention to their physical safety, such as chest tightness, panic, headache and other physiological conditions. The teacher arranges it according to the situation

2. Curriculum Task

i. Cultivate students' sense of lifelong physical education, grasp the concept of traditional national sports and culture system of Chinese characters

ii. Practice and grasp accurately and effectively.

iii. Improve self-cultivation and improve personal personality

-End-

课程号（Course Number）：04130721
课程名称（Course Title）：骑行老北京城：探索千年古都回响/cycling in ancient Beijing city: Exploring the echo of one-thousand-year old capital
开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：卢福泉 副教授 Associate Professor

先修课程（Prerequisites）：面对外国和境外本科生和研究生，没有先修课程要求，但要求选课学生会骑车，掌握基本骑行技术和技巧，且身体体能能应对较长距离的骑行。

Undergraduates and graduates who prefer field trip to indulge Beijing's history and culture, as a stranger to the city. Cycling skills and average fitness level to ride a long distance are pre-requisites.

中文简介：
课程简介

本课程是通过骑行，探索老北京城作为近千年的历史文化古都的课程。在北京城规划6条具有代表性的骑行路线每条线路包含宫殿、博物馆、寺庙、公园、剧院，河流和湖泊等数十处值得游览的景点，探索北京古城作为金元尤其是明清都城一共869年的悠久历史和丰富多彩的文化。这些线路包括：

探索北京城二环：故宫及明清都城外城
觉醒的红色征途：北大在新民主主义革命初期的贡献
梨园之旅：京剧文化之旅
东城胡同行宫、府邸、历史名人故居之旅
西城寻根之旅：金元遗迹
北京中轴线之旅：最佳风水线路

先决条件/目标受众
课程面对更喜欢实地考察的本科生和研究生，愿意沉迷于北京的历史和文化的城市访客。 骑自行车的技能和中等健康水平是先决条件。

课程进行
课程为期4周，每天4小时（周二和周五下午，可能会有变动），每周两次，共计32课时。 校园第一节课和最后一节课，其他6节课是骑自行车实地考察和讨论。

作业（论文或其他形式）
在每次单车旅程中，学生可能需要提前做研究，对骑行停靠点的历史和文化进行陈述。
每个学生期末完成一个小论文，对历史和文化的反思和想法将印在论文集中。
每个学生/学生小组将被指派在路线的其中一个地点做一个简短的介绍。
每名学生需提交3-5张照片打印骑行旅程相册。

评价详情

自行车实地考察完成、自行车路线停靠点历史文化的称述，成占总分的60%。 40% 的分数用于课堂上的论文展示。

英文简介（Course Description）：

course introduction

This course is a course to explore the old Beijing city as an ancient capital with prefunded history and culture for nearly a thousand years through cycling. listening the echo of ancient Beijing City, as the Capital of Jin, Yuan, especially Ming and Qing Dynasty of 869 years, by planning 6 representative cycling routes in which contains dozens of worth visiting places including palace, museums, temples, parks, theaters, rivers and lakes. these routes listed as below:

Exploring the Beijing city 2nd ring: Forbidden City and outer city of Ming and Qing Dynasty Capital

The Awakening Red Journey: The contribution of beida at the early of New democratic revolution

the journey of Liyuan: the Beijing opera culture tour.

Journey of palace, Mansion, and historical celebrity former residence in Dongche Hutong

The journey of in searching of origin in Xicheng：the ruins of Jin and Yuan Dynasty

The journey of Central Axis Tour of Beijing city: the Best Feng Shui line

Pre-requisites /Target audience

Undergraduates and graduates who prefer field trip to indulge Beijing’s history and culture, as a stranger to the city. Cycling skills and average fitness are pre-requisites.

Proceeding of the Course

The course is a four-week course, 4 hours each day (on Tuesday and Friday afternoon, might be subjected to change.) , twice a week and totally 32 teaching hours. The first and last class in campus, the other 6 are cycling field trip journeys.

Assignments (essay or other forms)

During every cycling journey, presentation of assigned stop point was required to be made.

Essay will be assigned upon each student and reflections and thoughts will be printed in essay collection.

Each student/students’ group will be assigned to make a short presentation on one of the spots of the routes.

Each students are required to submit 3-5 photos to print the photo album of the cycling journey.

Evaluation Details

Cycling field trips made, cycling routes stop point presentation done account for 60% of the total score. 40% of the score goes to the essay presentation at the lass class.

-End-

课程号（Course Number）：04130721
课程名称（Course Title）：骑行老北京城：探索千年古都回响/cycling in ancient Beijing city: Exploring the echo of one-thousand-year old capital
开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：卢福泉 副教授 Associate Professor

先修课程（Prerequisites）：面对外国和境外本科生和研究生，没有先修课程要求，但要求选课学生会骑车，掌握基本骑行技术和技巧，且身体体能能应对较长距离的骑行。

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中文简介：
课程简介

本课程是通过骑行，探索老北京城作为近千年的历史文化古都的课程。在北京城规划6条具有代表性的骑行路线每条线路包含宫殿、博物馆、寺庙、公园、剧院，河流和湖泊等数十处值得游览的景点，探索北京古城作为金元尤其是明清都城一共869年的悠久历史和丰富多彩的文化。这些线路包括：

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梨园之旅：京剧文化之旅
东城胡同行宫、府邸、历史名人故居之旅
西城寻根之旅：金元遗迹
北京中轴线之旅：最佳风水线路

先决条件/目标受众
课程面对更喜欢实地考察的本科生和研究生，愿意沉迷于北京的历史和文化的城市访客。 骑自行车的技能和中等健康水平是先决条件。

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课程为期4周，每天4小时（周二和周五下午，可能会有变动），每周两次，共计32课时。 校园第一节课和最后一节课，其他6节课是骑自行车实地考察和讨论。

作业（论文或其他形式）
在每次单车旅程中，学生可能需要提前做研究，对骑行停靠点的历史和文化进行陈述。
每个学生期末完成一个小论文，对历史和文化的反思和想法将印在论文集中。
每个学生/学生小组将被指派在路线的其中一个地点做一个简短的介绍。
每名学生需提交3-5张照片打印骑行旅程相册。

评价详情
自行车实地考察完成、自行车路线停靠点历史文化的称述，成占总分的60%。 40% 的分数用于课堂上的论文展示。

英文简介（Course Description）：
course introduction

This course is a course to explore the old Beijing city as an ancient capital with prefunded history and culture for nearly a thousand years through cycling. listening the echo of ancient Beijing City, as the Capital of Jin, Yuan, especially Ming and Qing Dynasty of 869 years, by planning 6 representative cycling routes in which contains dozens of worth visiting places including palace, museums, temples, parks, theaters, rivers and lakes. these routes listed as below:

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Journey of palace, Mansion, and historical celebrity former residence in Dongche Hutong
The journey of in searching of origin in Xicheng：the ruins of Jin and Yuan Dynasty
The journey of Central Axis Tour of Beijing city: the Best Feng Shui line

Pre-requisites /Target audience
Undergraduates and graduates who prefer field trip to indulge Beijing’s history and culture, as a stranger to the city. Cycling skills and average fitness are pre-requisites.

Proceeding of the Course
The course is a four-week course, 4 hours each day (on Tuesday and Friday afternoon, might be subjected to change.) , twice a week and totally 32 teaching hours. The first and last class in campus, the other 6 are cycling field trip journeys.

Assignments (essay or other forms)
During every cycling journey, presentation of assigned stop point was required to be made.
Essay will be assigned upon each student and reflections and thoughts will be printed

in essay collection.
Each student/students' group will be assigned to make a short presentation on one of the spots of the routes.
Each students are required to submit 3-5 photos to print the photo album of the cycling journey.

Evaluation Details
Cycling field trips made, cycling routes stop point presentation done account for 60% of the total score. 40% of the score goes to the essay presentation at the lass class.

-End-

课程号（Course Number）： 04330021
课程名称（Course Title）：戏曲与中国传统文化/Drama and Chinese Tradition Culture
开课院系（School/Department）： 艺术学院/School of Arts
学分（Credits）： 2
授课教师（Faculty）： 陈均 教学教授

先修课程（Prerequisites）： 无

中文简介：
戏曲是中国传统文化的精粹之一，在现存的诸多戏曲文本及舞台表现中，不仅蕴藏着中国古代及近现代生活的方方面面，而且亦是中国人之情感、情趣与思想世界的完整呈现。本课程通过对戏曲文本的解读，对戏曲舞台影像的分析与展示，来揭示戏曲与中国传统文化的密切关系。

英文简介（Course Description）：
Opera is one of the best traditional Chinese culture, in many existing drama and stage performance, not only containing Chinese ancient and modern aspects of life, but also presenting the emotion, Chinese sentiment and ideas in the world. In this course, through the interpretation of the opera text, you will learn to analyze and display the opera stage imagery, then reveal the close relationship between opera and traditional Chinese culture.

-End-

课程号（Course Number）： 04330355
课程名称（Course Title）：艺术乡建：乡土中的文化创意/Art Empowerment: Culture and Art in Rural Revitalization
开课院系（School/Department）： 艺术学院/School of Arts
学分（Credits）： 1
授课教师（Faculty）： 向勇 教授 Professor

先修课程（Prerequisites）：无。

中文简介：

本课程为暑期实地研学通识课，以“艺术乡建”为核心主题，立足乡村振兴战略，打通高校学术资源与乡村实践场景的深度联结，助力学生理解文化创意与乡村发展的融合逻辑。本课程内容分为三大模块：理论授课模块，通过内容系统讲解艺术乡建的理论方法、乡村文化产业运营、艺术赋能路径及乡土创意实践，搭配经典案例解析与思考题引导深度思考；实地参访模块，深入各地艺术乡建的典型村落，聚焦整村运营、农文旅融合等核心模式，通过实地观察、交流访谈掌握实操经验；研讨与报告模块，围绕调研方向、本地化可持续性等议题开展分组研讨，形成调研计划、创意方案等成果。课程注重理论与实践结合，采用案例解析、沉浸式学习、分组协作等教学方式，培养学生的跨学科思维、实地调研能力与创意落地能力。课程要求学生全程参与各环节，完成小组协作成果，成绩由实地参访表现、理论掌握度、研讨成果及平时表现综合评定。通过本课程，学生将近距离接触艺术乡建实践现场，深化对乡村振兴的认知，积累相关研究与实践经验，为未来参与乡村建设、文化创意等领域奠定基础。

英文简介（Course Description）：

This is a summer field study general education course centered on Art-led Rural Reconstruction. Grounded in the national Rural Revitalization Strategy, it builds a deep connection between university academic resources and real rural practice scenarios, and helps students understand the integrated logic of cultural creativity and rural development.

The course is structured into three modules: Theoretical Teaching Module: It systematically covers the theories and methods of art-led rural reconstruction, rural cultural industry operation, art-empowered development paths, and local creative practices. Guided by classic case studies and reflective questions, it encourages in-depth thinking; Field Visit Module: It takes students into typical villages engaged in art-led rural reconstruction, focusing on core models such as village-level integrated operation and the integrated development of agriculture, culture and tourism. Through on-site observation, interviews and exchanges, students gain hands-on practical experience; Seminar & Report Module: Group discussions are organized around research themes, localization and sustainability, through which students develop research proposals, creative plans and other deliverables.

Emphasizing the integration of theory and practice, the course adopts case analysis, immersive learning and group collaboration to cultivate students’ interdisciplinary thinking, field research competence and creative implementation capability. Students are required to participate in the whole process and complete group projects. Their final grade will be comprehensively evaluated based on field performance, theoretical mastery, seminar outputs and regular participation.

Upon completing this course, students will have close contact with frontline practices of art-led rural reconstruction, deepen their understanding of rural revitalization, accumulate relevant research and practical experience, and lay a solid foundation for future engagement in rural development, cultural creativity and related fields.

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课程号（Course Number）：04330881
课程名称（Course Title）：基本乐理与管弦乐基础/Basic Theory of Music and The Basics of Orchestral Music
开课院系（School/Department）：艺术学院/School of Arts
学分（Credits）：2
授课教师（Faculty）：马清 教授 Professor

先修课程（Prerequisites）：无

中文简介：
本课程系统地讲授音乐基本理论，包括乐音体系、音律、记谱法、节奏与节拍、音程、和弦、调式、转调、乐曲的基本形式、初步的和声与复调，以及近现代音乐理论；注重理论联系实际，在分析作品同时介绍管弦乐队及各类乐器的功能特点，并结合识谱及简单电子钢琴弹奏。

英文简介（Course Description）：
1.Musical Theory(west and Chinese): ton, rhythm, meter, scale, interval, major, miner, chord, form, harmony and polyphony, etc. 2.Orchestral Basis: analyze and appreciate symphony and piano/violin concerto. These composers include: S.Bach, Mozert, Beethoven, Chopin, A.Bruckner, J.Brahms, P. Tschaikowsky,G.Mahler, Rachmaninov,Shostakovich and S.Barber,etc.

-End-

课程号（Course Number）：04450001
课程名称（Course Title）：乐韵中国：流行歌曲与社会变迁/Grooving China: Pop Music and Social Transformation
开课院系（School/Department）：教务部
学分（Credits）：3
授课教师（Faculty）：赵昀晖 副教授 Associate Professor

先修课程（Prerequisites）：无

中文简介：
本课程是为北大暑期学校来华的各国留学生开设的了解中国的通识课。
“新文化运动”至今，中国在政治经济、文化思潮、社会热点、思维方式等各方面，历经百年变迁。在此过程中，中文流行歌曲以其兼容并包的词曲风格、丰富各异的演唱方式，紧密地与变迁中的中国相关，广泛地反映了当时人们的风貌心理、社会的热点焦点，鲜明而深刻地展现了时代走向。

本课程从纵向的历史发展以及其中的几个发展节点着手，兼顾不同时代的流行歌曲介绍，以及同一曲风的风格发展透视，内容包括时代背景介绍、歌曲聆听欣赏、歌词文本分析、社会问题链接等，旨在使学生通过本门课程的学习，既能从流行歌曲中放松身心，更能了解百年中国的基本发展和变迁，以及相关的社会问题。

英文简介（Course Description）：
This general-education course welcomes PKU's Summer School international students who are eager to explore and understand China better.

Since the New Culture Movement, China has undergone over a hundred years of change ranging from politics, economy, culture, to social issues and ways of thinking. Throughout this process, Chinese pop songs have been closely associated with the country's changes thanks to the genre's all-inclusive lyrical and musical styles, as well as its shifting presentations. Meanwhile, by reflecting the spirit and the hot topics of the times, pop music also seemed to suggest the direction in which the specific eras were going.

In this course we will trace the historical development of pop music in China and zero in on selected focal points. Students will be introduced to pop songs from various periods and trained to analyze the development of particular styles. We will explore the historical backgrounds, listen to a selection of iconic pop songs, analyze the text of the lyrics, and connect the songs to relevant social issues. Through the lens of pop music, we seek to understand the fundamental changes and development that have taken place in China's recent past in a relatively relaxed manner.

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课程号（Course Number）： 04833310
课程名称（Course Title）：集成电路逻辑综合实验/logic synthesis labs
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 贾嵩 研究员 Research Fellow，崔莹莹 工程师 Engineer

先修课程（Prerequisites）： 数字逻辑电路

中文简介：
逻辑综合是数字集成电路设计优化的重要手段，逻辑综合通过RTL源代码转换成门级网表的过程实现数字设计向工艺库的映射。
在综合过程中，优化进程完成库单元的配置组合，使电路能最好地满足设计的功能、时序和面积的要求。逻辑综合为约束驱动（constraint driven），给定的约束条件是综合的目标。约束一般是在对整个系统进行时序分析得到的，综合工具会对电路进行优化以满足约束的要求。

本课程安排10个实验，通过实验内容，学习掌握逻辑综合的基本知识和实际操作。通过课程学习，学生可以掌握逻辑综合的基本方法、工具使用、优化技巧等知识。
本课程的先修课为数字逻辑电路。
本课程为实验课，上课时间安排在两周，一共10次课，每次上机4小时。

英文简介（Course Description）：
Logic synthesis is an important method to design a digital integrated circuits. The process will translate the RTL code to gate level netlist and map the design to technology library.
Logic systhesis is the transformation of an idea into a manufacturable device to carry out an intend function. This involves three main steps:
*Design is broken down into sets of timing paths
*The dely of each path is calculated
*All path delays are checked to see if timing constraints have been met.
There are ten labs in the class. Students will learn the process and skill of logic synthesis.
The students are expected to have studied "logic circuits" before.

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课程号（Course Number）：04833360
课程名称（Course Title）：情感智能机器人引论/Introduction to Affective Intelligent Robotics
开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：王韬 研究员 Research Fellow

先修课程（Prerequisites）：

中文简介：
强人工智能是人们长久以来孜孜以求的一个理想，智能机器人是这个理想的实物寄托，以各种形态出现在众多科幻文学、影视作品当中。智能机器人能够理解人类语言，听懂人的心声；能够看着人的眼睛，认知周围的环境；有感觉，更有反应和思考，还能够通过学习获得经验和成长。而情感能力对于智能机器人至关重要。如果缺乏情感理解和表达的能力，将很难使智能机器人与人自然交互，更不能主动识别人的负面情感并做出积极反应。

本门课程对情感智能机器人加以介绍，展示机器人的运动、感知、控制、智能以及体系结构，讲解情感的作用、表达、识别、调节与心理学基础，讨论机器人通过各种感知方式对人类的情感识别模型，最后探索机器人的情感调节方法。本门课程还包含搭建机器人的实践环节。

本门课程是面向全校本科生开设的一门引论课程，并不涉及复杂的数学、物理推理与运算，也不要求过高的计算机程序设计技能。主要探讨情感智能机器人的概念、原理、模型、实现，希望选课同学能够对情感智能机器人有全面及较深入的了解，为进一步学习或进行相关应用打下坚实的基础。

本门课程采用平时课堂成绩与期末论文相结合的方式进行考核。

英文简介（Course Description）：

Strong artificial intelligence is one of the long-cherished dream of human being, while intelligent robots are its ideal physical sustenance, which have been presented in various forms in a number of science fiction literatures and films. Intelligent robots can understand the human language, understand the human voice; can look at people's eyes, cognize around the environment; can feel, react and think; and can also gain experience and grow through learning. The ability of handling affect is critical to intelligent robots. When lack of understanding and express affect, it will be difficult for intelligent robots to do natural interaction with human beings, difficult to take the initiative to identify people's negative emotions and make a positive response.

This course conducts an introduction to affective intelligent robotics, introduces the movement, perception, control, intelligence and architecture of the robot, explains the role, expression, identification, adjustment of the affect, and the corresponding psychology foundation. This course also discusses the recognition models of human affect through various sensing methods, and finally explores the ways of doing affect adjustment. This course also includes the practice of building robots.

This course is an introductory course for undergraduate students. It does not involve complex mathematics, physical reasoning and computing, and does not require too much computer programming skills. This course mainly discusses the concept, principle, model and realization of affective intelligent robotics. Hope that the involved students can have a comprehensive and deep understanding of affective intelligent robotics, lay a solid foundation for further study or related applications.

The course employs a combination of the usual classroom performance and the grade of the essay to evaluate the final score of a student.

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课程号（Course Number）： 04833730
课程名称（Course Title）：集成电路的物理设计实验/Place and route labs
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 贾嵩 研究员 Research Fellow，叶乐 副教授 Associate Professor

先修课程（Prerequisites）： 数字逻辑电路

中文简介：

物理设计是数字集成电路设计实现过程，通常称为布局布线(Place-and-Route)，通过将门级网表进行布局布线等过程，实现数字设计由门级向物理版图的映射。随着集成电路工艺的不断发展，深亚微米集成电路物理设计给设计者提出了新的挑战，比如在时序收敛、电压降、串扰分析等方面带来设计挑战。
集成电路的物理设计的输入文件是逻辑综合之后的门级网表，经过布图规划、布局、时钟树综合、布线、版图检查等过程，输出用于半导体加工的版图数据。
布图规划阶段：布图规划主要包括芯片的大小 (area)、输入输出I／O单元的规划、宏模块的规划和电源规划等；
布局阶段：布局的任务主要是对标准单元和宏模块的布局。为了更好地实现时序收敛需要采用时序驱动的布局方式。此外，还包括对版图进行拥塞分析；
时钟树综合：时钟网络在所有信号网络中负载最大、走线最长、要求最苛刻，因此时钟树综合的质量直接影响芯片的性能。时钟树综合包括设置、综合、优化等过程；
布线阶段：布局和时钟树综合完成后，就需要各个模块和单元通过具体的互连线连接起来，完成所有信号的互联，从而才可实现芯片的功能。具体的实施包括全局布线、详细布线和布线修正等部分，布线的效果依赖于布局的方案以及工具本身的算法。
本课程安排10个实验，通过实验内容，学习掌握集成电路物理设计的基本知识和实际操作。通过课程学习，学生可以掌握布局布线的基本方法、工具使用、优化技巧等知识。
本课程的先修课为数字逻辑电路。
本课程为实验课，上课时间安排在两周，一共10次课，每次上机4小时。

英文简介（Course Description）：
Physical design is the implementation process for digital ICs. It is also refered as Place-and-Route. The design process will map the gate-level netlist to layout. As the semiconductor scales down, new challenges, such as timing closure, IR drop and crosstalks arise for physical designs.
In physical design, the netlists are put in and the design is processed by floorplanning, placing, clock-tree synthesizing, routing. The layout data is outputted for fabrication.
Floorplanning: The process will handle the area, the position of IOs and macros and the planning of power rails;
Placement: The process will place the standard cells and macros. The process is often driven by timing to meet timing closure. Congestion is also analyzed.
Clock-tree synthesis: The clock network is the most loaded and longest net in the design. The network should be optimized by synthesis for better timing.
Routing: All the cells and macros will be connected in the process by global routing, detail routing and repair.
The class will arrange ten labs for students to understand the physical design knowledge. Students will learn the basic methods, the tool application and skills for place-and-route.
The Digital Circuit is suggested as a pre-arranged class for the class.
The class will be taught in labs in 2 weeks. There are four class hours every day.

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课程号（Course Number）： 04834370
课程名称（Course Title）：虚拟现实技术/Virtual Reality Technology
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 汪国平 教授 Professor

先修课程（Prerequisites）： 没有先修课程要求

中文简介：
虚拟现实技术已经成为一种重要的行业领域内容显示和技术验证手段，在国防军事、重大工程应用、工程设计以及文化娱乐等行业领域具有广泛的应用前景。虚拟现实技术是多学科综合性技术，它涉及计算机、电子和通信、机械和光电工程以及数学物理等多个学科理论和方法，与工程科学等行业相关学科都有密切关联。虚拟现实技术是当前高技术领域中的重要发展方向，也是当前发展最为迅速的信息技术方向之一。虚拟现实和增强现实统称为虚拟现实，两者在研究方法和显示方式上有所不同，但是具有相同的基础理论和方法手段。在当前虚拟现实技术发展过程中，VR+已经成为各个领域的发展热点，也是虚拟现实在各个学科和行业领域应用的发展重点，让学生了解和掌握基本的虚拟现实方法和理论，便于学生熟悉和掌握相关的技术手段，对于学生对虚拟现实技术本身的了解，以及增加学生对虚拟现实对其他行业领域发展的认识具有促进作用。

英文简介（Course Description）：
Virtual reality technology has become an important industry content display and technology verification means, which has a wide range of application prospects in national defense, military, major engineering applications, engineering design, cultural entertainment and other industries. Virtual reality technology is a multi-disciplinary comprehensive technology, which involves the theory and method of computer, electronics and communication, mechanical and photoelectric engineering, mathematical physics and other disciplines, and is closely related to engineering science and other related disciplines. Virtual reality technology is not only an important development direction in the field of high technology, but also one of the most rapid development directions of information technology. Virtual reality and augmented reality are called virtual reality. They have different research methods and display methods, but they have the same basic theories and methods. In the current virtual reality technology development process, VR + has become a development hotspot in various fields, and it is also the development focus of virtual reality application in various disciplines and industry fields, so that students can understand and master the basic virtual reality methods and theories, so that students can be familiar with and master relevant technical means, understand virtual reality technology itself for students, and increase students' understanding of virtual reality technology. Virtual reality can promote the development of other industries.

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课程号（Course Number）：04834500
课程名称（Course Title）：量子信息技术概论/Introduction to Quantum Information Technology
开课院系（School/Department）：信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）：2
授课教师（Faculty）：吴腾 长聘副教授

先修课程（Prerequisites）：本课程主要面向信科、物理、元培等其他相近专业低年级本科学生，无特别先修课程要求。如具备线性代数、原子物理、光学、量子力学等相关课程的初步知识，则更好。

中文简介：
本课程主要讲授与量子信息技术有关的基础知识、发展现状和未来趋势，以期拓展学生在量子信息技术领域的知识面，培养学生对量子信息技术的兴趣。本课程采用专题讲座式教学方式，授课形式以幻灯片为主、辅以一定的黑板板书。本课程包括 16 个专题讲座，内容涵盖：量子信息技术的概念和历史、与量子信息技术有关的基本概念、量子计算、量子保密通信、量子精密测量、核磁共振等前沿量子信息技术的发展现状及未来趋势。

英文简介（Course Description）：
This course introduces the basics, the current status and the future of the quantum information technology, and aims at broadening the students' knowledge and cultivating their interests in this field. The course consists of 16 talks, the topics of which include but not limited to the history of the quantum information technology, some basic conceptions such as wave-particle duality, entanglement, atomic structure, and the current status and future of quantum computing, quantum communication, quantum precision measurement and some other typical and important quantum information technologies.

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课程号（Course Number）：04834710
课程名称（Course Title）：自旋与超导量子技术导论/Introduction to Spintronic and Superconducting Quantum Technology
开课院系（School/Department）：信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）：2
授课教师（Faculty）：王润声 教授 Professor

先修课程（Prerequisites）：本课程主要面向信息科学（电子、微电子/集成电路、计算机、人工智能等）、物理、材料等其他相近专业二三年级本科生，无特别先修课程要求。但需要具备一点编程的基本知识（如Python/Matlab/Mathematica等）。如具备线性代数、量子物理等相关课程的初步知识，则更好。

中文简介：
本课程介绍自旋电子学和量子信息科学中的基本概念、器件技术、电路及算法应用。该课程包括课堂讲授和有关动手学习仿真工具的补充教程。希望学生通过动手作业（使用仿真工具）展示运用基本原理理解自旋电子学和超导量子技术的能力。本课程将邀请香港科技大学邵启明教授联合讲授。

英文简介（Course Description）：
This course introduces concepts, devices, and applications in spin electronics and quantum information science. The course includes lectures and supplemental tutorials for hands-on learning tools. Students are expected to demonstrate the capability of applying fundamental principles to understand spintronic and superconducting quantum devices through hands-on homework projects. The course will be co-instructed by Prof. Qiming Shao of Hong Kong University of Science and Technology.

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课程号（Course Number）：04835270
课程名称（Course Title）：自动驾驶技术赏析/Self-driving Technology Appreciation
开课院系（School/Department）：信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）：2
授课教师（Faculty）：赵卉菁 教授 Professor

先修课程（Prerequisites）：无

中文简介：
自动驾驶技术（Autonomous driving; Self-driving)是一个综合了移动机器人、人工智能、计算机视觉、传感器等学科的高新技术，在交通运输、物流服务、工业自动化等领域有着重要的应用。自动驾驶技术是当前科技研究的热点，近年来有着迅猛的发展，受到社会各界的广泛关注。本课程充分发挥自动驾驶技术发展的特点，利用相关的视频演示、媒体报道、主题演讲、技术分析、学术论文等多媒体材料，以自动驾驶系统典型案例的技术欣赏和分析入手，由浅入深地教授自动驾驶相关的理论基础知识，引导学生理解自动驾驶技术的主要思路与挑战。本课程分6个专题教授自动驾驶相关的理论知识，包括自动驾驶系统、架构与关键技术、自动驾驶地图、标准与测试、自动驾驶与社会、应用场景，最后通过专题研讨，使得学生在获得理论知识的基础上，具备对自动驾驶技术现状与挑战的综合分析与评价能力。

英文简介（Course Description）：

Autonomous driving technology is a high-tech that integrates mobile robotics, artificial intelligence, computer vision, sensors and other disciplines, and has important applications in transportation, logistics services, industrial automation and other fields. Autonomous driving technology is the current hot spot of scientific and technological research, with rapid development in recent years, receiving wide attention from all walks of life. This course is designed to exploit the characteristics of the fast development of autonomous driving technology and uses relevant video demonstrations, media reports, keynote speeches, technical analysis, academic papers and other multimedia materials to teach the theoretical fundamentals related to autonomous driving from shallow to deep, starting with technical appreciation and analysis of typical cases of autonomous driving systems, and guiding students to understand the main ideas and challenges of autonomous driving technology. This course teaches theoretical knowledge related to autonomous driving in six topics, including autonomous driving systems, architecture and key technologies, autonomous driving maps, standards and testing, autonomous driving and society, scenarios, and finally, through thematic seminars, enables students to acquire theoretical knowledge and have the ability to comprehensively analyze and evaluate the current situation and challenges of autonomous driving technology.

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课程号（Course Number）： 04835290
课程名称（Course Title）：模拟集成电路设计方法、工具与流程/Analog Integrated Circuits Design Method、Tools and Flow
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 汝嘉耘 助理教授

先修课程（Prerequisites）： 高等数学
电路原理/电路分析
模拟电子电路/模拟集成电路设计
数字电子电路/数字集成电路设计
线性代数、概率论
信号与系统
微电子学或半导体物理学
C 语言编程

中文简介：
模拟集成电路设计不仅需要依赖扎实的基础理论知识体系，还需要充分掌握模拟EDA工具以设计流程。本课程通过2周的实训，可使参加实训的学生快速提升模拟集成电路设计的实践能力，弥补理论基础知识课程与实际IC工程实践要求之间的脱钩问题，为培养满足实际需要的模拟 IC

设计人才打下坚实基础。
本课程具有以下亮点：与传统基于美国EDA工具进行实验教学有所不同的是，本课程将使用国产EDA 全流程设计软件，来进行模拟集成电路设计的教学和实践训练。课程完整囊括了模拟 IC 设计的所有环节，包括：电路图原理设计、原理图仿真、波形分析调试、多工艺角分析和蒙特卡洛分析、Schematic Driven Layout、版图设计、DRC/LVS 物理验证、寄生参数提取、后仿真以及数模混合设计和仿真的全流程，从而可以系统化、立体化地培养学生的模拟 IC 设计能力。此外，本课程还包括了丰富的实际案例的教学内容，包含：电路原理讲解、案例分析、以及大量的动手实验。由一个在模拟 IC 项目中最常用的典型电路项目贯穿，将知识点融入项目原理、设计、开发、优化全过程中，实现做中学。
本课程邀请华大九天技术专家共同授课，华大九天是我国EDA龙头企业，其模拟集成电路设计流程EDA工具，已经完成了全体系的国产自主可控，保障了我国在模拟芯片、数模混合芯片等领域的EDA自主可控和产业链安全，部分指标甚至局部超越美国EDA巨头公司；然而现有绝大多数集成电路设计的学生培养，绝大多数均是依赖于美国EDA三巨头的软件工具所展开的，随时面临着被卡脖子的风险；开展基于国产EDA工具进行模拟集成电路设计方法、工具和流程的培养，对于培养能够支撑国家芯片产业安全和自主可控的高素质人才，具有十分重要的意义。

英文简介（Course Description）：

Analog integrated circuit design not only needs to rely on a solid theoretical knowledge system, but also needs to fully master the analog EDA tools to design the process. Through two weeks of training, this course can enable students participating in the training to quickly improve the practical ability of analog integrated circuit design, make up for the decoupling problem between the theoretical basic knowledge course and the practical requirements of actual IC engineering, and lay a solid foundation for training analog IC design talents to meet the actual needs.
This course has the following highlights: Different from the traditional experimental teaching based on American EDA tools, this course will use domestic EDA full-process design software to carry out the teaching and practical training of analog integrated circuit design. The course covers all aspects of analog IC design, including circuit diagram schematic design, schematic diagram simulation, waveform analysis and debugging, multi-process angle analysis and Monte Carlo analysis, Schematic Driven Layout, layout design, DRC/LVS physical verification, parasitic parameter extraction, post-simulation, and the whole process of digital-analog hybrid design and simulation, so as to systematically and stereoscopically cultivate students' analog IC design ability. In addition, this course also includes rich teaching contents of practical cases, including circuit principle explanation, case analysis, and a large number of hands-on experiments.
Through a typical circuit project that is most commonly used in analog IC projects, knowledge points are integrated into the whole process of project principle, design, development and optimization to achieve learning by doing.
This course invites technical experts from Huada Jiutian to teach together. Huada Jiutian is a leading EDA enterprise in China, and its analog integrated circuit design process EDA tools have completed the entire system of domestic independent control, ensuring the EDA autonomy and industry chain security in the fields of analog chips, digital analog hybrid chips, and other fields in China, with some indicators even

partially surpassing the EDA giants in the United States; However, the vast majority of existing integrated circuit design students' training relies on the software tools of the three EDA giants in the United States, and they are at risk of being stuck at any time; Developing the training of analog integrated circuit design methods, tools, and processes based on domestic EDA tools is of great significance for cultivating high-quality talents capable of supporting the safety and autonomous control of the national chip industry.

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课程号（Course Number）： 04835300
课程名称（Course Title）：人工智能前沿/Frontiers of Artificial Intelligence
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 1
授课教师（Faculty）： 王乐业 长聘副教授 ，仉尚航 助理教授

先修课程（Prerequisites）： 人工智能基础/引论

中文简介：
人工智能前沿课程将探讨最新的人工智能技术和发展趋势。本课程将从机器学习、深度学习、自然语言处理、计算机视觉、强化学习等人工智能研究领域出发，涵盖自主驾驶、人机交互、机器人、医疗保健、金融科技等领域的应用案例。学生将学习如何应用人工智能解决实际问题，并了解人工智能的前沿领域，发展趋势及其对社会和工作的影响。

英文简介（Course Description）：
The frontiers of artificial intelligence course will explore the latest AI technologies and trends. This course will introduce fundamental concepts such as machine learning, deep learning, natural language processing, computer vision, and reinforcement learning, and cover application cases in fields such as autonomous driving, human-machine interaction, robotics, healthcare, and fintech. Students will learn how to apply AI to solve real-world problems and understand the development trends of AI and its impact on society and work.

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课程号（Course Number）： 04835490
课程名称（Course Title）：计算机科学高级专题/Advanced Topics in Computer Science
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2

授课教师（Faculty）：周明辉 教授 Professor，刘先华 教学教授 ，边凯归 长聘副教授 ，罗国杰 长聘副教授 ，熊英飞 长聘副教授 ，张大庆 教授 Professor，王乐业 长聘副教授 ，孔雨晴 长聘副教授 ，吴文斐 助理教授 ，王鹤 助理教授 ，仉尚航 助理教授 ，吴垠鋆 助理教授

先修课程（Prerequisites）：无。

中文简介：

本课程涉及计算机学科多个领域，由北大计算机学院的多位知名教授共同讲授，课程内容包括程序设计语言概览、开源数据分析、人工智能时代的数据库系统、计算摄像学、计算机视觉、普适计算和情境感知、人工智能系统实践、软硬件协同设计优化、现代自适应计算、网络计算与分布式系统、智能视频传输、同伴预测与群体智慧以及具身智能。课程理论和实践并重，将设置多个实验和操作环节。通过本课程的学习，学生基本掌握编程语言发展、量子算法、深度学习应用、操作系统原理、视频传输优化、计算摄像学基本概念、人工智能系统构建、智能机器人原理、软硬件设计协同优化、现代自适应计算、网络计算技术、开源数据分析以及普适计算的愿景和无线传感技术应用等计算学科各个领域的核心原理与方法，获得相关领域的实践经验，提高创新意识和实践能力。本课程的各部分内容概要介绍如下：

1. 程序设计语言概览（熊英飞）：介绍编程语言的发展、技术、未来方向。
2. 开源数据分析（周明辉）：讨论开源软件及其开发复杂性，以及挖掘数据揭示开源规律的量化分析技术和建立智能工具控制复杂系统及其开发的方法。
3. 人工智能时代的数据库系统（吴垠鋆）：本课程旨在帮助学生理解人工智能时代数据库系统面临的新挑战和机遇，了解数据库系统与人工智能技术的融合趋势，例如智能查询优化、自动数据管理等；掌握支持人工智能应用的新型数据库技术，例如向量数据库等。
4. 计算摄像学（施伯鑫）：介绍计算摄像学的基本概念、研究趋势、数字图像形成以及数码相机工作原理，并包含与成像基本原理相关的课程实践练习。
5. 计算机视觉（仉尚航）：介绍重要模型与算法，深度学习在其中的应用，以及面对开放环境的计算机视觉挑战，包括大量数据域偏移和新类别动态出现。
6. 普适计算和情境感知（张大庆）：介绍普适计算的愿景、历史、研究原则和情境感知计算，涵盖无线传感作为新的情境感知计算研究领域。
7. 人工智能系统实践（王乐业）：涵盖问题建模、数据获取、预处理、调参、部署和维护等技术，通过现实人工智能系统实例展示系统构建全流程所需的关键知识和工具。
8. 软硬件协同设计优化（刘先华）：探讨硬件和软件组件的协同设计原则，强调提高性能和效率，学生将参与实践项目设计系统。
9. 现代自适应计算（罗国杰）：介绍现代自适应计算的芯片架构、编译技术、编程接口等，以及其作为系统原型研究平台的典型案例。
10. 网络计算与分布式系统（吴文斐）：介绍在网络计算的原语，降低网络流量和时延，提升系统效率的设计、管理、应用编程模型等。
11. 智能视频传输（边凯归）：探讨提升视频流服务与体验质量的关键技术，如预测视频内容流行度、网络带宽动态变化表征、对象检测等，为 5G 时代视频内容消费者提供更好服务。
12. 同伴预测与群体智慧（孔雨晴）：本章介绍同行预测机制，该机制无需依赖客观真实值，即可激励参与者真实报告意见。基于信息论框架，它适用于两人参与的有限任务场景，并通过报告匹配进行奖励。此外，我们将探讨该机制与从噪声标签数据中学习的关系。
13. 具身智能（王鹤）： 本课程聚焦具身智能这一通用人工智能发展的关键领域，探索通过

物理交互实现智能行为的系统。内容涵盖足式机器人与灵巧手操作、多模态大模型应用（如GPT-4V/4o）、以及从仿真到现实（Sim2Real）技术的核心任务与方法。学生将有机会在真实机器人上进行实验，深入理解具身智能在机器人控制与交互中的前沿挑战和应用。

英文简介（Course Description）：

Students will explore programming language development, traditional and quantum algorithm design, deep learning in computer vision, challenges in open-world vision, operating system principles, video streaming optimization, computational photography, AI system construction, embodied intelligence, hardware-software co-design, adaptive computing, network computing, open-source software complexities, and ubiquitous computing with wireless sensing applications. The course includes practical experiments to master core principles, enhance skills, and foster innovation.

1. An Overview of Programming Language Research – Introduction to the evolution, technologies, and future directions of programming languages, featuring related professors at Peking University.
2. Open-source Data Analytics – Examines open-source software development, quantitative analysis techniques for pattern recognition, and intelligent tools for complex system control via data mining.
3. Database Systems in the AI Era – Explores AI-driven database systems, including intelligent query optimization, automated data management, and emerging technologies like vector databases.
4. Computational Photography – Covers fundamental concepts, research trends, digital image formation, and digital camera principles, with hands-on exercises on imaging fundamentals.
5. Computer Vision in the Open World – Discusses key models, algorithms, and deep learning applications, addressing challenges such as domain shifts and new category emergence.
6. Ubiquitous Computing & Context Awareness – Examines the vision, history, and research in ubiquitous computing, with a focus on context-aware computing and wireless sensing applications.
7. AI System Practice – Covers problem modeling, data processing, tuning, deployment, and maintenance, demonstrating real-world AI systems and essential tools for system development.
8. Software/Hardware Co-design & Optimization – Explores principles of hardware-software collaboration, emphasizing performance and efficiency improvements through hands-on projects.
9. Modern Adaptive Computing – Introduces adaptive computing chip architectures, compilation techniques, and programming interfaces, illustrating real-world applications for system prototyping.
10. Accelerating Distributed Systems with In-Network Computing – Covers network computing principles to reduce traffic and latency, improving efficiency through advanced programming models.
11. Video Streaming with AI – Explores AI-enhanced video streaming, including content popularity prediction, bandwidth characterization, and object detection for

optimized 5G services.
12. Peer Prediction & Wisdom of the Crowds - Introduces peer prediction mechanisms that incentivize truthful reporting without objective ground truth, connecting to learning from noisy labeled data.
13. Introduction to Embodied AI - Explores embodied intelligence, covering AI-physical world interaction, 3D vision, reinforcement learning, multimodal models (GPT-4V/4o), and real-robot Sim2Real challenges.

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课程号（Course Number）： 04835500
课程名称(Course Title)：大模型：从基础到前沿/Large Models: From fundamental to frontier
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 邓志鸿 教授 Professor

先修课程（Prerequisites）： 高等数学（或者数学分析）、线性代数（或高等代数）、计算概论。

中文简介：
近年来，大模型的出现极大地促进了人工智能的发展，并把人工智能引入新的发展阶段，这其中人机对话系统ChatGPT是一个标志性事件。本课程涵盖了神经网络与深度学习基础、注意力机制与Transformer、语言大模型、视觉与多模态大模型、大模型微调技术、提示工程（Prompting）与上下文学习和课程项目实践等内容。在本课程中，学生将掌握最基本的基础理论知识，了解并接触最前沿的技术。通过课程内容讲授、课外作业和课程项目实践等多种教学方式相结合，学生能掌握设计和实现基于大模型的应用系统所必须的基本原理和技术，并对自己实现的系统有深入的理解，建立起对大模型全面而深入的认识。

英文简介（Course Description）：
In recent years, Large Models have emerged and greatly promoted the development of Artificial Intelligence and bring Artificial Intelligence to a new stage, where ChatGPT is a milestone example. This course provides a thorough introduction to basic technologies and cutting-edge research in Large Models, including the fundamental of neural networks and deep learning, attention mechanism, Transformer, large language model, large vision and multimodal model, fine-tuning technology for Large Models, Prompting, In-Context Learning, and practice. Through lectures, assignments and a course project, students will develop systems based on Large Models and learn the necessary skills to design, implement, and understand their own models, and finally establish a comprehensive and in-depth understanding of large models.

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课程号（Course Number）：04835520
课程名称（Course Title）：网络与系统安全实验/Network and System Security Experiments
开课院系（School/Department）：信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）：2
授课教师（Faculty）：王昭 教学副教授

先修课程（Prerequisites）：计算概论、计算机网络、操作系统

中文简介：
随着网络技术的快速发展，网络安全问题成为影响国家安全、经济发展和社会稳定的严峻问题。网络安全是实践性很强的学科，为了增强计算机科学与技术”、“软件工程”等计算学科学生应对网络安全问题的实战能力，本课程通过计算机系统安全和网络安全的一系列实验，使学生能理解并应用计算机系统安全及网络安全方面的知识，掌握安全防护的基本技能，初步具备应对实际网络安全问题的能力。

本课程以实验课为主，上课时间安排在两周，一共10次课，每次4小时。
前8次为基础理论课与实践训练，最后2次为综合性实验。

英文简介（Course Description）：
With the rapid development of network technology, network security has become a serious issue that affects national security, economic development, and social stability. Network security is a highly practical discipline. In order to enhance the practical ability of students in computer science and technology, software engineering, and other computing disciplines to deal with network security issues, this course conducts a series of experiments on computer system security and network security, enabling students to understand and apply knowledge in computer system security and network security, master basic skills in security protection, and have a preliminary ability to deal with practical network security issues.
This course mainly focuses on experimental classes, with a two-week schedule. There are a total of 10 classes, each lasting 4 hours.
The first 8 are basic theoretical courses and practical training, and the last 2 are comprehensive experiments.

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课程号（Course Number）：04835550
课程名称（Course Title）：大模型：从基础到实战/Large Model: From Basic to Practice
开课院系（School/Department）：信息科学技术学院/School of Electronics Engineering and Computer Science

学分（Credits）： 2
授课教师（Faculty）： 黄铁军 教授 Professor

先修课程（Prerequisites）： 计算机基础课程，Python语言，深度学习原理与Pytorch编程（可自学参考教材《深度学习原理与Pytorch实战》）

中文简介：
大模型已经成为人工智能发展的主流方向和驱动智能革命的主要力量。大模型是一个人工神经网络，实践表明，大模型规模达到500亿以上时，往往就能出现涌现现象，也就是出现了意料之外的新智能，而且随着模型规模和训练数据的增长，越来越多的能力涌现出来，成为实现各种智能的基础底座，有望成为实现通用人工智能的重要技术途径。
本课程从人工智能的历史介绍大模型的思想起源，从自然语言处理技术演进介绍语义理解的可能性，讲解训练大模型所需的基础知识，包括Transformer基础架构、大深度学习框架和大模型训练平台、常用数据集和数据处理技术、大模型评测方法等，进而进入实战阶段，结合正在进行的前沿科研介绍语言模型、视觉模型、多模态模型和具身模型的技术细节，最后介绍大模型的典型应用方案。

英文简介（Course Description）：
Large models have become the mainstream direction of artificial intelligence development and the main driving force for the intelligent revolution. A large model is an artificial neural network, and practice has shown that when the scale of a large model reaches over 50 billion, unexpected new intelligence can often emerge. With the growth of model size and training data, more and more capabilities emerge, becoming the foundation for realizing various intelligences and expected to become an important technological approach to achieving universal artificial intelligence.
This course introduces the origin of the idea of large models from the history of artificial intelligence, the evolution of natural language processing technology, and the possibility of semantic understanding. It explains the basic knowledge required to train large models, including Transformer infrastructure, deep learning frameworks and training platforms for large models, commonly used datasets and data processing techniques, and evaluation methods for large models. It then enters the practical stage and combines cutting-edge scientific research to introduce the technical details of language models, visual models, multimodal models, and embodied models. Finally, it introduces typical application solutions for large models.

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课程号（Course Number）： 04835640
课程名称（Course Title）：深度学习中的高效计算方法/Efficient Computing of Deep Neural Networks
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science

学分（Credits）： 2
授课教师（Faculty）： 王润声 教授 Professor

先修课程（Prerequisites）： 数据结构与算法，C/C++编程语言

中文简介：
深度神经网络（DNN）的高计算需求及其在云平台和物联网平台中的广泛应用，催生了专门用于加速DNN执行的硬件和软件技术的发展。本课程将介绍DNN高效应用和计算技术，将从DNN的概述开始，介绍支持DNN的各种框架和架构，以及在特定计算平台上的实现与优化方法。本课程邀请香港中文大学余备教授一起联合讲授。

英文简介（Course Description）：
The high computational demands of deep neural networks (DNNs) coupled with their pervasiveness across both cloud and IoT platforms have led to a rise in specialized hardware and software techniques to accelerate DNN executions. This course will present techniques that enable efficient applications and computing of DNNs. The course will start with an overview of DNNs, and then will introduce various frameworks and architectures that support DNNs, as well as the implementations and optimizations on some particular computing platforms. The course will be co-instructed by Prof. Bei Yu of the Chinese University of Hong Kong.

-End-

课程号（Course Number）： 04835650
课程名称（Course Title）：脑机接口技术前沿与实践/Brain-Machine Interfaces and Bioelectronics: From Principles to Applications
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 郑雨晴 助理教授

先修课程（Prerequisites）： 无

中文简介：
本课程将通过理论讲授与案例分析，使学生对脑机接口的基础原理、硬件体系以及国内外的最新研究成果以及发展动态有深入的了解；在掌握常规侵入式与非侵入式神经电极设计及制造要点的同时，了解光遗传学、无创脑磁、无创超声等前沿方向在脑机接口中的应用探索；并通过对医疗、教育、娱乐领域典型场景的简要讨论，结合课程尾声对于技术伦理和产业趋势的思考，引导学生在科研与实践中保持多学科视角和责任意识。通过课堂讲解、案例研究和实验实践的教学模式，学生将有机会亲手制作传感器，体验脑机接口技术，真正理解生物电子技术的潜力。

英文简介（Course Description）：

This course provides students with an in-depth understanding of the fundamental principles and hardware architecture of brain-computer interfaces, as well as the latest research findings and developments both in China and abroad, through theoretical lectures and case analyses. While mastering key considerations in the design and fabrication of conventional invasive and non-invasive neural electrodes, students will also be introduced to cutting-edge directions such as optogenetics, non-invasive magnetoencephalography (MEG), and non-invasive ultrasound in brain-computer interface applications. In addition, by examining typical use cases in the medical, educational, and entertainment sectors—and concluding with reflections on technological ethics and industry trends—the course aims to guide students toward a multidisciplinary perspective and a strong sense of responsibility in both research and practice. Through a teaching model that integrates classroom instruction, case studies, and hands-on experiments, students will have the opportunity to fabricate sensors themselves, gain firsthand experience with brain-computer interface technology, and truly appreciate the potential of bioelectronics.

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课程号（Course Number）： 04835660
课程名称（Course Title）：微纳加工与设计/Micro/Nano Fabrication
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 王路达 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
微纳加工是现代科学技术发展不可缺少的部分，它在微纳机电系统（MEMS/NEMS）、集成电路器件、微纳光学器件、生物医疗微器件等起到关键支撑作用。本课程将对工业界主流的加工手段做一个全面的介绍，同时也会涉及一些新材料（如二维材料）的微纳加工手段。课程会从加工思路和原理出发由浅入深地对微纳加工进行介绍。对于没有集成电路工艺基础的同学，能够建立微纳加工的整个知识框架；对于学过集成电路工艺和微纳系统概论的同学，可以扩展知识面，特别是对新材料的微纳加工有深入的学习。

英文简介（Course Description）：
Micro/nano fabrication is crucial in science and technology. It plays a critical role in Micro/Nano-Electrical-Mechanical-Systems (MEMS/NEMS), integrated circuits devices, micro/nano optical devices, biomedical microdevices etc. In this course, I will give a comprehensive introduction of the mainstream fabrication in the industry. Meanwhile, I will dig into the ideas and principles of fabrication in a progressive manner. The students who do not have any background in the fabrication of integrated circuits will

establish the knowledge framework of micro/nano fabrication; the students who have taken the courses related to integrated circuits and MEMS/NEMS will expand their knowledge, especially in the fabrication of new materials.

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课程号（Course Number）： 04835670
课程名称（Course Title）：三维视觉基础讲解与科研实践/Fundamentals of 3D Vision and Research Training
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 1
授课教师（Faculty）： 陈文拯 助理教授

先修课程（Prerequisites）： 推荐先修完计算机视觉和可视计算两门课程。

中文简介：
本课程介绍三维视觉的基础知识，并为对三维视觉感兴趣的同学提供系统的科研训练。课程涵盖三维感知、三维重建和三维生成等核心内容，包括相机模型、三维重建方法（SFM、NeRF）、三维传感技术（LiDAR、结构光成像）以及大模型生成 3D 数据的最新进展。课程不仅通过理论讲解帮助学生掌握三维视觉的关键技术，还将结合实践训练和科研方法指导，培养学生的科研思维和创新能力。学生将在课程项目中夯实三维视觉基础，探索前沿研究问题，并通过学术讨论和实践训练，逐步提升从基础学习到科研探索的综合能力。

英文简介（Course Description）：
This course introduces fundamental concepts in 3D vision while providing systematic research training for students interested in the field. It covers key topics such as 3D perception, 3D reconstruction, and 3D generation, including camera models, reconstruction methods (SFM, NeRF), 3D sensing technologies (LiDAR, structured light imaging), and the latest advancements in large-model-generated 3D data.
The course not only helps students grasp essential 3D vision techniques through theoretical lectures but also fosters research thinking and innovation through hands-on training and research methodology guidance. Through course projects, students will strengthen their understanding of 3D vision fundamentals, explore cutting-edge research topics, and enhance their ability to transition from foundational learning to independent research through academic discussions and practical training.

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课程号（Course Number）： 04835700
课程名称（Course Title）：Python语言基础与人工智能应用/Python Programming and

Artificial Intelligence Applications

开课院系（School/Department）：信息科学技术学院/School of Electronics Engineering and Computer Science

学分（Credits）：2

授课教师（Faculty）：陈斌 教学教授

先修课程（Prerequisites）：无

中文简介：

本课面向零编程基础的本科生，全面讲授Python语言基础，培养学生计算思维的能力，并讲解Python语言中经典的扩展模块和人工智能应用，让学生能用Python语言通过人工智能方法来解决各种常见问题。

本课内容包括编程与计算思维、Python语言历史、开发环境、程序设计风格和语言整体概览、大语言模型辅助程序设计、基本数据类型和容器类型、基本计算语句和控制流结构、函数定义与参数、面向对象编程、例外处理和生成器等高级语言特性、若干高级扩展模块的介绍与应用、图形界面编程和打包发布、深度学习的基本概念及应用、大语言模型智能体应用开发以及RAG技术构建个人知识库。

本课注重Python语言的实践与人工智能应用，在课程中穿插了生动案例和编程练习，引导学生积极建立计算思维和智能思维模式，通过程序算法解决问题来加深对编程语言的学习体会。并具备进一步运用人工智能方法在本学科领域进行创新实践的能力。

英文简介（Course Description）：

This course is designed for undergraduate students with no prior programming experience, offering a comprehensive introduction to the fundamentals of the Python language. It aims to cultivate students' computational thinking skills and covers classic extension modules and artificial intelligence applications within Python. By the end of the course, students will be able to use Python to solve various common problems through AI methods.

The course content includes programming and computational thinking, the history of Python, development environments, programming design styles, and an overview of the language. It also covers large language model-assisted programming, basic data types and container types, fundamental computational statements and control flow structures, function definitions and parameters, object-oriented programming, advanced language features such as exception handling and generators, introductions and applications of several advanced extension modules, graphical interface programming and packaging, basic concepts and applications of deep learning, development of large language model intelligent agents, and the use of RAG technology to build personal knowledge bases.

The course emphasizes practical Python programming and AI applications, incorporating vivid case studies and programming exercises throughout. It guides students to actively develop computational and intelligent thinking patterns, deepening their understanding of programming languages through problem-solving with algorithms. Additionally, students will gain the ability to further apply AI methods for innovative practices within their own academic fields.

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课程号（Course Number）： 04835710
课程名称（Course Title）：光通信理论与仿真实验/Theory and Simulation Experiment of Optical Communication
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 1
授课教师（Faculty）： 张帆 教授 Professor

先修课程（Prerequisites）： 《光学》、《通信原理》

中文简介：
本课程是光通信系统理论与上机实验课程，旨在通过基于锟森光系统仿真平台（KingSim OpticSystem）的实践操作，深化学生对光纤通信理论知识的理解，培养系统设计与仿真能力。课程涵盖光纤通信系统核心模块的搭建、参数优化及性能分析，包括光信号调制、光纤传输特性、非线性效应、相干接收等关键技术，为后续工程实践奠定基础。

英文简介（Course Description）：
This course is an experimental course on optical fiber communication systems. It aims to deepen students' understanding of optical fiber communication theory through hands-on practice using the KingSim OpticSystem simulation platform and to develop their system design and simulation capabilities. The course covers the construction of core modules in optical fiber communication systems, parameter optimization, and performance analysis, including key technologies such as optical signal modulation, fiber transmission characteristics, nonlinear effects, and coherent receiver. This lays a solid foundation for future engineering practice.

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课程号（Course Number）： 04835730
课程名称（Course Title）：蛋白质设计中的人工智能方法/Artificial Intelligence for Protein Design
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 1
授课教师（Faculty）： 张铭 教授 Professor

先修课程（Prerequisites）： 无具体先修课程。学生应具备一定的计算机基础，会使用命令行工具，熟悉python相关依赖配置管理（conda、pypi等）。

中文简介：
本课程旨在介绍蛋白质设计的基本概念及基于人工智能的蛋白质设计在工业领域的重要应用。课程将深入探讨人工智能在蛋白质设计中的前沿应用，包括蛋白质结构预测、基于结构的序列生成、蛋白质语言模型等。课程重点介绍AlphaFold、RFDiffusion、ESM等主流AI技术的原理及实践，帮助学生理解如何利用AI工具设计新型蛋白质。通过理论讲解与实践操作相结合的方式，本课程将培养学生在交叉学科领域的创新思维和应用能力。

英文简介（Course Description）：
This course aims to introduce the fundamental concepts of protein design and its important applications in the industrial field. It will explore cutting-edge applications of artificial intelligence in protein design, including protein structure prediction, structure-based sequence generation, and protein language models. The course will focus on the principles and practical applications of mainstream AI technologies such as AlphaFold, RFDiffusion, and ESM, helping students understand how to utilize AI tools for designing novel proteins. Through a combination of theoretical instruction and hands-on practice, this course will foster students' innovative thinking and application skills in interdisciplinary fields.

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课程号（Course Number）： 04835790
课程名称（Course Title）：量子物理学导论/Introduction to Quantum Physics
开课院系（School/Department）： 信息科学技术学院/School of Electronics Engineering and Computer Science
学分（Credits）： 2
授课教师（Faculty）： 姚和朋 助理教授 ，贺轩 讲师 Lecturer

先修课程（Prerequisites）： 本课程面向所有非物理专业的本科生，无特别先修课程要求，只需学生掌握基本高中数学物理知识即可（如二元一次方程组的求解、概率的基本运算、牛顿定律等）。

中文简介：
本课程主要以文理科专业学生均可接受的方式，科普式地讲授讲授量子物理学的基本概念、基础知识与基本运算方法，以及量子物理在当下热门科学研究领域中的应用，从而使得不同专业的学生可以了解“什么是量子物理学”、“量子物理学有什么用”这两个核心问题，培养学生对量子物理学的兴趣，并激发学生关于量子物理与自己所学专业交叉的思考。本课程采用幻灯片为主、板书为辅的形式。课程的前八讲讲授量子物理学的基本概念与基础知识，主要围绕量子力学的五个基本假设展开，讲解量子纠缠、量子隧穿、薛定谔的猫等生活中耳熟能详的例子，加强学生对基本概念的理解。课程的后八讲主要讲授量子物理与太空科学、超导体与纳米科学、信息科学等热门研究领域的交叉应用，使学生了解量子科技是如何影响当今世界科技的发展以及我们的日常生活的。

英文简介（Course Description）：
This course is designed to be accessible to students from both arts and science backgrounds, offering a friendly introduction to the fundamental concepts, foundational knowledge, and basic computational methods of quantum physics. It also covers the applications of quantum physics in current popular scientific research fields. The goal is to help students from various disciplines understand the two core questions: "What is quantum physics?" and "What is quantum physics used for?" The course aims to cultivate students' interest in quantum physics and inspire them to think about the intersections between quantum physics and their own fields of study. The course primarily uses slides, supplemented by blackboard writing. The first eight lectures focus on the basic concepts and foundational knowledge of quantum physics, mainly focusing on the five fundamental postulates of quantum mechanics. To better understand these postulates, we will explain examples that are familiar in daily life, such as quantum entanglement, quantum tunneling, and Schr? dinger's cat. The last eight lectures primarily cover the interdisciplinary applications of quantum physics in cutting-edge research areas such as space science, superconductors and nanotechnology, and information science, enabling students to understand how quantum technology is influencing the development of modern science and technology and our daily lives.

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课程号（Course Number）： 06239083
课程名称（Course Title）：经济学社会实践/Field Work in Economic Study
开课院系（School/Department）： 国家发展研究院/National School of Development
学分（Credits）： 2
授课教师（Faculty）： 徐晋涛 教授 Professor，蒋少翔 助理研究员 ？Research Associate

先修课程（Prerequisites）： 经济学原理

中文简介：
本课程以教师指导学生进行企业参访和实习，田野调研等多种形式开展。引导学生走出校门、接触社会、了解国情与民生，使理论与实践相结合，让学生在企业和乡间走访过程中，了解社会状况，指导学生利用调查实践中的数据和信息进行科学研究，撰写研究论文，并加深对科学研究成果的理解。此外，还可以培养学生增强大学生服务社会意识。

英文简介（Course Description）：
This course is carried out in various forms, such as teachers guiding students to conduct enterprise visits and internships, field research, etc. Guide students to go out of school, get in touch with society, understand national conditions and people's livelihood, combine theory and practice, let students understand social conditions during company and rural visits, guide students to use data and information in survey

practice for scientific research and write research Papers, and deepen the understanding of scientific research results. In addition, students can be trained to enhance their sense of serving society.

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课程号（Course Number）： 06239139
课程名称（Course Title）：量化金融专题/Topics in Quantitative Finance
开课院系（School/Department）： 国家发展研究院/National School of Development
学分（Credits）： 2
授课教师（Faculty）： Tai 待定

先修课程（Prerequisites）： 微积分，线性代数，概率论，随机过程

中文简介：
本课程旨在介绍及探讨与量化金融相关的数学，经济及物理模型。课题着重于投资组合的建构，波动率估计与建模，利率相关产品与建模，以及最佳执行策略。基于应用所须，本课程前一小段将着重于随机控制理论与统计学习相关知识的简介。学生修完成课程应具备量化金融模型的基础知识及其与应用相关的技术。

英文简介（Course Description）：
The course aims at introducing quantitative models in finance from economics, mathematics, and physics viewpoints. Financial problems covered in the course include portfolio management, volatility estimation and modeling, optimal order execution under price impact, and interest rate related products and their modeling. In order to prepare the student into the core, part of the course offers a crash course on stochastic control theory in discrete time and the theory of statistical learning. Upon completion, students are expected to understand the quantitative models covered in the course and possess basic skills to implement the models.

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课程号（Course Number）： 06730090
课程名称（Course Title）：数字化学习与生存/Digital Learning and living
开课院系（School/Department）： 教育学院/Graduate School of Education
学分（Credits）： 2
授课教师（Faculty）： 尚俊杰 教授 Professor

先修课程（Prerequisites）： 无先修课程要求

中文简介：

信息技术广泛应用在各个领域，出现了新的工作方式、工作模式，并改变了社会分工和产业结构，让每个人都意识到在网络信息时代，学习、生活、工作都离不开网络。网络能够提供更多的学习机会，帮助人们简化生活，让工作更有效率。同时对工作者提出到了新的要求，一方面是利用网络技术开展工作，另一方面，利用网络提升职业技能。

为了让同学更好的使用网络，掌握信息时代的学习和生存技能，成长为信息时代的创新人才和领袖型人才，北京大学教育学院自2008年开始面向全校学生开设《数字化学习与生存》公共选修课，从数字学习、数字生活、数字娱乐、数字消费等几个方面介绍相关知识和技能，受到了广大同学的好评。

从2012年秋季学期开始，教育学院调集多名教师组成授课团队，并对本课程进行了全新的设计，精心设计了每一个教学活动，涵盖了信息素养、时间管理、人际关系、领导力培养等多方面知识，并努力给同学创设解决现实问题的真实人物环境，希望同学通过对现实问题的解决、通过和师生的密切活动，全面提升问题解决能力、创新能力和领导力。在此过程中，亦会通过参观考察等活动，让同学们对互联网的工作模式、管理模式、创业模式有清晰的了解，以便更加游刃有余的使用网络。

本课程最突出的特点是在活动中学习、在实践中学习、在娱乐中学习，在实践中体验知识的有用性，在活动中提高学习能力，从而全面提升信息素养和高阶能力。

英文简介（Course Description）：
Digital Learning and living
Will provide later.

-End-

课程号（Course Number）： 06732030
课程名称（Course Title）：教育实践与教育创新/Education Practice and innovation
开课院系（School/Department）： 教育学院/Graduate School of Education
学分（Credits）： 2
授课教师（Faculty）： 杨钋 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
一、 课程基本目的
通过案例分析、参观调研、专题讲座等方式，帮助学生了解当下我国义务教育和高中教育阶段面临的新问题、正在开展的特色实践和创新、以及未来的发展方向。

二、 中文课程简介
每个学生都是教育的接受者，但是，你是否了解在不同的教育阶段，在知识经济和数据时代的背景下，不同类型的教育机构如何开展创新实践？效果如何？教育机构如何管理？教育培训服务公司如何盈利？教育公益组织如何运营？本门课程将在讲授教育基本理论和方法的基础上，邀请研究者、各类教育机构的实践者和创新团队开展专题讲座，并结合实地调研、辩论等形式，帮助学生从教育研究者和管理者的角度重新认识教育。

针对每个教育阶段，课程将分为教育专题研讨和专题讲座两个部分。前者以任课教师讲授为主，侧重对基本理论、研究主题和方法的介绍；后者以邀请教育管理人员、教育创新团队开展专题讲座为主，侧重对热点问题、教育实践与创新活动、教育未来走向的探讨。

英文简介（Course Description）：
How do different types of educational institutions innovate? How to manage an educational institution? How do educational and training companies make profits? How do public welfare organizations operate? You might have not given these questions a thorough thought as an education receipt. This course aims to help students have a better understanding about education from the perspectives of management and research. We incorporate field trips, interviews, debates, discussion and lectures into the class. Topics addressed in this course include early child education, compulsory education and senior high school education. In each education stage seminars addressed by faculties emphasize introductions of basic theories and research methods; lectures dressed by educational practitioners and innovators emphasize on debates, innovation practice, and future trend.

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课程号（Course Number）：06732040
课程名称（Course Title）：经济学视角下的教育世界/Economics of Education
开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：马莉萍 长聘副教授

先修课程（Prerequisites）：无

中文简介：
教育政策是世界范围内教育领域的重要研究课题。过去二十年来，世界各国的经济学家致力于教育政策的研究，并做出了重要贡献。本课程旨在帮助学生在掌握经济学基本原理和主要分析方法的基础上，理解经济学家如何思考教育政策的制定、实施和评估，并建立分析教育政策的经济学思维及方法体系。

本课程以专题研讨的形式组织，在每一专题下，选取一到两项在国内外具有重要影响的教育政策或改革项目，梳理政策的起源和发展，分析经典实证研究，讨论可能的解决思路、评估方案及发展方向。学生通过本课程的学习，将能够系统了解教育经济领域的前沿研究，并熟练地运用经济学的思维和方法分析研究现实中的教育政策，为将来从事社会科学研究奠定一定的理论和方法基础。

英文简介（Course Description）：
Over the past twenty years economics has made a number of contributions to understanding the role of education in the wider economy and the effectiveness of various education

policies. This course provides a broad overview of the different issues in education that economists study. Through readings and discussion we will study the various aspects of the intersection of economics and education policy.

The goal for this course is to provide you with a broad understanding of the issues that arise at the intersection of education and economic policy, to be able to make judgments about the effectiveness of various education policies based on current research, and to be able to make cogent and effective arguments about appropriate policy recommendations. Thus upon completion students should be capable of thoroughly reading and criticizing research papers using econometric techniques in applications and to know when it is appropriate to apply such techniques to their own research.

This course will cover topics in the economics of education policy through reading and discussion of seminal papers and latest research. Specific topics chosen will be determined by the instructor with input from the students and may include, but are not limited to, school choice, peer effects, class size, teacher incentives, online education, college access, financial aid, college graduates' employment etc.

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课程号（Course Number）：06732060
课程名称（Course Title）：科技创新创业：理论与实践/Technological innovation and Entrepreneurship: Theory and practice
开课院系（School/Department）：教育学院/Graduate School of Education
学分（Credits）：2
授课教师（Faculty）：杨爱民 教授 Professor，杨钋 长聘副教授

先修课程（Prerequisites）：无

中文简介：
创新创业即是在创业管理理论和经验指导下的实践活动，又是展现创业者个人才华和能力的艺术。不是每个人都适合创业，也不是每个创业都适合融风险投资，如何做好首次科技创业，如何争取风险投资支持，对于从没有接触过创业的学生来说都是希望了解的重要问题。本课程通过对“创业树”及其各分枝形象地讲述让学生对科技创业形成整体认知，并从一个有志科技创业的人如何做好创业前的各项准备，到如何做创新产品、组建团队创办公司、设计商业模式、经营公司、撰写商业计划书以及融资等创业全过程，结合案例讲解各环节需要重点关注的问题以及创业管理的一些重要概念、方法和原则，使学生系统了解科技创业，无论将来是就业还是创业，本课程都将给学生带来价值和帮助。

英文简介（Course Description）：
Innovation and entrepreneurship are practical activities guided by entrepreneurial management theory and experience, as well as the art of showcasing the individual talents

and abilities of entrepreneurs. Not everyone is suitable for entrepreneurship, and not every startup is suitable for venture capital. How to do a good job in first-time technology entrepreneurship and how to win support from venture capital are important questions that students who have never been exposed to entrepreneurship hope to understand. This course vividly describes the "entrepreneurial tree" and its various branches to help students form a holistic understanding of technology entrepreneurship. It covers the entire process of entrepreneurship, from how a person with a passion for technology entrepreneurship can prepare well before starting a business, to how to create innovative products, form a team to start a company, design a business model, operate a company, write a business plan, and raise funds. Through case studies, it explains the key issues that need to be focused on in each link, as well as some important concepts, methods, and principles of entrepreneurship management, so that students can have a systematic understanding of technology entrepreneurship. Whether it is employment or entrepreneurship in the future, this course will bring value and help to students.

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课程号（Course Number）： 06733030
课程名称（Course Title）：教育与人工智能/Education and Artificial Intelligence
开课院系（School/Department）： 教育学院/Graduate School of Education
学分（Credits）： 2
授课教师（Faculty）： 贾积有 教授 Professor

先修课程（Prerequisites）： 计算机基础

中文简介：
最近十多年来人工智能的飞速发展和广泛应用，特别是chatGPT、DeepSeek等大语言模型令人瞩目的表现，对于教育而言意义重大。作为高校学生，应该了解人工智能的前沿进展，学会如何在学习之中进行有效的人机协作，为将来进入工作岗位奠定扎实的人工智能技术基础。
本课程以DeepSeek等大语言模型为主要技术工具，全面介绍人工智能技术各个领域的最新成就及其在教育场景的创新应用。通过本课程学习，学生要能够借助大语言模型和其他传统人工智能技术（如数据挖掘、模式识别、机器人等）：
(1) 高效学习、提升自我；
(2) 制作多媒体课件讲解知识；
(3) 设计个性化作业了解和评价学生；
(4) 诊断学情教情；
(5) 因材施教；
(6) 实施编程和跨学科的STEM教育。

英文简介（Course Description）：
Over the past decade, the rapid development and widespread application of artificial

intelligence, particularly the remarkable performance of large language models like ChatGPT and DeepSeek, have held significant implications for education. As university students, it is essential to stay informed about the latest advancements in AI and learn how to effectively collaborate with these technologies in their studies, laying a solid foundation in AI for future careers.

This course primarily utilizes large language models such as DeepSeek as key technical tools, offering a comprehensive introduction to the latest achievements in various fields of AI and their innovative applications in educational settings. Through this course, students will learn to leverage large language models and other traditional AI technologies (such as data mining, pattern recognition, robotics, etc.) to:

(1) Study efficiently and enhance self-improvement;
(2) Create multimedia courseware to explain knowledge;
(3) Design personalized assignments to understand and evaluate students;
(4) Diagnose learning and teaching conditions;
(5) Provide tailored instruction based on individual needs;
(6) Implement programming and interdisciplinary STEM education.

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课程号（Course Number）： 06733070
课程名称（Course Title）：数字媒体创意设计/Digital Media Creative Design
开课院系（School/Department）： 教育学院/Graduate School of Education
学分（Credits）： 2
授课教师（Faculty）： 赵国栋 教授 Professor

先修课程（Prerequisites）：无

中文简介：
这是北京大学教育学院和北京大学浙江信息技术高等研究院联合开设的面向各专业本科生的一门公共选修课，属于数字影像设计与编辑入门课程。内容主要包括三大模块：媒体可视化设计与传播理论（Visual Design & Communication），数字影像（Digital Audio & Video）摄制与后期处理，及AIGC影像生成式设计。
本课程的主要教学目标是尝试在当前的数智化转型（DX）和人工智能技术（AI）突飞猛进的社会背景下，使各专业学生初步了解和掌握关于数智媒体设计和应用的前沿性知识与技能，创造性地将不同学科的专业知识与AIGC相互融合，塑造具备符合未来需求的敏锐数智化创新领军人才。
第一部分，课程将聚焦于媒体可视觉化设计、表达与传播相关的技术与方法，主要包括：数字照片处理（以Adobe Photoshop为例）、数字图像设计（以Stable Diffusion WebUI和ComfyUI为例）和数字视频摄制（以OBS Studio为例）。从多个角度向学习者展示视听语言在数字影像设计中的理论与技术，如摄像的理论与流派，画面构图与叙事设计，光线布置与色彩表征，数

字照片后期编辑处理的策略，以及数字影像的脚本设计与制作相关基础知识。
第二部分，将重点学习基于人工智能的可视化设计与制作技术（AIGC），强调以动手操作方式来亲身体验技术发展对媒体设计所带来的深远影响和巨大变化。该教学单元主要涉及到两类大语言模型：图像生成(Text2Image)和动作捕捉（MoCap）。学习者将有机会亲身体验照片拍摄、图像设计和微视频、视频直播等技术，亲自动手去体验AIGC数字媒体的设计、拍摄与制作等环节，诸如：AI图像照片修复与上色、AI图像创意设计、AI图像风格化设计、图像生成动画和AI OBS动作捕捉生成式视频录制等。通过这种设计实践体验环节，将设计理论与AI技术实践相互结合为一体，促进从做中学，实现从体验中学。
《数字媒体创意设计》学时分配：
一、媒体可视化设计与传播概述（面授：2学时）
二、计算摄影术与图像后期处理（在线直播+教室面授：12学时）
三、AIGC影像生成式设计（教室面授+在线直播：12学时）
四、数字影像实操练习（校园拍摄+AIGC工作站：6学时）
期末考试：数字媒体设计作品（设计时长为3-5分钟的视频汇报）

英文简介（Course Description）：
Creativity is the essence of design in any age. In the Internet age, digital creativity is especially regarded as the basis of design. Essentially, Creativity is a unique perspective, a novel idea, or a way of expressing emotion, and it is used to spread the bridge between concept and material. Good creativity can turn decadent into magic, and make it dull and shining. Especially in the Internet age with digital information surging, Digital creative can make the object highlight personality and advantages, flash the edge and strength, and reach the acme of perfection in various network information.

Actually, Creative design thinking is an important component of College Students' creative thinking training in the age of Internet. Globally, the demand for digital creative design has not only been limited to the previous graphic and visual designers, photographers and web designers, but is gradually expanding into the basic capabilities of various professions. Such as public relations, publishing, broadcasting, health care, education, government agencies, and manufacturing, more and more fields and industries are emphasizing digital creativity and communication technology, paying attention to sharing or presenting ideas in a visual way, and further creativity, design and production of rich digital products and experiences.

How to cultivate digital creative design ability? Just as Microsoft's epoch-making computer operating system, Windows has changed the way people work, Adobe has revolutionized the way individuals display ideas and process information in the Internet age. Through a variety of highly innovative applications, Adobe has brought about tremendous changes in the field of digital design. It can be said that Adobe is an amazing and fascinating symbol, representing innovation, originality, magic and omnipotence. Adobe has been seeking to express images, information and ideas in a better way, and has created an excellent example of innovative results in digital imaging, design and documentation. Therefore, Adobe is indispensable when we talking about digital

creative.

This is a course aims to train, express and develop your digital creative ideas using Adobe's electronic design tools. You will learn about the current mainstream digital design tools and development methods based on Adobe design tools in this course. The learning content will allow learners to draw pictures, edit videos, and make mobile content by using Adobe's most creative multiple design and development software. Learners can also incorporate creativity into tasks such as assignments and learning easily. The creative tools involved in this course include Photoshop, Premiere, After Effects, Audition, Acrobat, Presenter, Captivate and related auxiliary design software such as SAI, BIN, Easy Sketch, Crazy Talk and so on.

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课程号（Course Number）：12632140
课程名称（Course Title）：生态学控制实验野外实习/Field Experiments in Global Change Ecology
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师（Faculty）：贺金生 教授 Professor

先修课程（Prerequisites）：植物学

中文简介：
本课程为实践类课程。

在《普通生态学I，II》基础理论学习的基础上，通过野外实习，掌握生态学实验设计的基本原理，实地了解国际上先进的生态学控制实验设施及运行，实习野外仪器的操作、实验数据的收集过程。通过野外的实习、讨论，深度参与到生态学科学实验的主要过程。

英文简介（Course Description）：
This is a practical field course. After the study of "General Ecology I", and "General Ecology II", this course provides students the opportunity to learn the basic principles of design of ecological experiments, to understand and practice the operation processes of advanced ecological field experimental facilities, practice field instruments, data collection process. Through field practice and discussion, they will be deeply involved in the main process of ecological experiments.

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课程号（Course Number）：12632250
课程名称（Course Title）：生态学认知实习/Field Course on Ecological Knowledge
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师（Faculty）：吉成均 研究员 Research Fellow，唐志尧 教授 Professor

先修课程（Prerequisites）：无

中文简介：
《生态学认知》是为生态学本科一年级学生设置的一门实践性课程，以宁夏回族自治区为实习基地，通过实地考察干旱半干旱地区的山地森林、灌丛、草地、荒漠及湿地等自然生态系统，并考察我国典型的旱区三北工程措施、沙坡头治沙成果（中卫）以及旱区节水农业等生态治理工程与生态农业工程，并结合治沙工程以及荒漠化防治工程，开展相应的劳动实践，希望同学们通过考察、调研以及讨论，了解我国干旱半干旱生态系统的物种组成、群落结构的成因及历史变迁，并初步了解生态学的基本原理以及应用前景，为进一步学习生态学的理论知识奠定直观认知。宁夏是我国干旱半干旱地区生态系统较为多样的区域，在很小的范围内集中了从森林到荒漠等多种生态系统类型，同时也是我国防沙治沙的样板。本课程通过实地考察干旱半干旱地区的山地森林、灌丛、草地、荒漠及湿地等自然生态系统，并考察我国典型的旱区三北工程措施、沙坡头治沙成果（中卫）以及旱区节水农业等生态治理工程与生态农业工程，通过考察、调研与劳动实践，培养学生在掌握我国干旱半干旱生态系统的物种组成、群落结构的成因及历史变迁的过程的同时，培养学生自主学习能力以及团队协作能，并初步了解生态学的基本原理以及应用前景，为进一步学习生态学的理论知识奠定直观认知。
本次学习内容包括：
1. 从北京到宁夏，生态系统随经度分异、干湿度分异等梯度规律。
2. 以贺兰山干旱山地自然生态系统为例，考察垂直地带分异的自然景观变化，探讨全球变化对林限、物种组成以及生态系统功能造成的影响。
3. 以沙湖湿地为例，考察湿地自然景观、植被和物种（尤其是湿地植物和鸟类），探究黄河上游湿地成因、生态功能变化及其影响。
4. 以沙坡头沙漠生态系统以及盐池荒漠生态系统为例， 考察自然沙漠景观、天然沙生植被，考察全国重点治沙区的措施和成效，探究干旱区生态治理模式和生态价值开发。

英文简介（Course Description）：
“Field Course on Ecological Knowledge” is a fundamental field course for the first year students majoring in Ecology. The field course will be mainly based on Ningxia Hui Autonomous Region, which is rich in ecosystem types in the arid and semiarid areas in China. The aim of this course is for the students to learn some basic knowledge on the theories and applications of ecology, together with the team works.

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课程号（Course Number）：12633070

课程名称（Course Title）：自然地理综合实习/Integrated Practice of Physical Geography
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师（Faculty）：蒙吉军 研究员 Research Fellow，连旭 助理教授

先修课程（Prerequisites）：无

中文简介：
自然地理综合实习选择黄河下游的黄河三角洲和中游的郑州-开封段，开展大尺度空间分异规律的实习及局地尺度自然综合体的实习，从流域的角度，通过水分循环将自然地理环境中格局与过程结合起来，建设从点到面的、综合性野外实习基地，为学生开展野外自然地理实践提供平台。通过实习，使学生得到综合的自然地理野外训练。实习内容包括地质、地貌、气候、水文、土壤、植被、景观及土地利用方面，在以往部门地理（地貌、土壤、植被）实习的基础上，分析自然地理各要素之间的关系，建立自然地理环境整体性的思维，加深对综合自然地理课堂教学内容的理解，加强理论与实践的结合，培养学生的地理思维及分析问题、解决问题的能力，为学生从事科研工作奠定良好的野外工作能力。

英文简介（Course Description）：
Comprehensive practice of physical geography is carried out in the delta in lower Yellow River and part of middle Yellow River from Zhengzhou to Kaifeng to illustrate the rule of spatial differentiation in large scales and the natural complex in local scales. From the perspective of river basin, it combines the physical geography pattern and process by means of hydrologic cycle, constructs a comprehensive field practice base from point to surface, aiming at providing a comprehensive physical geography field training for students. This course contains aspects such as geology, topography, climate, hydrology, soil, vegetation, landscape and land use, analyzes the relationship between the various physical geography elements on the previous basis of sectorial geography. Through the course, students can get an integrated thinking of natural geographical environment, understand the content of integrated physical geography taught in class more deeply, strengthen the combination of theory with practice, and form a geographic thinking as well as the ability to analyze and solve problems, also can develop good field work ability for future scientific research.

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课程号（Course Number）：12633130
课程名称（Course Title）：陆面过程模型和植被遥感实习/practice of land surface model application and vegetation remote sensing
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2

授课教师（Faculty）：王旭辉 长聘副教授

先修课程（Prerequisites）：建议选修本课程的学生上个学年(近期)选修过“地表过程模拟和监测”，”遥感原理与应用”和”古气候与古环境”。

中文简介：
陆面过程模型和植被遥感实习是为城市与环境学院自然地理专业或其他对陆面过程模型和植被遥感实践操作感兴趣的本科生和研究生开设的实习课程。课程主要包括三部分的核心内容:(1)陆面过程模型与遥感软件的运行环境，包括学习操作系统和作业调度系统的使用、认识编译和连接、学习使用脚本与模型交互 (2) 陆面过程模型(ORCHIDEE)的应用实践，包括学习ORCHIDEE模型的基本构架、光合作用和土壤温度模块的基本原理、在站点和区域尺度上运转ORCHIDEE模型 (3) 植被遥感的应用实践，包括学习植被遥感数据处理的基本流程、认识植被光能利用率模型、在区域尺度上分析植被光合作用的变化及其驱动因素。

英文简介（Course Description）：
The “Practice of land surface model and vegetation remote sensing” is the practice course designed for undergraduate and postgraduate students majoring in physical geography or students interested in working on land surface models and vegetation remote sensing. There are three core components of the course: 1) the environment of operating land surface model and remote sensing, including the operation system and the job distribution system; 2) the practice of the land surface model (ORCHIDEE), including the model structure, the formulation of photosynthesis and soil temperature, and the guidance on running site and regional simulations; 3) application of vegetation remote sensing, including the working flow of remote sensing data processing, the formulation of light use efficiency based photosynthesis model, and the guidance on analyzing sptio-temporal variations in vegetation photosynthesis.

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课程号（Course Number）：12634070
课程名称(Course Title)：“一带一路”综合实习/"The Belt and Road" Comprehensive Practice
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师（Faculty）：刘鸿雁 教授 Professor

先修课程（Prerequisites）：人文地理学

中文简介：
本课程为区域城乡综合发展与城乡生态环境认知学习的综合性实习课程。授课对象为城市与环境学院本科高年级学生。目的在于通过实习，让学生认识不同地理环境、不同发展阶段、不同发展类型的国家和地区，在城乡发展中的资源利用、经济社会活动的空间组织、城乡发展建设

规划管理等方面的特征和问题、机制和规律、对策和经验。
结合“一带一路”倡议，每年在相关国家的典型地区中选择实习地点，通过综合实习促进学生对不同地区发展状况的认识，开展比较研究，加深理论认识，提高专业学术水平，锻炼综合分析问题的能力。
该课程实习地点为日本东京都市圈地区。针对该地区的特点，主要教学内容包括：
（1）大都市圈空间发展与产业转型升级
（2）超大城市交通空间组织
（3）大都市地区历史文化风貌保护与利用
（4）大都市地区郊区化与空间重构
（5）新城新区的发展路径及成效（筑波科学城）
（6）港口城市转型升级（横滨）

英文简介（Course Description）：
This course is a comprehensive practical course for the recognition and learning of regional comprehensive development and ecological environment of urban and rural areas. The subjects of the lecture are senior undergraduates of the college of urban and environmental sciences. The purpose is to enable students to understand different geographical environment, stages of development and development types of countries and regions through the practice. The purpose is also to make students understand the characteristics, problems, mechanisms, rules, countermeasures and experiences of resources utilization, spatial organization of economic and social activities, and planning and management of urban and rural development and construction in countries and regions with different geographical environments, different stages of development and different types of development.
According to "The Belt and Road" initiative, we choose the practice place annually in the typical area of relevant countries, through the comprehensive practice to promote students' understanding of the development of different regions. Through comparative study, students can deepen their theoretical understanding, improve the professional academic level and exercise the ability of comprehensive analysis.
The course is carried out in the metropolitan area of Tokyo, Japan. According to the characteristics of the area, the main teaching contents include:
(1) Spatial development and industrial transformation and upgrading of metropolitan area
(2) Super city traffic space organization
(3) Protection and utilization of historical and cultural features in metropolitan areas
(4) The suburbanization and spatial reconstruction of metropolitan areas
(5) Development path and effectiveness of new town and district (Tsukuba Science City)
(6) Transformation and upgrading of port cities (Yokohama)

-End-

课程号（Course Number）： 12634070
课程名称(Course Title)：“一带一路”综合实习/"The Belt and Road" Comprehensive Practice
开课院系（School/Department）： 城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）： 2
授课教师（Faculty）： 吴龙峰 助理教授
先修课程（Prerequisites）： 人文地理学

中文简介：
本课程为区域城乡综合发展与城乡生态环境认知学习的综合性实习课程。授课对象为城市与环境学院本科高年级学生。目的在于通过实习，让学生认识不同地理环境、不同发展阶段、不同发展类型的国家和地区，在城乡发展中的资源利用、经济社会活动的空间组织、城乡发展建设规划管理等方面的特征和问题、机制和规律、对策和经验。
结合“一带一路”倡议，每年在相关国家的典型地区中选择实习地点，通过综合实习促进学生对不同地区发展状况的认识，开展比较研究，加深理论认识，提高专业学术水平，锻炼综合分析问题的能力。
该课程实习地点为日本东京都市圈地区。针对该地区的特点，主要教学内容包括：
（1）大都市圈空间发展与产业转型升级
（2）超大城市交通空间组织
（3）大都市地区历史文化风貌保护与利用
（4）大都市地区郊区化与空间重构
（5）新城新区的发展路径及成效（筑波科学城）
（6）港口城市转型升级（横滨）

英文简介（Course Description）：
This course is a comprehensive practical course for the recognition and learning of regional comprehensive development and ecological environment of urban and rural areas. The subjects of the lecture are senior undergraduates of the college of urban and environmental sciences. The purpose is to enable students to understand different geographical environment, stages of development and development types of countries and regions through the practice. The purpose is also to make students understand the characteristics, problems, mechanisms, rules, countermeasures and experiences of resources utilization, spatial organization of economic and social activities, and planning and management of urban and rural development and construction in countries and regions with different geographical environments, different stages of development and different types of development.
According to "The Belt and Road" initiative, we choose the practice place annually in the typical area of relevant countries, through the comprehensive practice to promote students' understanding of the development of different regions. Through comparative study, students can deepen their theoretical understanding, improve the professional academic level and exercise the ability of comprehensive analysis.
The course is carried out in the metropolitan area of Tokyo, Japan. According to the characteristics of the area, the main teaching contents include:

(1) Spatial development and industrial transformation and upgrading of metropolitan area
(2) Super city traffic space organization
(3) Protection and utilization of historical and cultural features in metropolitan areas
(4) The suburbanization and spatial reconstruction of metropolitan areas
(5) Development path and effectiveness of new town and district (Tsukuba Science City)
(6) Transformation and upgrading of port cities (Yokohama)

-End-

课程号（Course Number）：12634080
课程名称(Course Title):人文地理专业综合实习/Comprehensive Practice of Human Geography
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：1
授课教师（Faculty）：童昕 副教授 Associate Professor，陈彦光 教授 Professor，刘刚 教授 Professor

先修课程（Prerequisites）：人文地理，经济地理学，城市地理学，产业地理学，城市社会学

中文简介：
本课程面向人文地理与城乡规划专业已完成专业基础课学习和部分专业课学习的学生，属于专业综合实习类课程。课程集中7-10天时间考察城乡发展中的资源利用、典型业态、城乡聚落发展中的人文地理现象。学生在综合了解城乡区域空间发展的基础上，选择典型要素或典型地域发展作为研究对象，独立完成实习报告。

英文简介（Course Description）：
This course is taught to the senior students (the end of year 2). It is a core course for human and urban and rural planning major. The course lasts 60 teaching hours mainly in 7-10 days with field work. The field investigations include urban and rural planning and urban development, non-agriculture and agriculture industries development, the use and protection of resources during regional development, the distribution and development of town and villages under the contest of urbanization, etc. Each student should submit a practice report combined with field investigation and independent research.

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课程号（Course Number）：12634090

课程名称（Course Title）：人文地理综合社会实践实习/Social and Professional Practice of Human Geography
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：1
授课教师（Faculty）：柴彦威 教授 Professor，陈彦光 教授 Professor，曹广忠 教授 Professor，贺灿飞 教授 Professor，冯健 长聘副教授 ，童昕 副教授 Associate Professor，朱晟君 长聘副教授 ，王长松 长聘副教授 ，刘刚 教授 Professor，刘宇 教授 Professor

先修课程（Prerequisites）：人文地理，经济地理系，城市地理学，产业地理学，计量地理与规划系统工程学，区域分析与区域规划，

中文简介：
本课程面向人文地理与城乡规划专业高年级学生，属于综合实践实习类课程。课程以在暑期开展为主，学生分组参与老师主持的理论和实践类科研项目，参与项目整体讨论，并承担具体的科研工作任务。通过实践实习，综合了解城乡发展实践中的地理现象和空间规律，了解运用人文地理理论方法参与社会服务的基本程序和方法。

英文简介（Course Description）：
This course is taught to the senior students (the end of year 3). It is a core course for human and urban and rural planning major. The course lasts about two months for every students by attending theory or practice projects about urban and rural development managed by teacher. Students should attend the discussion about the project and complete some specific task of the project. Students should learn to use the theory and methodology of Human Geography to analyze the issues in urban and rural development practice.

-End-

课程号（Course Number）：12634180
课程名称（Course Title）：行运北京：大运河与北京城/The Grand Canal and Beijing
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：1
授课教师（Faculty）：王长松 长聘副教授

先修课程（Prerequisites）：无

中文简介：
本课以大运河与北京城关系为主题，通过系列运河发展变迁和北京城建设关系的报告，结合运河水源地、园林庙宇、桥梁闸坝、行船体验等实地参访考察，沉浸式体验和探究中国古代漕运制度、水利技术、文化景观、历史街区等演变过程，学习历史地理学相关理论、知识和研究方

法，理解和学习世界遗产、历史街区的保护与应用的内容和重要意义。

英文简介（Course Description）：
This course takes the relationship between the Grand Canal and Beijing as the theme. Through a series of lectures on the development and change of canals and the construction of Beijing City, combined with field visits to water sources, gardens, temples, bridges, dams, etc, this course immersive experiences and explores the evolution process of China's ancient water transport system, water technology, cultural landscape, historical blocks, etc. To learn the relevant theories, knowledge, and research methods of historical geography, and to understand and learn the content and significance of the protection of world heritage and historical blocks.

-End-

课程号（Course Number）：12636070
课程名称（Course Title）：信息地理综合实习/Comprehensive Practice of Information Geography
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：2
授课教师（Faculty）：李梅 副教授 Associate Professor

先修课程（Prerequisites）：无

中文简介：
本课程以山西大同北京大学地貌学实习基地为依托，围绕云州区火山群地质公园周边地形地貌、植被生态、人文景观格局等设计若干线路，通过现场讲授与工具实操相结合，学生在教师指导下，系统掌握遥感与测绘的外业内业基本方法，具备野外踏勘、外业实操、内业处理以及分析问题和解决问题的能力。
具体的来说，在实习过程中，学生结合外业踏勘对实习路线上的地形地貌、植被、水文、生态、土地、景观格局进行野外观察；熟练使用地物光谱仪、无人机等设备获取专题数据；熟悉遥感影像数据特征，通过外业踏勘，建立解译标志点，通过目视解译、监督分类、人工智能辅助等综合方法的运用，完成遥感图像解译和综合制图，最终综合分析实习区的地理特征或现象。此外，在这一过程中，学生需要综合运用知识、数据和工具，通过科学问题设计模块，对具有地区特色的问题进行思考和分析，撰写实习报告。

英文简介（Course Description）：
This course takes Datong, Shanxi, as its field practice base, with field routes planned around the Volcanic Cluster Geological Park in the Yunzhou District. The routes are designed to explore the patterns and characteristics of the surrounding landforms, vegetation, ecology, and cultural landscape. With on-site investigation and hands-on instruction by teachers, students systematically master the fundamental methods of

remote sensing and surveying both in the field and in the lab, and develop the abilities to conduct field investigations, process data, and analyze and solve problems. Specifically, during the practical course, students will observe the topography, vegetation, hydrology, ecology, land use, and landscape characteristics along the practice routes using satellite remote sensing and UAV imagery. They learn to use instruments such as spectrometers and drones; set up ground control points through field investigations; and complete remote sensing data analysis and thematic mapping by using visual interpretation, supervised classification, and AI-assisted remote sensing analysis. Ultimately, they will conduct integrated analyses of the geographic features and phenomena in the practice area and prepare the final report.

-End-

课程号（Course Number）：12639010
课程名称（Course Title）：综合社会实践实习/Comprehensive Social Practice Practicum
开课院系（School/Department）：城市与环境学院/College of Urban and Environmental Sciences
学分（Credits）：1
授课教师（Faculty）：林坚 教授 Professor

先修课程（Prerequisites）：本科三年级结束后的城市规划专业学生

中文简介：
城市规划是理论与实践紧密结合的学科，综合社会实践实习课，要求学生直接参与教师的具体研究或实践的课题工作，使学生在本专业相关实践中运用所学的理论知识，加深课堂知识的理解，初步掌握相关研究和实践的调研、资料查阅、数据分析、图件绘制等基本方法。
该课程由城市与区域规划系、城市与经济地理系全体教师共同承担，各位老师根据自己的科研项目，安排实习同学的实习内容。两系教师的研究方向涵盖了人文地理和城市规划的各相关领域。

英文简介（Course Description）：
Urban planning is a subject which connects theory with practice closely. This course, Comprehensive Social Practice Practicum, requires students to participate in the specific research or projects of their teachers directly so that the students will use their professional knowledge in practice. This course will help students understand the knowledge in lecture deeply and have initial grasp of the basic methods of research and practice on investigation, data collection, data analysis, map drawing, etc.

-End-

课程号（Course Number）：12730020

课程名称（Course Title）：变化中的地球/Our Changing Planet
开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：郑玫 教授 Professor

先修课程（Prerequisites）：无

中文简介：
《变化中的地球》课程是环境科学本科专业的一门专业基础选修课程，介绍地球系统中的多个圈层、各圈层间的相互作用及人类活动对地球系统的扰动和影响尤其是气候变化。认识地球系统中的大气圈、岩石圈和水圈的组成、形成和演化、圈层随时间的演化、主要元素如碳的生物地球化学循环，重点介绍由于人类活动引发的环境问题，包括温室气体和气候变化、光化学烟雾、臭氧层破坏和酸雨。该课程旨在培养学生掌握大气、海洋和地球科学的基础理论和了解各圈层的共同特点和相互关系，并学习采用多学科方法分析地球系统中的各种过程，从而对人类活动对地球系统的影响有全面的认识。本课程包括环境科学中的一些基本概念，包括大气和海水的组成和垂直结构、大气和海水运动的基本形态、海气相互作用及过去、现在和未来的气候变化。讲授范围从城市与区域人为源污染物的组成、来源和传输到全球性环境问题。该课程不仅详细介绍地球系统及人类活动对该系统的影响，同时也介绍一些当前大气科学和海洋学中的重要科研成果。

英文简介（Course Description）：
Environmental Science is fundamentally an interdisciplinary science which involves interactions between atmosphere, hydrosphere and lithosphere. The course 《Our Changing Planet》is an elective course, offered for undergraduate students in environmental science major. This course introduces different spheres in the earth system, the interactions between them and perturbation and impacts due to human activities on the earth system such as climate change. The students will learn the composition, formation and evolution of the atmosphere, lithosphere and hydrosphere in the earth system, understand interactions between them, evolution with time, biogeochemical cycles of major elements such as carbon. Major environmental issues such as greenhouse gases and climate change, photochemical smog, ozone depletion and acid rain are the focuses. This course aims to teach students fundamental knowledge of atmosphere, ocean and earth sciences, common characteristics in each sphere and their interactions, the interdisciplinary approaches needed to understand processes in the earth system, thus the students can acquire a complete picture of the impact on the earth system due to human activities. This course introduces basic concepts in environmental science, including the composition and vertical structure of atmosphere and ocean, atmospheric and ocean circulation, air-sea exchange and climate change of the past, current, and future. It does not only provide information of the earth system and human impacts, but also the most recent research findings in atmospheric and oceanic sciences.

-End-

课程号（Course Number）： 12739040
课程名称（Course Title）：环境综合实习一/Environmental Integrated Fieldwork One
开课院系（School/Department）： 环境科学与工程学院/College of Environmental Sciences and Engineering
学分（Credits）： 1
授课教师（Faculty）： 赵志杰 副教授 Associate Professor，刘兆荣 副教授 Associate Professor

先修课程（Prerequisites）： 实习环节安排在《环境问题》课程之后，学生对可持续发展的环境保护概念有了初步认知。

中文简介：
本课程为认知实习，是为环境科学与工程专业本科生安排的首次系统的、综合性的实践环节。本实习环节安排在《环境问题》课程之后，学生对可持续发展的环境保护概念有了初步认知。通过现场参观、访谈等环节，引导学生在实践中了解环境问题的由来和针对环境问题所采取的措施，认识人类活动与环境变迁的相互影响、相互依存的关系，体会可持续发展的重要性和必要性。通过认识环境保护工作的重要性，加深对本专业的了解，增强学习兴趣。
本实习环节立足东南沿海高新区，以珠海为中心建立实习基地，以环境保护、生态多样性保护、城市可持续发展与环境保护为主线，组织学生对自然生态环境和城市环境进行全方位的考察，包括河流、湖泊、水库等水体环境，从给水到排水的整体流程，从大气环境背景到城市区域空气环境的质量监测，从废物产生到储运、处置的全过程监督，从政府监管到企业参与环境保护，从城乡建设到经济与生态共赢，实地了解环境保护、环境监测、污染处置、城乡建设工作的意义和价值。
实习内容以主题线路串连，实习过程以观察、讲解、访谈和讨论方式展开，本着“且行且思且学”的原则，学生在考察中“看到”环境问题所在，“思考”环境问题发生的根由和解决之道，“学习”其中包含的环境科学与工程的专业知识，体会环境保护和可持续发展的重要性和必要性。

英文简介（Course Description）：
This course is the cognitive practice. It is the first systemetic, integrated practice session for the environmental science and engineering undergraduates.
The practice sessions scheduled after ″environmental issues″ course. Students had got the initial concept of sustainable development awareness. Through site visits, interviews and other sectors, this course should guide students to understand the origin and measures taken for environmental issues, environmental problems in practice, understanding the interaction and interdependence between human activities and environmental changes, and appreciate the importance of sustainable development necessity. By recognizing the importance of environmental protection, the students should get a better understanding of the profession and enhance their interest in learning.
The practice session is based on the southeast coast of Hi-tech Zone, and should establish practice bases around Zhuhai. Along the main line with environmental protection, biodiversity protection and sustainable urban development and

environmental protection, the students should be organized to inspect fully on the natural environment and the urban environment, which include the water environment of rivers, lakes, reservoirs, etc. From the whole process of the water to the drain, from the background atmosphere to the ambient air quality monitoring in urban areas, from the entire supervise process of waste generation to storage and disposal, from government regulation to business participation in environmental protection, from the urban construction to economic and ecological co-benefit, the students should learn more meaning and value about environmental protection, environmental monitoring, pollution disposal, urban and rural construction work.
Internship contents are stringed up with theme line series. The fieldwork process include observition, explaination, interview and discussion Based on the principle of "thinking and learning while walking", the students "see" the environment problem in the study of the fieldwork, and "think" root causes and solutions of the environmental issues, and "learn" environmental science and engineering expertise which are included inside, and experience the importance and necessity of environmental protection and sustainable development.

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课程号（Course Number）： 12739040
课程名称（Course Title）： 环境综合实习一/Environmental Integrated Fieldwork One
开课院系（School/Department）： 环境科学与工程学院/College of Environmental Sciences and Engineering
学分（Credits）： 1
授课教师（Faculty）： 刘文 长聘副教授 ，尚冬杰 助理研究员 ？Research Associate

先修课程（Prerequisites）： 实习环节安排在《环境问题》课程之后，学生对可持续发展的环境保护概念有了初步认知。

中文简介：
本课程为认知实习，是为环境科学与工程专业本科生安排的首次系统的、综合性的实践环节。本实习环节安排在《环境问题》课程之后，学生对可持续发展的环境保护概念有了初步认知。通过现场参观、访谈等环节，引导学生在实践中了解环境问题的由来和针对环境问题所采取的措施，认识人类活动与环境变迁的相互影响、相互依存的关系，体会可持续发展的重要性和必要性。通过认识环境保护工作的重要性，加深对本专业的了解，增强学习兴趣。
本实习环节立足东南沿海高新区，以珠海为中心建立实习基地，以环境保护、生态多样性保护、城市可持续发展与环境保护为主线，组织学生对自然生态环境和城市环境进行全方位的考察，包括河流、湖泊、水库等水体环境，从给水到排水的整体流程，从大气环境背景到城市区域空气环境的质量监测，从废物产生到储运、处置的全过程监督，从政府监管到企业参与环境保护，从城乡建设到经济与生态共赢，实地了解环境保护、环境监测、污染处置、城乡建设工作的意义和价值。
实习内容以主题线路串连，实习过程以观察、讲解、访谈和讨论方式展开，本着“且行且思且

学”的原则，学生在考察中“看到”环境问题所在，“思考”环境问题发生的根由和解决之道，“学习”其中包含的环境科学与工程的专业知识，体会环境保护和可持续发展的重要性和必要性。

英文简介（Course Description）：

This course is the cognitive practice. It is the first systemetic, integrated practice session for the environmental science and engineering undergraduates.

The practice sessions scheduled after "environmental issues" course. Students had got the initial concept of sustainable development awareness. Through site visits, interviews and other sectors, this course should guide students to understand the origin and measures taken for environmental issues, environmental problems in practice, understanding the interaction and interdependence between human activities and environmental changes, and appreciate the importance of sustainable development necessity. By recognizing the importance of environmental protection, the students should get a better understanding of the profession and enhance their interest in learning.

The practice session is based on the southeast coast of Hi-tech Zone, and should establish practice bases around Zhuhai. Along the main line with environmental protection, biodiversity protection and sustainable urban development and environmental protection, the students should be organized to inspect fully on the natural environment and the urban environment, which include the water environment of rivers, lakes, reservoirs, etc. From the whole process of the water to the drain, from the background atmosphere to the ambient air quality monitoring in urban areas, from the entire supervise process of waste generation to storage and disposal, from government regulation to business participation in environmental protection, from the urban construction to economic and ecological co-benefit, the students should learn more meaning and value about environmental protection, environmental monitoring, pollution disposal, urban and rural construction work.

Internship contents are stringed up with theme line series. The fieldwork process include observition, explaination, interview and discussion Based on the principle of "thinking and learning while walking", the students "see" the environment problem in the study of the fieldwork, and "think" root causes and solutions of the environmental issues, and "learn" environmental science and engineering expertise which are included inside, and experience the importance and necessity of environmental protection and sustainable development.

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课程号（Course Number）：12739060

课程名称（Course Title）：环境综合实习二/Environmental Integrated Fieldwork Two

开课院系（School/Department）：环境科学与工程学院/College of Environmental Sciences and Engineering

学分（Credits）：1

授课教师（Faculty）：梁宝生 讲师 Lecturer，刘兆荣 副教授 Associate Professor，许伟光 高级工程师 Senior Engineering，王婷 高级工程师 Senior Engineering，陈仕意 高级工程师 Senior Engineering

先修课程（Prerequisites）：环境监测，环境监测实验

中文简介：

本课程定位为野外环境监测操作实习，培养学生进行环境化学问题研究的思路和方法，理解和掌握环境污染的产生、变化过程的监测、分析手段和数据分析方法，加深对环境科学研究和环境保护的认识，提高学生分析问题和解决问题的能力。

本课程设计大气化学与气候监测和水土生环境交互监测两大板块的实践内容，涵盖大气、水体、土壤和生物环境等环境参数的变迁研究，涉及区域背景大气环境质量研究原理及手段、仪器操作、数据分析，植被生态及天然源VOCs的排放研究原理及手段、仪器操作、数据分析，湖泊水质参数检测原理及手段、仪器操作、数据分析，土壤环境参数检测原理及手段、仪器操作、数据分析，湖泊生态变迁机制及过程研究。

本课程以北京大学塞罕坝环境与生态实习基地为中心，对周边的湖泊、林地、草原等开展广泛的环境研究、监测、采样活动。

通过本课程的学习力图培养学生可持续发展的环境保护理念，加强环境参数的监测技术实地操作能力培训，培养科研能力，增强和加深对于环境科学与工程学科的学习兴趣，培养学生理论联系实际的能力，引导学生正确的研究思路，学习规范性实习报告的编写能力。

英文简介（Course Description）：

The course focuses on the outdoor environmental monitoring operation practice. In this course the undergraduates are cultivated in the ideas and methods of the study on environmental chemical problems. They could understand and grasp the monitoring, analysis and data analysis methods of the pollutants and the changing process during the environmental pollution, so that they could understand deeper environmental science and environmental protection. This course could improve the students' ability to analyze and solve problems.

This course designs the practice of the two plates, atmospheric chemistry and climate monitoring and interaction of soil and water environmental monitoring. The content covers the change of the environment parameters of the atmosphere, water, soil and biological environment. These contents involve the principle and method for study on regional background of atmospheric environmental quality, instrument operation and data analysis, the vegetation ecology and the natural source of VOCs emissions and the study method, instrument operation and data analysis, testing principle and method, water quality parameters of lake, instrument operation and data analysis, the soil environment parameter detection principle and the method, instrument operation and data analysis, research on lake ecological change mechanism and process.

This course carried out arround Peking University Saihanba Environmental and Ecological Practice Base. The extensive environmental research, monitoring, sampling activities will be hold around the lake, forestland and grassland.

Through the study of this course it is to cultivate students' concept of sustainable

development of environmental protection, strengthen their environmental parameters monitoring technology field operating skills, train their scientific research ability, enhance and deepen their environmental science and engineering discipline study interest, cultivate students' ability to integrate theory with practice, and guide the student to correct research thought and normative writing skills of study practice report.

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课程号（Course Number）： 18730002
课程名称（Course Title）：社会时空数据分析与建模/Social spatiotemporal data analysis and modeling
开课院系（School/Department）： 中国社会科学调查中心
学分（Credits）： 2
授课教师（Faculty）： 顾佳峰 研究员 Research Fellow

先修课程（Prerequisites）： 无

中文简介：
近年来，时空数据技术及应用在如金融投资、资源管理、社会科学研究、公共安全、智慧城市等领域发挥出重要作用。社会时空数据（Social spatiotemporal data）是包括时间、空间、社会属性的三维信息。社会时空数据分析与建模指的是利用时空数据，进行分析与建模，以解决实际社会问题的技术，是时空社会科学的基础。通过本课程的学习，使学生能够理解社会时空数据的基本特点，能够利用一些统计软件（Stata和Geoda）来分析和解决社会问题，并通过平时的实际操作和课程作业，培养学生利用时空数据实际分析和解决社会问题的能力。鉴于时空数据的跨学科属性，本课程是面向零基础、不区分专业的本科生所量身定做的入门级课程，可以看成是承接本科阶段和研究生阶段学习的过度课程，为以后本科生继续深入和研究时空数据提供基本的理论基础和方法训练。课程讲解力求深入浅出，精讲细讲，不光讲解和实例演示各种方法的过程与原理，还要加强学生对各种方法的深入理解和动手操作，让学生能够学以致用。在内容安排上，遵循由易到难、循序渐进原则；在软件操作上，通过手把手指导学生进行演练的方式进行教学，确保零基础学生也能学得会。

英文简介（Course Description）：
In recent years, spatiotemporal data technology and applications have played an important role in areas such as financial investment, resource management, social science research, public safety, and smart cities. Social spatiotemporal data is three-dimensional information including time, space, and social attributes. Social spatiotemporal data analysis and modeling refers to the use of spatiotemporal data, analysis and modeling, in order to solve the actual social problems of the technology, is the foundation of spatiotemporal social science. Through the study of this course, students will be able to understand the basic characteristics of spatiotemporal data in society, and be able to use some statistical software (Stata and Geoda) to analyze

and solve social problems, and through the usual practical operation and course assignments, they will cultivate the ability to utilize spatiotemporal data to actually analyze and solve social problems. In view of the interdisciplinary attributes of spatiotemporal data, this course is an introductory course tailored for undergraduates with no basic knowledge and no distinction between majors, and can be regarded as an overload course to carry on undergraduate and postgraduate. In the arrangement of the content, from easy to difficult, step by step; in the operation of the software, by hand to guide the students to carry out exercises in the way of teaching, to ensure that zero-basic students can also learn.

-End-

课程号（Course Number）： 18730003
课程名称（Course Title）：Stata数据分析与应用/Data Analysis and Applications with Stata
开课院系（School/Department）： 中国社会科学调查中心
学分（Credits）： 2
授课教师（Faculty）： 丁华 研究员 Research Fellow，吕萍 副研究员 Associate Research Fellow，任莉颖(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
本课程旨在帮助学生快速掌握Stata软件的使用技巧，并运用其进行数据分析。课程内容涵盖Stata软件基础、数据管理、变量处理、数据可视化、统计分析、回归分析等多个方面，并结合实际案例进行讲解，帮助学生将理论知识应用于实践。课程内容设计系统全面，涵盖Stata数据分析的各个方面，从基础到进阶，循序渐进。结合大量实际案例进行讲解，提供课程数据、详细的Stata操作步骤和代码，方便学生学习和复习。通过学习本课程，学生将能够熟练使用Stata软件进行数据分析，掌握常用的统计分析方法和模型，具备独立完成数据分析项目的能力。

英文简介（Course Description）：
This course is designed to help students quickly master the usage skills of Stata software and apply it to data analysis. The course content covers various aspects such as Stata software basics, data management, variable processing, data visualization, statistical analysis, and regression analysis, combined with practical case studies to help students apply theoretical knowledge to practice. The course content is systematically comprehensive, covering all aspects of Stata data analysis, from basics to advanced levels, progressing in a step-by-step manner. It incorporates a large number of practical case studies, providing course data, detailed Stata operation steps, and code to facilitate student learning and review. By taking this course, students will be able to proficiently use Stata software for data analysis, master common statistical analysis methods and models, and possess the ability to independently complete data analysis projects.

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课程号（Course Number）： 18730004
课程名称（Course Title）：计算社会科学理论与实践/Computational Social Science: Theory and Practice
开课院系（School/Department）： 中国社会科学调查中心
学分（Credits）： 3
授课教师（Faculty）： 姚佳慧 工程师 Engineer，陈薇 副研究员 Associate Research Fellow，王鹤媛 讲师 Lecturer

先修课程（Prerequisites）： 无

中文简介：
大数据、人工智能等先进计算技术与人文社会科学的深度融合推动了新兴交叉学科“计算社会科学”的蓬勃发展。计算社会科学为人文社会科学研究提供了前所未有的工具、视角和研究范式，也为计算科学研究拓展了新路径。
本课程面向人文社会科学专业学生开设，将带来以下收获：
1.通过课堂理论教学，提升人文社科专业学生在大数据和人工智能应用领域的前沿知识水平，拓宽其运用这些技术开展多学科交叉研究的视野。
2. 借助案例实践、产业前沿报告等多元化的教学形式，增强人文社科专业学生熟练运用先进的人工智能、大模型等技术进行人文社科研究实践的能力。

英文简介（Course Description）：
he deep integration of advanced computational technologies such as big data and artificial intelligence with the humanities and social sciences has driven the rapid development of the emerging interdisciplinary field of Computational Social Science. This field provides unprecedented tools, perspectives, and research paradigms for humanities and social science research, while also opening up new pathways for advances in computational science.

This course is designed for students majoring in the humanities and social sciences and aims to deliver the following outcomes:

Through theoretical instruction, students will enhance their understanding of cutting-edge developments in big data and artificial intelligence, and broaden their vision for applying these technologies in interdisciplinary research.
Through diverse teaching formats—including case-based practice and industry frontier reports—students will strengthen their ability to effectively apply advanced technologies such as artificial intelligence and large models in humanities and social science research.

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课程号（Course Number）：18730010
课程名称（Course Title）：社会调查实务/Social Surveys Practices
开课院系（School/Department）：中国社会科学调查中心
学分（Credits）：2
授课教师（Faculty）：丁华 研究员 Research Fellow，孙妍 副研究员 Associate Research Fellow，吕萍 副研究员 Associate Research Fellow，吴琼 研究员 Research Fellow

先修课程（Prerequisites）：《社会调查方法》

中文简介：
本门课程系统讲授社会调查的问卷设计、计算机辅助调查方法、调查执行流程、质量控制、数据库的建立与清理、抽样设计和权数计算的理论方法及其评估。本课程用一些调查案例展示如何进行科学严谨的社会调查，并通过实际调查中的各个环节对获取高质量的社会调查质量的重要性。

英文简介（Course Description）：
This course teaches theoretical methods and their evaluation of survey questionnaire design, computer assisted interviewing methods, the processes of survey, quality control, build and clean-up the database, sample design and weighting adjustment by theoretical methods and their evaluation of the database. This course uses some practical investigation cases to show how to do a scientific survey and then illustrate the importance of all survey aspects in ensuring the high quality survey data.

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课程号（Course Number）：18730020
课程名称（Course Title）：社会调查数据分析方法/The Analysis Methods of Social Survey Data
开课院系（School/Department）：中国社会科学调查中心
学分（Credits）：2
授课教师（Faculty）：任强 长聘副教授 ，顾佳峰 研究员 Research Fellow，孔涛 副研究员 Associate Research Fellow，吴琼 研究员 Research Fellow，丁华 研究员 Research Fellow，孙妍 副研究员 Associate Research Fellow，吕萍 副研究员 Associate Research Fellow。

先修课程（Prerequisites）：要求有一定定量分析能力

中文简介：
课程从常见的统计分析方法使用的误区入手，在讲授对于社会调查数据的各类统计分析方法的正确应用环境和条件之后，着重复杂抽样设计下的回归分析方法，常见的分类数据的分析方法、

工具变量的使用，以及体现交叉学科特点的空间计量分析方法。每天上午以讲课为主。下午则依据需要安排参与实践。从使用常见的统计软件进行数据整理入手，带领学员们运用实际数据进行软件操作，从而加深对授课内容的掌握，提高学员们的实际灵活运用能力。

英文简介（Course Description）：
The course begins from the common mistakes of statistical analysis and teachers students the proper application of regression analysis under different environment and conditions. Students will learn how to classify data, how to use instrumental variables and gain a better understanding of the use of capabilities of spatial analysis. Lectures are arranged in the morning and action learning is arranged in the afternoon. Students come learn from this course about the use of common statistical software and practice software operations with real data, which can improve students' practical and flexible skills.

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课程号（Course Number）：19530004
课程名称（Course Title）：城乡建成环境文化遗产研究与实践调查/Urban and Rural Built Environmental Cultural Heritage Research and Practice Investigation
开课院系（School/Department）：建筑与景观设计学院/School of Architecture and Landscape
学分（Credits）：2
授课教师（Faculty）：汪芳 教授 Professor

先修课程（Prerequisites）：无强制性先修课程。建议选课学生先修以下三类课程：
1）北京大学开设的“社会综合实践调查”本科生课程；
2）北京大学各院系开设的社会实践类相关课程；
3）北京大学考古文博学院、城市与环境学院等院系开设的遗产类相关课程。

中文简介：
“城乡建成环境文化遗产研究与实践调查”暑期课程是为全校本科生开设的野外调研课程，作为对“国家级一流本科课程”——社会综合实践调查课程的补充和延续。本暑期课程拟邀请地理学、考古学、水文水资源等相关领域专家开展跨学科教学，将理论与实践结合，聚焦于保有丰富物质遗存与文化资源的中国传统村落，多学科交叉，从自然地理、社会经济、建筑风貌、人文历史等方面认知文化遗产和传统村落，体悟并探索城镇化、城乡协同、地方性、流动性等多元视角及语境之下的文化遗产活态保护方法与内涵。课程着眼于引导学生积极探索历史过程中建成环境文化遗产的演变与响应机制，培养服务城乡未来发展的专业人才；强调文化遗产保护更新的区域性和交叉性，建立起一个更为全面科学认识建成环境文化遗产的知识框架。

英文简介（Course Description）：
The “Urban and Rural Built Environmental Cultural Heritage Research and Practice Investigation” summer course is open for undergraduate students, and serves as a supplement and continuation of the course of Social Practice and Investigation which

is a “national first-class undergraduate course”. In the summer course, experts in related fields will be invited to carry out interdisciplinary discussion combining theory with practice, and focusing on the Chinese traditional villages that retain rich material relics and cultural resources. Students are encouraged to understand the villages from the aspects of physical geography, social economy, landscape architecture, human history, etc., and explore the connotation and methods of the cultural heritage protection from different perspectives in the contexts of urbanization, urban-rural development, locality and mobility. This course aims to guide students to actively explore the evolution and response mechanism of cultural heritage in the historical process of the built environment, and cultivate professional talents to serve the future urban and rural development; emphasizes the regional and cross-disciplinary character of cultural heritage conservation and renewal, and establishes a comprehensive and scientific framework of cultural heritage.

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课程号（Course Number）： 20133003
课程名称（Course Title）：英国研究/British Studies
开课院系（School/Department）： 汇丰商学院
学分（Credits）： 3
授课教师（Faculty）： 刘芍佳 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
该课程为汇丰商学院在北大汇丰英国校区开设的本科生暑期课程，目的是通过几周的课程和访学交流，让学生全面了解英国的政治与公共政策、经济金融沿革和现状、历史文化、公共政策、法律以及外交关系等。具体课程内容包括了以下几个专题：英国历史和现状，英国的法律体系，英国媒体与国际关系，英国金融区块链、数字经济等新经济业态发展、英国在国际金融体系中的重要作用，英国的碳中和、绿色经济以及英国与欧盟的关系等话题。
课程通过互动、参与、体验、深度介入的浸入式教学方式，在课堂讲授的同时安排了学生的分组讨论、案例研讨，同时安排了学生在当地相关机构和企业的参访交流，也会组织学生前往剑桥大学和牛津大学体验英国的高等教育氛围。
该课程包括课堂讲授，案例介绍，小组讨论，实地考察，关键主题辩论以及研讨。通过本课程的学习，学生可提高独立思考能力和逻辑分析能力，学生通过全面学习深入地了解英国的历史与发展，有助于学生未来促进中国和英国、世界之间的国际交流与合作，具备国际化的视野，熟悉更广泛的国际政治、经济、法律、传播、文化知识，学习基本的跨文化管理理念。

英文简介（Course Description）：
This course is a summer course for undergraduates offered by HSBC Business School at Peking University HSBC UK Campus. The purpose is to give students a comprehensive understanding of British politics and public policy, economic and financial history

and current situation, history and culture, Public policy, law, and foreign relations. The specific course content includes the following topics: British history and current situation, British legal system, British media and international relations, British financial blockchain, digital economy and other new economic formats, the important role of the British in the international financial system, topics include carbon neutrality in the UK, the green economy, and the UK's relationship with the EU. Through the immersion teaching method of interaction, participation, experience, and deep intervention, the course arranges group discussions and case studies for students while teaching in the classroom. At the same time, it arranges students to visit relevant local institutions and enterprises and travel to Cambridge University and Oxford University to experience British higher education.
The course includes classroom lectures, case presentations, group discussions, field trips, debates on key topics, and seminars. Through the study of this course, students' independent thinking and logical analysis skills will be improved. Students will have a deeper understanding of British history through comprehensive learning, which will help students to promote international exchanges and cooperation between China, the UK and the world in the future, gain an international perspective, be familiar with a wider range of international political and economic knowledge, and learn basic cross-cultural management concepts.

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课程号（Course Number）： 20133006
课程名称（Course Title）：人工智能前沿技术与海外应用实践/Frontiers in Al:Global Innovations and Applied Practices
开课院系（School/Department）： 汇丰商学院
学分（Credits）： 2
授课教师（Faculty）： Domenico Tarzia 研究员 Research Fellow

先修课程（Prerequisites）： 无

中文简介：
《人工智能前沿技术与海外应用实践》课程致力于加深学生对人工智能发展的理解，通过理论学习和实地参访，学生将探索 AI 的起源、大模型、自然语言处理、智能治理、具身智能、数字生命、AIGC、AI+医疗、智能经济等前沿领域，同时了解 AI 在金融、法律、汽车、医疗等行业的实际应用。课程依托北京大学与英国顶尖高校及研究机构的学术资源，结合中西教育优势，提供深度与广度兼具的学术讲座和研讨。学生将有机会亲身体验英国的 AI 研究机构和知名企业，感受科技与产业的深度融合。此外，学生还将沉浸于英国的历史名城，体验独特的文化魅力，拓宽国际化视野。

英文简介（Course Description）：
The course aims to enhance students' understanding of AI development. Through a

combination of theoretical learning and field visits, students will explore topics ranging from the origins of AI, large models, natural language processing, intelligent governance, embodied intelligence, digital life, AIGC, AI+healthcare, to the intelligent economy. They will also gain insights into the practical applications of AI in industries such as finance, law, automotive, and healthcare. Leveraging the academic resources of Peking University and top UK universities and research institutions, the course integrates the educational strengths of the East and West to provide in-depth and comprehensive academic lectures and discussions. Students will have the opportunity to visit AI research institutions and renowned enterprises in the UK firsthand, experiencing the deep integration of technology and industry. Additionally, students will immerse themselves in the historical cities of the UK, appreciating its unique cultural charm and broadening their international perspective.

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课程号（Course Number）： 20133007
课程名称（Course Title）：数据科学与工程优化/Data Science and Engineering Optimization
开课院系（School/Department）： 汇丰商学院
学分（Credits）： 2
授课教师（Faculty）： Domenico Tarzia 研究员 Research Fellow

先修课程（Prerequisites）： 无

中文简介：
《数据科学与工程优化》课程由北京大学工学院与汇丰商学院联合推出，旨在提升学生在数据科学与工程优化领域的学术视野。课程内容涵盖数据科学、人工智能、工程优化等前沿学科。学生将通过沉浸式体验，感受牛津、剑桥的学术氛围，走访世界顶尖学府，拓展国际视野。此外，学生还将游览伦敦、牛津、剑桥，参观博物馆、学术机构，与牛津学子开展圆桌论坛，探讨中英教育体系，建立国际学术人脉。本课程为学生提供了高质量的学术资源和丰富的实践体验，是提升数据科学与工程优化能力的绝佳机会。

英文简介（Course Description）：
The course Data Science and Engineering Optimization, jointly launched by the School of Engineering and the HSBC Business School at Peking University, aims to broaden students' academic horizons in the fields of data science and engineering optimization. The curriculum covers cutting-edge disciplines such as data science, artificial intelligence, and engineering optimization. Through immersive experiences, students will engage with the academic atmosphere of Oxford and Cambridge, visit world-renowned institutions, and expand their global perspectives. Additionally, participants will explore London, Oxford, and Cambridge, tour museums and academic organizations, and participate in round-table forums with Oxford students to discuss the Chinese and British education systems while building international academic networks. This course

offers high-quality academic resources and diverse practical experiences, serving as an exceptional opportunity to advance expertise in data science and engineering optimization.

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课程号（Course Number）： 21130001
课程名称（Course Title）：植物发育及分子生物学/Plant Development and Molecular Biology
开课院系（School/Department）： 现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）： 2
授课教师（Faculty）： 邓兴旺 教授 Professor，陈雪梅 教授 Professor，陈浩东(校外) 待定 ，林辰涛(校外) 待定 ，杨贞标(校外) 待定

先修课程（Prerequisites）： 无先修课程

中文简介：
授课内容紧扣当今植物科学基础理论与应用领域内前沿与热点，详细介绍植物发育生物学和分子生物学的基本概念，以及各领域的研究工作、最新进展、经验和方法。课程内容包括：植物细胞极性和形态建成的信号转导机制；植物干细胞分化和调控的分子机制；植物生长发育信号的表观遗传机制；植物基因组分析在植物发育研究中的运用；植物光形态建成及光信号分子转导途径。

英文简介（Course Description）：
This summer course focuses on the basic concepts and research breakthroughs in plant biology, especially plant development and molecular biology. In addition, the instructors will introduce their own research work and their techniques in relevant fields. The courses will be divided into several parts:
1. Signaling in Cell Development
2. Stem Cell Regulation in Plant Development
3. Epigenetic Mechanisms in Signaling of Plant Development
4. Application of Plant Genome Analysis in the Study of Plant Development
5. Light Regulation of Plant Development

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课程号（Course Number）： 21130009
课程名称（Course Title）：中国农村教育问题专题/Topics in Education in Rural China
开课院系（School/Department）： 现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）： 2

授课教师（Faculty）：易红梅 教授 Professor

先修课程（Prerequisites）：无

中文简介：

《中国农村教育问题专题》以中国农村教育发展中的重要政策与现实问题为研究对象，从教育制度、人力资本形成与劳动力市场表现的关系出发，系统分析农村教育政策及其经济社会影响。课程首先介绍教育政策研究中常用的因果识别方法，为学生理解和评价教育政策效果提供基本的研究工具。在此基础上，课程围绕若干重要专题展开讨论，包括普职分流与综合高中改革背景下职业教育的界定与评价，高校毕业生就业中的”理想与现实“差距，以及专业选择、技术进步与劳动力市场表现之间的关系。同时，课程结合中国劳动力市场结构变化，探讨技术进步对农民工就业机会与就业流动的影响。通过理论讲解与研究案例相结合的方式，本课程帮助学生理解农村教育制度、技能形成与劳动力市场之间的互动机制，提升运用经济学理论与实证方法分析农村教育与就业问题的能力，并培养学生从现实政策与社会现象中识别研究问题、开展规范研究与政策分析的能力。

课程主要内容：

1.教育政策研究中常用因果识别方法简介（
2.从普职分流到综合高中：如何定义和评价职业教育？
(1)普职分流模式、历史与现状
(2)职业教育影响评估：指标与方法
(3)如何定义和评价职业教育？——现有研究的进展与局限
3.高校毕业生就业：理想与现实
(1)高校毕业生就业现状
(2)保留效用、保留工资与高校毕业生就业
(3)如何弥合理想与现实的差距？
4.专业选择、技术进步与劳动力市场表现
(1)技术进步与工作岗位变化
(2)专业、技术进步与劳动力市场表现
5.技术进步与农民工就业流动
(1)工业机器人与农民工非农就业
(2)向上？向下？——技术进步与农民工就业流动

英文简介（Course Description）：

This course explores major policy issues and real-world challenges in education across China. It reviews rural education policies and their socio-economic impacts from the perspective of how educational institutions, human capital development, and labor market outcomes connect. The course starts with an introduction to common causal identification methods used in education policy research, equipping students with core tools to understand and assess the effects of education policies. Building on this foundation, it covers key topics such as defining and evaluating vocational education within the context of the academic–vocational tracking system and the reform toward comprehensive high schools, the gap between expectations and reality in college

graduates' employment, and how choices about fields of study, technological progress, and labor market outcomes are linked. Additionally, considering structural changes in China's labor market, the course investigates how technological advancements influence migrant workers' job opportunities and mobility. Through a mix of theoretical discussion and empirical case studies, students learn about the interactions among rural education systems, skill development, and labor market dynamics. The course aims to enhance students' ability to apply economic theories and empirical methods to analyze issues related to rural education and employment, while also fostering their ability to identify research questions arising from real-world policies and social phenomena and to conduct thorough academic and policy analysis.

Main Topics

1. Introduction to Causal Identification Methods in Education Policy Research
2. From Academic–Vocational Tracking to Comprehensive High Schools: How Should Vocational Education Be Defined and Assessed?

a) The academic–vocational tracking system: models, historical evolution, and current status

b) Evaluating the impact of vocational education: outcomes and methods

c) Defining and assessing vocational education: progress and limitations in the existing literature

3. College Graduate Employment: Expectations and Reality

a) Status Quo of college graduate employment

b) Reservation utility, reservation wages, and graduates' employment choices

c) How can the gap between expectations and reality be narrowed?

4. Field of Study, Technological Change, and Labor Market Outcomes

a) Technological progress and changes in job structures

b) Field of study, technological change, and labor market performance

5. Technological Change and Migrant Workers' Employment Mobility

a) Industrial robots and migrant workers' off-farm employment

b) Upward or downward mobility? Technological change and migrant workers' employment transitions

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课程号（Course Number）： 21130013

课程名称（Course Title）：经济学模型CGE的基本原理及优化软件GAMS编程/Principles of CGE model and Programming

开课院系（School/Department）： 现代农学院/Peking University School of Advanced Agricultural Sciences

学分（Credits）： 2

授课教师（Faculty）： 解伟 教授 Professor

先修课程（Prerequisites）： 无

中文简介：

实证模型与定量分析已成为应用经济学与公共管理学研究的重要手段。“拍脑袋”、定性分析已经无法满足经济政策分析的需求。如政府要降低出口退税率，以便减少贸易顺差。到底退税率要减少多少？对就业有什么影响？对相关的不同产业，如服装、农业各有什么影响？

可计算一般均衡模型（Computable General Equilibrium Model, CGE）是一种最新发展起来的经济定量模型，它可以应用于许多研究领域（贸易、财政、环境等），并能给出实际的政策建议。它的特点是考虑到国民经济各个部分密切相关，牵一发而动全身，不仅对直接影响的部门做定量分析，而且考虑各个部门之间的相互依存和关联关系。本课程由浅入深，循序渐进，从模型需要的数据基础投入产出表讲起，讲解经济学的一些基本函数（生产、消费、投资、政府和贸易）和一般均衡理论；适时介绍相关的经济学理论，结合实例、练习和编程，将CGE标准模型的基本原理和结构讲清讲透；以掌握标准的CGE模型为基本目标，讲解CGE模型的基本原理。课程实例全部采用运筹优化软件GAMS语言编程，主要用于经济学基本函数的优化求解和CGE模型求解，也会探讨如何用于其他优化求解问题。

本课程既介绍CGE模型中的经济学原理，又与大家一起动手进行GAMS编程，使学生不但能掌握从理论出发针对问题建造和设计CGE模型，同时也能编写相应的GAMS程序来用计算机模拟CGE模型。

英文简介（Course Description）：

Empirical models and quantitative analysis have become important tools for applied economics and public administration. Meanwhile, “subjective decision making” through qualitative analysis no longer can satisfy the requirements of economic policy analysis. For example, in order to abate the trade balance, how much export subsidies should be lowered? How will this affect the labor market? How will this affect other relevant sectors like textile and agriculture?

Computable General Equilibrium (CGE) Model is the latest quantitative tool developed in economics area. It can be used in multiple research areas (trade, tax, environment etc.) to provide practical policy suggestions. One of its special features is that it not only can perform quantitative analysis of the direct affeced industrial sectors, but it can simulated the whole economic impact by considering the interdependence of all the sectors of the economy. This course is designed to take you step-by-step from basics of CGE model to a higher level (a standard CGE model). The course starts with Input-Output tables and later explains the functional relationships (production, consumption, investment, government and trade) in economic system and ends with general equilibrium theory and standard CGE model. The course will be mixed with relevant economic theory, practical examples and programming. The CGE model will use the optimization software “GAMS” for explaining the practical examples. In our course, GAMS will mainly be used for optimizing the CGE model, but it will also used to solve other optimization examples to expand your knowledge.

In this course, students will not only master how to confront a problem from theoretical side by constructing a CGE model but will also learn how to compile GAMS routines to

solve optimization problems in CGE and other models.

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课程号（Course Number）：21130016
课程名称（Course Title）：食物安全：政治经济学和心理学研究/Food Security: Political Economics and Psychology
开课院系（School/Department）：现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）：2
授课教师（Faculty）：王晓兵 教授 Professor
先修课程（Prerequisites）：无

中文简介：
食物在中国始终是一个古老而年轻的话题。农业经济思想可以追溯到远古时代，我国春秋时期，孔子和孟子的著作中已有诸多关于农业制度与政治、安定民生的论述。“哥伦布大交换”、人口增长和迁移奠定了现代文明的基石。上世纪曾发生的数次大饥荒，仍给不少人保留下深刻的饥饿记忆。在食物贸易和全球食物价值链供给背景下，我们的膳食偏好和食物消费也正悄然发生变化，引发现代人对肥胖和健康的思考。心理学的交叉研究帮助我们识别食物消费决策机理，引导着理性食物消费。食物安全与消费也需关注食物浪费、环境与能源的可持续性。本课程将从理解全球、国家和家庭等不同尺度的食物安全讲起，在回忆历史上次大饥荒事件的基础上，梳理全球食物安全的演变过程。运用经济学和心理学的交叉研究理解食物消费中的差异化行为。最后本课程还将探讨现代农业中的食物浪费、环境与能源问题如何影响我们未来的食物安全与消费。选修《食物安全：政治经济学与心理学》，关注食物安全与消费。

英文简介（Course Description）：
Food security has always been debated burningly since the taste of herbs by Shennong which created the era of “slash and fire” and the publication of the agronomy encyclopedia. The thoughts of agricultural economy can be traced back to the ancient times. Confucius and Mencius had many expositions on agricultural operation, institutions and the livelihood. "Columbian exchange", population growth and migration laid the cornerstone of modern civilization. Many people still deeply remember the hunger due to several famine events in the last century. In the context of food trade and the value chains of global food supply, our dietary preferences and food consumption are also changing. These trigger the deep thinking about obesity and health. Interdisciplinary studies in psychology help us identify food consumption decision mechanisms, and then the results will guide rational food consumption. Food safety and consumption should also focus on food waste, environmental and energy sustainability. This lecture presents the definition of food security from global, national and households’ dimensions. After studying the several famines in history internationally and nationally, we analyze the evolution of global and China’s food security policy. Using the Interdisciplinary studies between economics and psychology, we will better

understand the differential behavior in food consumption. Finally, this lecture will also explore how food waste, environmental and energy issues in modern agriculture, which influence our future food safety and consumption. This lecture motivates the students focusing on “Food security and consumption” Welcome to “Food Security: Political Economics and Psychology”!

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课程号（Course Number）：21130017
课程名称（Course Title）：发展经济学及其在中国的实践/Development Economics and Its Practice in China
开课院系（School/Department）：教务部
学分（Credits）：3
授课教师（Faculty）：刘承芳 教授 Professor

先修课程（Prerequisites）：无。

中文简介：
改革开放40年我国贫困人口减少了近7亿，对全球贫困人口数量减少的贡献超过90%。但截至2018年底我国仍有1660多万农村贫困人口。为何我国能取得如此巨大的减贫成就？新形势下如何实现脱贫攻坚目标？如何理解我国收入差距的变化？如何成功跨越中等收入陷阱，促进经济社会转型？

针对这些问题，本课程将首先介绍发展经济学基本理论，然后从自然区位环境、人口和家庭婚育行为、劳动力就业和迁徙、农村公共物品提供和人力资本培育等角度回顾我国的发展历程，总结发展经验，剖析进一步发展面临的挑战。最后本课程将通过分享授课教师多年来开展的大量试验研究，与大家共同探索如何通过提升人力资本助力我国成功跨越中等收入陷阱。

本课程旨在丰富学生在发展经济学方面的基本理论知识和实证分析方法，了解该领域的学科进展，脚踏实地的感受中国农村减贫和发展的脉搏。

英文简介（Course Description）：
This course will cover topics in development economics through the lens of China’s experience. Although the main goal will be for students to gain an understanding of concepts in development economics, the course will cover these concepts with a focus on how they relate to the institutional changes and economic policies and that have shaped China’s economic emergence as well as the country’s current development challenges. Development economics is a broad field and impossible to be comprehensively cover within 32 hours. As such, this course will be a survey of select topics most relevant to China. We will also cover some basic statistical measurement issues and impact evaluation methods important for understanding modern research in development economics. Materials will be covered at the undergraduate level. All lectures and

discussions will be conducted in English.

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课程号（Course Number）：21130019
课程名称（Course Title）：计量经济学因果识别方法详解/An Introduction to Causality Identification Methods
开课院系（School/Department）：现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）：2
授课教师（Faculty）：黄开兴 助理教授

先修课程（Prerequisites）：高等数学，经济学原理，初级计量经济学

中文简介：
断点回归（RDD）、双重差分（DID）和工具变量法（IV）是经济学研究中最常用的因果识别方法。掌握这些方法的基本运用并不难，难的是如何在自己的研究中准确的运用这些方法。这是由于每一类方法都有众多延伸，例如，DID家族中的常用方法就有二期DID、多期DID、处理时间差异DID、处理强度差异DID、IV-DID、PSM-DID、RD-DID、Synthesized-DID、Event Study等等。由于每种方法的适用情景和假设各有差异，当研究者面对一份特异的研究数据时，恰当选择和运用因果识别模型就成了一个重大挑战。因果识别模型的错误运用已经成为研究论文被拒稿的最主要原因之一。
本课程基于对大量实证文章的系统总结，对RDD、DID、IV这3大因果识别方法进行系统介绍。有别于传统的因果识别课程，本课程并不是对因果识别方法的全面概述，而是从实践的角度，针对3类最常用的因果识别方法进行深入剖析。本课程的教学过程将涉及上百篇实证论文。通过对这些论文的系统总结、归纳和对比，学生将掌握每个因果识别方法的假设、运用情景和注意事项，使熟练运用这些方法成为可能。

英文简介（Course Description）：
The Regression Discontinuity Design (RDD), Difference-in-Differences model (DID), and Instrumental Variable methods (IV) are the most commonly used causal identification methods in economics research. It is not difficult to master the basic application of these methods, but the difficulty is how to accurately use these methods in your own research. This is due to the fact that each type of method has many extensions. For example, the commonly used methods in the DID family include two-phase DID, multi-phase DID, time-varying DID, intensity-varying DID, IV-DID, PSM-DID, RD- DID, Synthesized-DID, Event Study, etc. Since the applicable scenarios and assumptions of each method are different, when researchers are faced with a specific research data, it becomes a major challenge to properly select and use a causal identification model. Misuse of causal identification models has become one of the top reasons for rejection of research papers. Based on a systematic summary of a large number of empirical articles, this course will systematically introduce the three causal identification methods of RDD, DID, and IV.

Different from traditional causal identification courses, this course is not a comprehensive overview of causal identification methods, but an in-depth analysis of the three most commonly used causal identification methods from a practical point of view. The teaching process of this course will involve hundreds of empirical papers. Through the systematic summary, induction and comparison of these papers, students will master the assumptions, application scenarios and precautions of each causal identification method, making it possible to use these methods proficiently.

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课程号（Course Number）：21130020
课程名称（Course Title）：数字技术与经济发展：文献导读和案例讨论/Digital Technology and Economic Development: Literature and Cases
开课院系（School/Department）：现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）：2
授课教师（Faculty）：王悦 助理教授

先修课程（Prerequisites）：无先修要求

中文简介：
从电报、手机、到互联网电商，ICT技术的更新换代给商品市场、生产者和消费者带来了哪些变化？这其中有什么相通的经济学原理？社交媒体对于人们的福利产生什么影响？它造成了观点的两级分化吗？数字技术革新与农业生产会产生什么样的碰撞？手机会成本新农具吗？如何从经济学角度理解人工智能辅助决策与人类互动的？这对劳动力市场的意义与传统的机械自动化有什么不同？ChatGPT为代表的大模型可能预示着通用人工智能时代的到来。它会解决哪些问题，又带来哪些挑战？
本课程讨论数字技术在经济发展中发挥的作用。我们将通过文献导读带领同学们从经济学角度思考上述问题，并结合案例的讨论启发同学们思考正在经历的技术变革可能带来哪些经济影响。

英文简介（Course Description）：
From telegraph, mobile phone, to e-commerce, what changes have ICT technology updates brought to commodity market, producers and consumers? What are the common economic principles in this? What impact does social media have on people’s welfare? Does it cause a polarization of opinions? Will digital technology innovation change agricultural production? Will mobile phones become new farming tools? How to understand the interaction between artificial intelligence assisted decision-making and human beings from an economic perspective? What does this mean for the labor market and how is it different from traditional mechanical automation? ChatGPT as a representative of large models may herald the arrival of the era of general artificial intelligence. What problems will it solve and what challenges will it bring? This course discusses the role of digital technology in economic development. We will lead students to think

about these questions from an economic perspective through literature reading. We will also inspire students to think about what economic impacts may be brought by the technological changes they are experiencing through case discussions.

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课程号（Course Number）： 21130024
课程名称（Course Title）：环境和发展经济学：理论和前沿/Environmental and Development Economics: Theory and Frontiers
开课院系（School/Department）： 现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）： 2
授课教师（Faculty）： 赖汪洋 预聘副教授

先修课程（Prerequisites）： 微观经济学（初级），计量经济学（初级）

中文简介：
本课程通过理论学习、案例分析和实证研究，探讨环境保护与经济发展之间的复杂关系。课程分为两大模块：模块一（第1-10周）聚焦环境与发展经济学的理论基础与热点问题；理论基础包括外部性、市场失灵、环境资源价值评估、环境政策工具等；热点问题包括环境与农业、健康、贸易、贫困、不平等等发展议题的相互关系。模块二（第11-16周）关注实证研究方法，探讨如何使用现代计量经济学的方法研究具体环境介质（如空气污染、水污染、生物多样性等）和社会发展的相互影响。

英文简介（Course Description）：
This course explores the complex relationship between environmental protection and economic development. The course is divided into two major modules: Module 1 (Weeks 1-10) focuses on the theoretical foundations and hot topics in environmental and development economics. The theoretical foundations include externalities, market failures, environmental resource valuation, and environmental policy tools. The hot topics cover the interrelationships between the environment and development issues such as agriculture, health, trade, poverty, and inequality. Module 2 (Weeks 11-16) emphasizes empirical research methods, exploring how to use modern econometric techniques to study the interactions between environment (e.g., air pollution, water pollution, biodiversity) and development.

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课程号（Course Number）： 21130025
课程名称（Course Title）：经济学英文论文写作：实践与AI应用/Economics Thesis Writing in English: Practice and AI Applications

开课院系（School/Department）：现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）：2
授课教师（Faculty）：黄开兴 助理教授

先修课程（Prerequisites）：无

中文简介：
高年级本科生和研究生（乃至青年学者）在经济学英文期刊论文的写作与发表过程中常面临诸多困惑，例如：如何判断选题的研究价值，如何选择合适的因果识别方法，如何构建理论模型以指导实证分析，论文达到何种水平才能获得发表，应投向哪个级别的国际期刊，以及收到审稿意见后应如何修改等。这些困惑普遍存在并不令人意外，因为在大多数高校的培养方案中，论文写作与发表并非核心课程。遗憾的是，由于相关知识的欠缺，许多优秀的学生和青年学者尽管掌握了扎实的理论与实证研究方法，却仍频繁在英文期刊发表上遭遇挫折。

与此同时，近年来人工智能技术的迅猛发展使其在论文写作中的应用日益广泛。能否恰当运用AI工具提升英文科技论文的写作质量，已成为影响研究效率与成果水平的关键因素，而目前相关的课程教学仍较为匮乏。

本课程旨在为有志于从事高水平经济学实证研究的高年级本科生和研究生提供一次深入理解经济学英文期刊论文发表全过程的系统学习机会。通过32学时的学习，学生将全面把握从选题到发表的各个环节，并深入了解AI技术在各阶段的合理应用。值得强调的是，本课程并非简单介绍论文写作与发表的流程，而是深入剖析发表一篇高水平经济学英文论文所需的全面技能，具体包括：选题技巧、文献综述方法、数据获取与分析策略、理论模型在实证研究中的应用、因果识别策略、英文写作技巧、投稿与修改技巧等，并将AI技术的实际应用贯穿融合于每一部分内容之中。

英文简介（Course Description）：
Senior undergraduate and graduate students (as well as early-career researchers) often face numerous challenges when writing and publishing academic papers in English in the field of economics. Common questions include: what kind of topics are worth researching, which causal identification methods should be adopted, how to build theoretical models to guide empirical analysis, what level of work is publishable, which international journals to target, and how to revise papers in response to reviewer comments. It is unsurprising that such confusion is widespread, as most universities do not include thesis writing and publication as core courses in their curricula. Unfortunately, due to a lack of relevant knowledge, many talented students and early-career researchers—despite having strong theoretical and empirical research skills—frequently encounter setbacks in publishing in English economics journals.

Meanwhile, the rapid development of AI technology in recent years has made its application in academic writing increasingly prevalent. Mastering appropriate AI tools to enhance the quality of English scientific writing has become a critical factor influencing both the efficiency and quality of research. However, relevant

instructional courses remain scarce.

This course aims to provide senior undergraduates and graduate students aspiring to conduct high-level empirical economic research with an in-depth opportunity to understand the entire process of publishing in English economics journals. Over 32 class hours, students will gain a comprehensive understanding of the complete journey from topic selection to publication, with detailed explanations of the (appropriate) application of AI technology at each stage. It is worth emphasizing that this course is not merely an introduction to the process of paper writing and publication; rather, it delves deeply into the comprehensive skills required to publish a high-quality English economics paper. These skills include topic selection strategies, literature review methods, data acquisition and analysis techniques, the application of theoretical models in empirical research, causal identification strategies, English writing techniques, and submission and revision skills—all integrated with the practical application of AI technology throughout each component.
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课程号（Course Number）：21130026
课程名称（Course Title）：非参数方法和机器学习在经济学中的应用/Applications of Nonparametric Methods and Machine Learning in Economics
开课院系（School/Department）：现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）：2
授课教师（Faculty）：皮鲁鲁 助理教授

先修课程（Prerequisites）：数学分析（或微积分），线性代数，概率论与数理统计，计量经济学

中文简介：
《非参数方法以及机器学习在经济学中的应用》是一门面向全校学生开设的交叉型前沿课程，旨在系统讲授非参数方法与机器学习的基本理论、方法原理及其在经济学研究中的实践应用，帮助学生建立现代数据分析思维，提升解决经济学前沿问题的能力。课程内容涵盖非参数方法与机器学习两大模块。其中，非参数部分重点介绍基本概念、核方法、级数方法以及Bootstrap和Jackknife等统计推断工具，使学生理解如何在较少依赖函数形式假设的条件下识别和估计经济关系。机器学习部分则进一步覆盖模型评估与模型选择、LASSO与Ridge等收缩方法、最近邻方法、决策树与集成学习、支持向量机、深度学习以及双重机器学习、因果森林等因果机器学习前沿内容。课程在教学安排上注重理论与实践相结合，以“理论讲解+代码实操”为主要形式，使用Python开展应用训练，并结合经典教材与前沿论文阅读，引导学生掌握从方法理解、程序实现到研究应用的完整能力链条。通过本课程的学习，学生不仅能够系统掌握现代计量与机器学习方法，还能够提升代码实操、论文阅读和独立研究能力，为开展高水平经济学实证研究打

下坚实基础。

英文简介（Course Description）：
Nonparametric Methods and Machine Learning in Economics is an interdisciplinary and frontier-oriented course designed for students across the university. It aims to provide a systematic introduction to the fundamental theories, methodological principles, and practical applications of nonparametric methods and machine learning in economic research. The course is intended to help students develop a modern data-analytic mindset and strengthen their ability to address cutting-edge questions in economics.The course consists of two main components: nonparametric methods and machine learning. The nonparametric section introduces key concepts and commonly used approaches, including kernel methods, series estimation, and statistical inference tools such as the bootstrap and jackknife. This part emphasizes how to identify and estimate economic relationships with fewer functional form assumptions than traditional parametric models, thereby offering greater flexibility in empirical analysis.The machine learning section covers a broad range of core methods and modern applications, including model evaluation and model selection, regularization techniques such as LASSO and Ridge, k-nearest neighbors, decision trees and ensemble learning, support vector machines, and deep learning. In addition, the course introduces recent developments at the intersection of econometrics and machine learning, such as double machine learning and causal forests, with a focus on their use in causal inference and policy evaluation.In terms of teaching design, the course combines theoretical instruction with hands-on coding practice. Lectures are organized around a “theory plus implementation” framework, with Python used as the primary programming language for empirical applications. Through the study of both classic textbooks and frontier academic papers, students will be guided to build an integrated skill set that connects methodological understanding, computational implementation, and research application.By the end of the course, students are expected to acquire a solid understanding of modern nonparametric and machine learning methods, improve their programming and empirical research skills, enhance their ability to read and evaluate academic literature, and develop the capacity to conduct independent research in economics.

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课程号（Course Number）： 21130027
课程名称（Course Title）：中国农村发展前沿专题/Topics in China's Rural Development
开课院系（School/Department）： 现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）： 2
授课教师（Faculty）： 朱炯 预聘副教授

先修课程（Prerequisites）： 无强制先修课程要求（建议先修微观经济学、宏观经济学、计量

经济学）。

中文简介：
本课程将以前沿专题的形式，进行农村发展领域的知识传授。学习本课程的学生将掌握中国农村发展相关的理论基础，并形成以此分析当前中国农村现实问题的实践应用能力。课程主要内容分由三部分构成：1.农村发展理论基础：农村土地市场、劳动力市场与移民、农村信贷与微型金融、创业与城乡资本流动、公共社会保障理论；2.中国农村发展前沿问题：农村产业政策、区域导向性政策、城乡二元结构、农村公共服务与基础设施、农村贫困与反贫困、农业社会化服务体系、农村社会保障体系；3.农村发展前沿交叉主题：心理学与农村发展、农业早期发展的长期影响、生物多样性。课程主要由授课老师讲授为主，课堂上包含讨论互动环节，课后包括学生合作探讨作业。无强制先修课程，建议先修微观经济学、宏观经济学、计量经济学。

英文简介（Course Description）：
This course imparts knowledge in the field of rural development through a series of advanced topical modules. Students enrolled in this course will master the theoretical foundations relevant to China's rural development and cultivate the practical capacity to apply these theories in analyzing current real-world issues in rural China. The core content of the course consists of three components: Theoretical Foundations of Rural Development: Rural land markets, labor markets and migration, rural credit and microfinance, entrepreneurship and urban-rural capital flows, and theories of public social security. Frontier Issues in China's Rural Development: Rural industrial policies, place-based policies, the urban-rural dual structure, rural public services and infrastructure, rural poverty and poverty alleviation, agricultural socialized service systems, and the rural social security system. Cross-Cutting Frontier Themes in Rural Development: Psychology and rural development, the long-term impacts of early agricultural development, and biodiversity. The course is primarily lecture-based, integrating interactive classroom discussions and collaborative post-class assignments. There are no mandatory prerequisites, though prior coursework in Microeconomics, Macroeconomics, and Econometrics is recommended.

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课程号（Course Number）： 21130028
课程名称（Course Title）：现代食品体系中的食物选择心理学/The Psychology of Food Choice in Modern Food Systems
开课院系（School/Department）： 现代农学院/Peking University School of Advanced Agricultural Sciences
学分（Credits）： 2
授课教师（Faculty）： 刘红中 副教授 Associate Professor，Mei Peng(校外) 待定

先修课程（Prerequisites）： This course is open to undergraduate students from a wide range of disciplines, including psychology, nutrition, agriculture, public health, and

behavioural sciences and those who are interested in the topic. No prior background in sensory science or psychology is required.

中文简介：
本课程探讨当代全球食品环境中影响人类食品选择的心理机制。课程借鉴心理学、感官科学和行为科学的研究成果，探究感知、学习、情感和社会情境如何影响饮食行为。主题包括味觉和嗅觉的感官感知、大脑中风味的构建、食物偏好和厌恶的发展、食物恐惧症和厌恶、饮食的文化影响以及与食品相关决策所涉及的认知过程。本课程还将探讨现代食品环境（包括工业化农业、全球食品供应链和新兴食品技术）如何与人类心理学相互作用，从而塑造饮食模式。

英文简介（Course Description）：
Overview: This course examines the psychological mechanisms that shape human food choices within contemporary global food environments. Drawing on research from psychology, sensory science, and behavioural science, the course explores how perception, learning, emotion, and social context influence eating behaviour. Topics include sensory perception of taste and smell, the construction of flavour in the brain, development of food preferences and aversions, food neophobia and disgust, cultural influences on diet, and cognitive processes involved in food-related decision making. The course will also consider how modern food environments – including industrial agriculture, global food supply chains, and emerging food technologies – interact with human psychology to shape dietary patterns.

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课程号（Course Number）： 23200017
课程名称（Course Title）：工程实训/Engineering Training
开课院系（School/Department）： 材料科学与工程学院/School of Materials Science and Engineering
学分（Credits）： 3
授课教师（Faculty）： 高嵩 高级工程师 Senior Engineering，邹如强 教授 Professor，莫凡洋 长聘副教授 ，王永刚 助理教授 ，孟繁琦 工程师 Engineer，海晓 助理教授

先修课程（Prerequisites）： 无。

中文简介：
课程内容以传统机械加工及材料加工工艺为基础，使学生系统掌握工程训练的一些基本操作技能和各种材料加工方法；熟练掌握常用设备的结构原理及其安全操作规程、加工设备的操作方法和加工技能。在此基础上，进一步采用设计、仿真、实物制作相结合的方式，完成从设计到制造的全过程，实现工+机+智能+制造综合实训。本课程进阶将3D打印、人工智能和机器人、大型仪器设备讲解与观摩、实物制作等技术引入教学环节中，全面提升教学实践方法和科学研究手段，引导学生具有创新意识，数据意识，效率意识，懂得掌握先进工具的重要性，形成基础学科拔尖学生培养的创新范式。推出“理论实践融合、项目贯穿始终、智能化全链条”的全新

实践教学模式，不断探索卓越创新工程人才培养，打造成一门“大国工匠必修课”。

英文简介（Course Description）：
The course content is based on traditional machining and material processing technology, so that students can systematically master a variety of material processing methods of engineering training; Familiar with the structure principle of common equipment and its safe operation procedures, operation methods and processing skills of processing equipment. On this basis, further using the design, simulation, physical production of a combination of the way to complete the whole process from design to manufacturing, to achieve industrial + machine + intelligent+manufacture comprehensive practical training. This course will further introduce 3D printing, artificial intelligence, robotics, explain and observe large instruments and equipment, physical production and other technologies into the teaching process, comprehensively improve teaching practice methods and scientific research methods, guide students to have the awareness of innovation, data awareness, efficiency awareness, understand the importance of mastering advanced tools, and form an innovation paradigm for cultivating top-notch students in basic disciplines. It has launched a new practical teaching model of "integration of theory and practice, throughout the project, and the whole intelligent chain", constantly exploring the cultivation of outstanding and innovative engineering talents, and building it into a "compulsory course for craftsmen in a big country".

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课程号（Course Number）： 23200018
课程名称（Course Title）：工程实训B/Engineering Training B
开课院系（School/Department）： 材料科学与工程学院/School of Materials Science and Engineering
学分（Credits）： 2
授课教师（Faculty）： 高嵩 高级工程师 Senior Engineering，邹如强 教授 Professor，莫凡洋 长聘副教授 ，王永刚 助理教授 ，孟繁琦 工程师 Engineer，海晓 助理教授

先修课程（Prerequisites）： 无。

中文简介：
《工程实训B》这门课程是针对农学、医学、人文、经管类等非理工科专业学生开设，通过传统机械加工工艺、先进制造技术的学习和实践，使学生对工程材料与制造工艺形成感性认知。

从学科特点和人才培养目标出发，各院系各学科均有不同程度的实践类实验教学需求。本门课程在保留一定量的基本实训操作外，再根据各院系、各学科特色设置具有针对性、创新性、探索性、强度存在差别性的授课模块，供不同学科学生进行选择，包括数控编程、虚拟仿真、3D打印、AI实训、大型仪器设备认知等。

在训练学生创新意识和实践动手能力的同时，着重培养学生的工程意识、劳动意识；培养学生勤于思考、开拓创新、勇于实践、理论联系实际的作风；以及热爱劳动、团结互助等优

良品质，拓宽专业视野，增强就业竞争力。

英文简介（Course Description）：

“Engineering Training B” is a course offered to students in various majors such as agriculture, medicine, humanities, and economics and management. Through the study and practice of traditional mechanical processing technology and advanced manufacturing technology, students can form a perceptual understanding of engineering materials and manufacturing processes.

From the perspective of disciplinary characteristics and talent training objectives, each college and discipline has different practical experimental teaching needs to varying degrees. In addition to retaining a certain amount of basic operations for engineering training , this course sets up targeted, innovative, exploratory, and different teaching modules according to the characteristics of each college and discipline for students to choose from. These modules include numerical control programming, virtual simulation, 3D printing, AI training, and preliminary exploration of large-scale instrument equipment.

While training students’ innovative awareness and practical skills, this course focuses on cultivating students’ engineering awareness and labor awareness; encouraging students to think critically and creatively; fostering a willingness to experiment and apply theory to practice; as well as promoting positive qualities such as a love of labor and unity and mutual assistance. It broadens students’ professional horizons and enhances their competitiveness in employment.

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课程号（Course Number）： 23200018
课程名称（Course Title）： 工程实训B/Engineering Training B
开课院系（School/Department）： 材料科学与工程学院/School of Materials Science and Engineering
学分（Credits）： 2
授课教师（Faculty）： 高嵩 高级工程师 Senior Engineering，邹如强 教授 Professor，莫凡洋 长聘副教授 ，孟繁琦 工程师 Engineer，海晓 助理教授 ，王永刚 助理教授
先修课程（Prerequisites）： 无。

中文简介：

《工程实训B》这门课程是针对农学、医学、人文、经管类等非理工科专业学生开设，通过传统机械加工工艺、先进制造技术的学习和实践，使学生对工程材料与制造工艺形成感性认知。

从学科特点和人才培养目标出发，各院系各学科均有不同程度的实践类实验教学需求。本门课程在保留一定量的基本实训操作外，再根据各院系、各学科特色设置具有针对性、创新性、探索性、强度存在差别性的授课模块，供不同学科学生进行选择，包括数控编程、虚拟仿真、3D打印、AI实训、大型仪器设备认知等。

在训练学生创新意识和实践动手能力的同时，着重培养学生的工程意识、劳动意识；培

养学生勤于思考、开拓创新、勇于实践、理论联系实际的作风；以及热爱劳动、团结互助等优良品质，拓宽专业视野，增强就业竞争力。

英文简介（Course Description）：

“Engineering Training B” is a course offered to students in various majors such as agriculture, medicine, humanities, and economics and management. Through the study and practice of traditional mechanical processing technology and advanced manufacturing technology, students can form a perceptual understanding of engineering materials and manufacturing processes.

From the perspective of disciplinary characteristics and talent training objectives, each college and discipline has different practical experimental teaching needs to varying degrees. In addition to retaining a certain amount of basic operations for engineering training , this course sets up targeted, innovative, exploratory, and different teaching modules according to the characteristics of each college and discipline for students to choose from. These modules include numerical control programming, virtual simulation, 3D printing, AI training, and preliminary exploration of large-scale instrument equipment.

While training students’ innovative awareness and practical skills, this course focuses on cultivating students’ engineering awareness and labor awareness; encouraging students to think critically and creatively; fostering a willingness to experiment and apply theory to practice; as well as promoting positive qualities such as a love of labor and unity and mutual assistance. It broadens students’ professional horizons and enhances their competitiveness in employment.

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课程号（Course Number）： 23200031
课程名称（Course Title）：认知实习/Cognitive Practice
开课院系（School/Department）： 材料科学与工程学院/School of Materials Science and Engineering
学分（Credits）： 1
授课教师（Faculty）： 高鑫 助理教授

先修课程（Prerequisites）： 无

中文简介：

为服务国家战略需求，瞄准前沿工程科技领域，推动工程科学技术创新和战略管理创新，加快培养国家亟需的工程技术领域青年人才，材料科学与工程学院设置认知实习课程。材料科学与工程学院开展授课工作，组建具有丰富科研与产业实践的师资团队，合作企业提供丰富的实践资源。课程旨在引导学生在科技大变革的背景下，突破研究与思维范式，思考如何“做有趣的研究，做有意义的研究”，让学生能够走进企业，了解企业，做到“有所学，有所用”。本课程具体将采用“课程讲授/报告、企业参观、企业实践”等方式进行。

英文简介（Course Description）：
In order to accelerate the cultivation of young talents in the field of engineering, the School of Materials Science and Engineering will set up a cognitive practice course, focusing on the advances of materials science. The cooperative enterprises would provide industrial resources. The course aims to guide students to break thinking paradigms, and think about how to do “better” research.The students will visit the enterprise, and learn about the enterprise. This course will be conducted through course lectures and corporate tour/practice.

-End-

课程号（Course Number）： 23200032
课程名称（Course Title）：“材料+”科创实践/"Materials+"Innovation and Entrepreneurship Lecture
开课院系（School/Department）： 材料科学与工程学院/School of Materials Science and Engineering
学分（Credits）： 1
授课教师（Faculty）： 林立 助理教授

先修课程（Prerequisites）： 无

中文简介：
为服务国家战略需求，瞄准前沿工程科技领域，推动工程科学技术创新和战略管理创新，加快培养国家亟需的工程科技领军人才，学院将设置材料工程实践课程。材料学院指派专人负责学员选拔和授课组织工作，合作企业提供产业资源。学院将出面聘请知名企业家及其团队、海内外具有丰富产业化经验的顶尖学者组成师资团队。课程旨在引导学生在科技大变革的背景下，思考加速技术转移转化、实现社会经济价值的原理与方法。具体将采用“学术报告、课程讲授、圆桌论坛与模拟路演、企业实践”等四种方式进行。

英文简介（Course Description）：
Focusing on the advances of materials science, the School of Material Science and Engineering will set up the course of Material innovative practice to promote the strategic management innovation of engineering science and technology and cultivate leading talents in engineering science and technology urgently needed by the country. The School of Material Science and Engineering would assign special personnel to be responsible for student selection and teaching organization, and cooperative enterprises would provide industrial resources. The college will hire well-known entrepreneurs and their teams, and top scholars with rich industrialization experience at home and abroad to form a teaching team. The course aims to guide students to think about the principles and methods of accelerating technology transfer, and realizing social and economic value, under the background of great technological change.

Specifically, the course will be carried out in four ways: "academic reports, course lectures, round table forums and simulated roadshows, and corporate practice".

-End-

课程号（Course Number）： 30340052
课程名称（Course Title）：中国传统健身、饮食与养生/Chinese Traditional Body Exercise, Diet and Health Preservation
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 王东敏 教学教授

先修课程（Prerequisites）： No pre-requisites to enroll in this course.
All undergraduates might be the Target audience.

中文简介：
本课程为中文授课。

英文简介（Course Description）：
It is said there are three things interest westerners about china: food, health preservation, and finance. Those students who enroll in the course of Chinese Traditional Body Exercise, Diet and Health preservation will have chance to experience two of the three hot topics and know how the ancient Chinese people maintain their health via simple but effective body exercise and balance diet. The course will not only introduce and practice the most popular body exercises, such as Taiji, Baduanjin, Wuqinxi, but also the most mystery one, which is frequently appeared in the most popular martial arts novels, such as Yijingjing and Qigong. All the exercises will be demonstrated by the teaching assistants who are experts in that filed. The course will also apply the foundations of Traditional Chinese Medicine, such as basic conceptions, theories, and principles of Health preservation in TCM and reveal Chinese diet, which sometime play important roles as medicine and why. As one of the complementary common methods of health preservation, the acupuncture, moxibustion, and massage will be introduced as well. The course designer wish finally western undergraduates understand the associations between exercise, diet and health in very Chinese health preservation's way.

-End-

课程号（Course Number）： 30340056
课程名称（Course Title）：镜中观花：中国人的价值观/FLOWER IN THE MIRROR: THE CHINESE VALUES

开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 韩金鹏 副教授 Associate Professor

先修课程（Prerequisites）：

中文简介：
本课程为英文授课。

英文简介（Course Description）：
The present course helps investigate the realm of values in which a Chinese approaches his family, love life, friends, education, career, and serious issues like nature, space, time, and inevitably, life and death. Texts cover a wide range of sources including classical and contemporary literature, social wisdoms and folklores, ancient philosophies and latest twitter discussions. In passing, there will also be substantial discussions on how a Chinese waves his lances of values and gropes for his identity in the postmodern maelstrom of information, globalization and political economy. It thus aims at a comprehensive understanding of Chinese values in the comparative light of tradition and individuality and of the Chinese in the eyes of other peoples and cultures and vice versa.

-End-

课程号（Course Number）： 30340059
课程名称（Course Title）：中国古典诗词/Classical Chinese Poetry
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 梅申友 副教授 Associate Professor

先修课程（Prerequisites）： Some basic knowledge of Chinese is preferable, but not mandatory.

中文简介：
本课程为英文授课。

英文简介（Course Description）：
As a time-honored genre, poetry enjoyed an unrivalled status in classical Chinese literature. This course offers a survey of classical Chinese poetry by studying its evolution from about the 11th century B.C to the 12th century AD, when poetry had almost passed the zenith of its development. We shall study its two major forms — Shi poetry & Ci poetry (song lyrics) — and examine their various modes by focusing on the most representative works in history, particularly by ten major poets（Qu Yuan, Cao Zhi,

Tao Qian, Wang Wei, Li Bai, Du Fu, Bai Juyi, Li Yu, Su Shi and Li Qingzhao) with due attention to their distinctive life experience and the cultural context of each poem. By the end of the term, students will be enabled to cultivate their capacity for independent appreciation and to catch a glimpse of the breadth, depth and wealth of classical Chinese poetry.

This is a lecture/seminar-combined class. On class days, when a new genre or poet is being introduced, I will introduce at the very beginning some relevant historical and cultural background information, followed by students' discussion. Generally, we focus on one genre/poet for each session. All the study materials will be in English. I shall find the best translations available, sometimes along with the Chinese original and relevant audio readings. We shall also read some poems by non-Chinese poets, such as Shakespeare, Donne, Milton, Marvell, Blake, Wordsworth, Coleridge, Byron, Shelley, Tennyson, Browning, Christian Rossetti, Hardy, Edward Thomas, Wilfred Owen, Yeats; Anne Bradstreet, Poe, Dickinson, Frost, Stevens, Edna St Vincent Millay, Bishop; Baudelaire, Milosz and Szymborska, etc. We believe such comparative lens will lead us to see better both the merits and the weaknesses of Chinese poetry. Students are required to read the assignments (including poems and essays) in advance and come to class fully prepared for discussion.

-End-

课程号（Course Number）： 30340076
课程名称（Course Title）：中国现当代小说与电影/Modern Chinese Fiction through Film
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 马乃强 教学副教授

先修课程（Prerequisites）： The target audience are the international students with various national backgrounds, and the students are supposed to have much interest in modern Chinese fiction and film. The course will be instructed in English, and there are no other pre-requisites for this course.

中文简介：
当前的跨文化教学要求多媒体既是教学手段，又是教学内容。本课程结合小说和电影两种文本，通过文学和多媒体双重艺术形式进行中国文学文化教学。现当代中国文学始于20世纪初期，课程选用现当代中国文学史上的经典短篇、中篇和长篇小说及其改编的电影。本课程教学包括文学背景知识，作家作品介绍，小说文本分析和评论，课后问题讨论和问答，电影改编和赏析等。借助现代多媒体教学手段，本课程致力于提高学生独立思考水平，增强其文化意识、文学修养和信息时代的双重文本读写能力，从而达到我们跨文化教学的最终目的。

英文简介（Course Description）：

The current cross-cultural teaching requires both teaching with and teaching about multimedia. This course integrates the printed text (fiction) and media text (film), teaching Chinese culture through literature and multimedia. The modern Chinese literature starts from the early 1900s, and the course will cover about ten classical short stories, novellas, and novels of modern China as well as the movies adapted from these literary works. The course instruction mainly includes the knowledge of literary background, introduction of authors and their writings, analysis and comment of fictional works, questions and answers of discussion topics, and comparison and appreciation of adapted films. With the help of literary comprehension and multimedia appreciation, the course aims to improve students' intellectual independence, and hence enhance their cultural awareness, literary education and contemporary school literacy.

-End-

课程号（Course Number）： 30340082
课程名称（Course Title）：“中国崛起”专题研讨课/The Rise of China and Change in World Politics
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 徐昕(校外) 待定

先修课程（Prerequisites）：

中文简介：
本课程为英文授课。

英文简介（Course Description）：
The rise of China is one of the most important and defining themes in contemporary international relations. This seminar course is intended for advanced undergraduate students to examine major issues and topics concerning the rise of China from a broad theoretical perspective, and to engage in the academic discourse and policy debate about implications of China's rise for world politics. The seminar is organized around the central question – will China's rise bring about a fundamental change to the international system? – and roughly divided into three sections: (1) China's rise and the "paradigm change" in world politics; (2) China's quest for identity and order; and (3) implications of China rising for Asia and the world. Under each of these sections, a few specific topics are identified for class discussion.

Students wishing to enroll in this course are expected to have basic knowledge of international relations and China's foreign policy.

-End-

课程号（Course Number）： 30340094
课程名称（Course Title）：中国改革与世界经济/China in the Global Economy
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 陈绍锋 长聘副教授

先修课程（Prerequisites）：

中文简介：
本课程为英文授课。

英文简介（Course Description）：
a. To understand the roadmap of Chinese reform and the logic behind it;
b. To understand the uniqueness of China's transition and its economic implications;
c. To learn how China interacts with the world;
d. To build the capability of studying Chinese economy.
e. Upon completing this course, students are expected to get familiar with China model, China's economic interaction with the outside world, challenges the Chinese economy is facing, as well as the world economic system.

-End-

课程号（Course Number）： 30340095
课程名称（Course Title）：中国经济导论/Introduction to Chinese Economy
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 季曦 长聘副教授

先修课程（Prerequisites）： A university-level introductory course in Economics (e.g. Principles of Economics).

中文简介：
本课程为英文授课。

英文简介（Course Description）：
China's fast economic growth has generated great interest among media, scholars and ordinary people around the world. The aim of this course is to provide students with an overview of the Chinese economy and the detailed understanding of China's economic transition. The topics covered include an introduction of the Chinese economic history, its market oriented transitional process and its implications on economic growth, the

urban-rural divide and the reforms of the two sectors, population policy and the related labor market issues, poverty and inequality, fiscal and financial reforms, international trade and foreign investment, etc. Upon completion of the course, students are expected to be familiar with China’s economic system, its current economic reforms, and the challenges that the country faces in the twenty-first century.

-End-

课程号（Course Number）： 30340095
课程名称（Course Title）：中国经济导论/Introduction to Chinese Economy
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： LIUMINQUAN（刘民权） 教授 Professor

先修课程（Prerequisites）： A university-level introductory course in Economics (e.g. Principles of Economics).

中文简介：
本课程为英文授课。

英文简介（Course Description）：
China’s fast economic growth has generated great interest among media, scholars and ordinary people around the world. The aim of this course is to provide students with an overview of the Chinese economy and the detailed understanding of China’s economic transition. The topics covered include an introduction of the Chinese economic history, its market oriented transitional process and its implications on economic growth, the urban-rural divide and the reforms of the two sectors, population policy and the related labor market issues, poverty and inequality, fiscal and financial reforms, international trade and foreign investment, etc. Upon completion of the course, students are expected to be familiar with China’s economic system, its current economic reforms, and the challenges that the country faces in the twenty-first century.

-End-

课程号（Course Number）： 30340106
课程名称(Course Title)：中国现当代小说选读/Selected Readings of Chinese Modern Fiction
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 金理(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
本课程围绕现当代文学史上的青年形象与青春想象、选择现具有代表性的中短篇小说作品进行深入讲解，训练读者对文学语言和文学美感的感受能力和把握能力，理解作品中隐藏的多层次的内涵，进而发现人性的丰富。也使学生对中国当代社会的文学、文化与社会发展，以及文学与社会的复杂互动有切实理解。领会文学在今天现实境遇中的意义。

英文简介（Course Description）：
This course focuses on the youthful imagination in the history of modern and contemporary literature, and selects representative fiction to provide an in-depth explanation, training the reader's ability to perceive literary language and literary beauty, to understand the multi-layered connotations hidden in the works, and thus to discover the richness of human nature. It also provides students with a practical understanding of the literary, cultural and social development of contemporary Chinese society, and the complex interaction between literature and society. Appreciate the significance of literature in today's situation.

-End-

课程号（Course Number）： 30340107
课程名称（Course Title）：听觉文化与世界文明/Aural Culture and World Civilization
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 毕明辉(校外) 待定

先修课程（Prerequisites）： 无

中文简介：
《听觉文化与世界文明》基于任课教师系列北大优秀通识课程（包括《音乐与数学》、《20世纪西方音乐》《西方音乐欣赏》、《中西音乐文化专题》）之长期积累，顺应学术前沿发展潮流，深耕音乐跨学科与跨文化所长。课程以现象、音乐、问题、文献、时空为基本切入点，力图在讲授中回应五大问题：什么是听觉文化？为什么听觉是人、历史、文化的证据？为什么听觉是思想、文化、艺术的价值体现和非物质遗产？为什么听觉的见识影响人的见解？听觉文化的演进是如何影响和构成世界文明的？围绕侧重四条线索明暗交叉，启迪学生：1.听觉现象作为问题的引导与深入；2.以阅读材料为依据的听觉思想观念史的变迁与批判；3.音乐作品为核心听觉样本的鉴赏与分析；4.跨文化理论与实践和课堂音乐会现场体验相结合的互动。课程力求在全球化与本土化双重语境下，对学界长期存在的诸多问题作出理性化且具批判性的反思，以多学科、跨学科、超学科的方式推进新文科理念下音乐实践与研究的发展和完善，培养学生综合知识基础上的独立思辨能力，以世界和中国的双重视角，以音乐历史观和文化观的全面发展为最终目标，体现出课程内容的通识关怀。

英文简介（Course Description）：

Aural Culture and World Civilization is a new perspective-oriented core Liberal arts course which based on the core principles of phenomena, music, questions, documents, and time & space under the circumstance of Modern/ Post-Modern Age, the instructor, and his group hope that it will give a response to five major questions: What is aural culture? Why is it the witness and awareness of people, history, and culture for the world? Why is it an expression and identification of the values and intangible heritage of ideas, culture, and art? Why does aural insight influence and impact the way of watching and understanding of human beings? How has the evolution of aural culture produced and constructed world civilization? Audiences will be guided with around four strands: 1. The phenomenon of Aural Culture as a question; 2. The changes in the history of ideas under the reading materials; 3. The auditory samples which selected from typical musical pieces as the core presentation; 4. Learning and understanding the lecture along with that of the related Chinese and Western Music and Culture of PKU and lecture concert in live. We are very much seeking to rationalize and critically reflect on many long-standing issues in the academic world in a dual context of globalization and localization, and to promote the development and improvement of music practice and research under the new liberal arts concept in a multidisciplinary, interdisciplinary, and supra-disciplinary manner. The course also be very happy to foster the independent thinking which based on comprehensive knowledge, with the goal of developing a holistic view of music history and culture from both a global and Chinese perspective, reflecting the multiple concerns of the focus of course.

-End-

课程号（Course Number）： 30340109
课程名称（Course Title）：欧洲文化：从古典希腊到文艺复兴/European Culture From Classical Greece to the Renaissance
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 朱孝远 教授 Professor

先修课程（Prerequisites）： 无

中文简介：
《欧洲文化：从古典希腊到文艺复兴》是在两门教育部国家精品课基础上修改而成，两门精品课分别为2006年教育部评选的国家精品课程《西方文明史导论》和2018年教育部精品课《文艺复兴经典名著选读》。本课程分专题讲授从古典希腊到文艺复兴的欧洲文化的演变，重视在思想、文化、制度等方面的重大成就和遗产。本课程的目的是让大学生通过立足中国、放眼世界，在世界科学文化的高端平台上磨练自己，提升自己的人文精神和学术能力，为成为新时代的创新型人才奠定基础。旨在用中国人眼光来分析、透视欧洲文化的发展过程。分专题讲授从希腊到文艺复兴的欧洲文化，着重分析各个时期欧洲文化的特征、民族性格、国民性、思维方式、文化传统、优缺点，并从全球化角度探讨文明的整合问题。认为东西方文明的互相整合是世界

文明发展的趋势。课程置放大量阅读材料，帮助学生了解学术动态、基本史料、发展脉络、注重学术性和前沿性。

英文简介（Course Description）：
"European Culture From Classical Greece to the Renaissance" is a general course of Peking University. It is a national outstanding course selected by the Ministry of Education in 2006, a first -class undergraduate course selected by the Ministry of Education in 2018, and a national excellent resource sharing course selected in 2014. The purpose of this course is to help college students look at the world through China viewpoint and become an innovative talent by improving their humanist spirit and academic ability in the new era.

-End-

课程号（Course Number）：30340111
课程名称（Course Title）：艺术的启示/Art Inspiring
开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：李睦(校外) 待定

先修课程（Prerequisites）：无

中文简介：
通常的艺术史及艺术创作课程，会引导人们了解过往的文化，会指导人们体验曾经的艺术，前者侧重理论研究，后者侧重创作实践。但无论是理论，还是实践，都并不容易介入人们的生活，它们只是生活的样板和艺术的楷模，而不是生活和艺术的本身。虽然我们不是因为艺术而活着，但艺术确是由于我们才存在。《艺术的启示》这门课致力于消除艺术与生活的隔阂，消除艺术与公众的隔阂，让艺术像阳光、空气和水一样，蕴育和滋养我们社会中的每一个人。本门课程在引导学生敬仰艺术、热爱艺术的同时，更注重学生独立思考能力的引导，更注重学生思辨能力的培养。从阅读、欣赏优秀的艺术作品开始，学生要学会判断、学会分析、学会质疑。从参与、制作自己的艺术作品开始，学生要体会创意、体会创作、体会创新。我们研究艺术的目的，终究还是为了研究生活。我们通过艺术去体会纠结，通过艺术去应对烦恼，通过艺术去寻求创造，并且最终达到心灵的和谐、精神的和谐。
在这里，艺术的理论+艺术的实践，等于“艺术的生活”！

英文简介（Course Description）：
Courses in art history and artistic creation typically aim to introduce students to past cultures and artistic traditions. Art history courses emphasize theoretical research, while artistic creation courses prioritize creative practice. However, integrating both theory and practice into daily life can pose challenges. While serving as templates for living and models for art, they do not constitute the essence of life or art. Art exists through us, although we do not live solely for its sake. The course

″ Art Inspiring ″ strives to bridge the divide between art and the general public, facilitating a deeper understanding of art in daily life. It aims to make art as pervasive and beneficial as sunlight, air, and water, fostering growth and development among society's individuals. Beyond encouraging appreciation and love for art, this course places emphasis on developing critical thinking and fostering an inquiring mindset. Through the study of excellent artistic works, students acquire skills in evaluation, analysis, and critical questioning. By participating in and creating their own artistic works, students gain direct experience of creativity, joy, and the essence of innovation. Ultimately, our pursuit of art aims to deepen our understanding of life. Art serves as a compass in navigating life's complexities, a sanctuary in times of trouble, and a spark for creativity, leading us towards inner harmony and spiritual equilibrium. Here, the integration of artistic theory and practice embodies the essence of ″living through art″!

-End-

课程号（Course Number）：67130021
课程名称（Course Title）：智能飞行系统：项目驱动式从设计到实践/Intelligent Flight Systems: Project-Driven from Design to Practice
开课院系（School/Department）：创新创业学院/School of Innovation & Entrepreneur
学分（Credits）：1
授课教师（Faculty）：刘建波 教授 Professor，刘德英 副教授 Associate Professor

先修课程（Prerequisites）：无

中文简介：
一、课程背景
随着具身智能与无人系统技术的快速发展，AI正从“纯软件模拟”走向与物理世界深度交互的新阶段。这对未来工程师和科学家的能力提出了全新要求：算法思维、硬件实现与跨学科解决实际问题的能力缺一不可。然而，当前高校教育中“理论与工程实践脱节”的问题依然存在——学生往往具备单点知识，却缺乏在真实工业平台上进行系统集成与跨学科攻关的经验。
为弥合这一鸿沟，云圣智能与北京大学创新创业学院联合开设本课程。课程以“解决真实问题”为出发点，围绕项目制任务组织教学，摒弃传统实验课预设图纸与标准答案的模式，引入来自产业一线的真实自动化产品需求，要求学生直面市场痛点与技术挑战，进行从无到有的自主方案设计与问题攻关。课程坚持“真问题、真落地、真场景、真成长”的育人导向，以项目制学习串联AI、电子工程、机械设计、计算机等领域的科学问题，打通“人才—项目—产业”的闭环链路，构建起产学研协同的智能实验社区生态。
二、课程定位与目标
本课程面向北京大学计算机科学、机器人、人工智能、电子工程、机械设计等理工科方向的本科生，是一门以“解决真实科研与工程问题”为终极目标、驱动跨学科知识高阶融合的高强度项目制实践课。
课程以“企业出题，高校解题”为模式，以“真实工业平台 + 完整项目周期 + 竞技激励机制”

为核心价值主张。课程历时7天（共48学时），以“无人机自主抓取挑战赛”为驱动目标，引导学生完成“硬件组装 → 软件开发 → 系统集成 → 实战竞技”的全链路工程实践。课程旨在实现从“复现验证”到“自主设计”的教学范式跨越，培养学生面对真实场景、自主定义问题、系统设计方案并最终产出可交付成果的综合能力。

三、课程内容概要

课程分三个阶段递进推进：

第一阶段（Day 1－2，12学时）为“平台认知与硬件构建”，学生从零开始完成无人机机架、动力系统、夹爪机构及机载计算机的组装与上电自检，在调试笼内完成悬停测试，并跑通基于Ubuntu 22.04 + ROS2的SDK基础Demo。本阶段强调对工业级硬件平台的全面认知与基本操作能力的建立。

第二阶段（Day 3－5，18学时）为“核心算法开发”，聚焦感知模块（基于YOLO的目标检测与机载端实时推理）、运动控制（位姿估计、坐标系变换与轨迹规划）及夹爪端到端抓取策略的开发与调试。学生在此阶段以团队形式自主探究技术方案，将算法思维与硬件实现深度融合。

第三阶段（Day 6－7，18学时）为“系统集成与实战竞技”，学生完成状态机设计与全流程联调，经中期Demo展示、压力测试、模拟预赛等环节后，结课时小组参加课程项目比赛（两轮取最高分），并提交技术报告接受专家评审。本阶段强调系统级问题解决能力与工程素养的综合呈现。

四、课程特色

1.真实问题驱动：课程摒弃预设图纸与标准答案，引入来自产业一线的真实产品需求，要求学生直面市场痛点，进行从无到有的自主方案设计与问题攻关。

2.工业级真实平台：学生使用云圣智能的工业级无人机套件（含夹爪及力反馈模块）进行开发，所有技术指标均与实际工程标准对齐。

3.软硬深度协同与跨学科融合：课程涵盖硬件组装、飞控调试、ROS2开发、AI感知算法和系统集成，串联AI、电子工程、机械设计等特定领域的科学问题，形成从底层硬件到高层智能的完整知识体系。

3.以赛促学：课程结课以挑战赛为牵引，通过预赛复盘、正式比赛和专家评审的竞技机制，激发学生主动探索与创新优化的内生动力。

4.产学协同育人：由云圣智能技术导师与北京大学实践导师联合授课，学生可直接接触工业标准，通过项目展示获得企业与学界的双重认可，打通“人才—项目—产业”的闭环链路。

5.重视工程素养：通过压力测试、故障排查与鲁棒性验证等环节，培养学生“面向失败设计”的工程师思维，提升系统级问题解决能力。

五、课程成效与价值

完成本课程学习与实践，学生将形成可展示的无人机系统作品与技术报告，其成果与市场对接，可直接应用于企业产品技术端。课程所培养的系统级工程实践能力、AI感知与控制算法应用能力、跨学科协同攻关能力，以及团队协作与技术表达能力，将有效支撑学生在机器人、无人系统及具身智能领域的进一步学习与职业发展。

英文简介（Course Description）：

I. Course Background

With the rapid development of embodied intelligence and unmanned systems, AI is shifting from pure software simulation to deep interaction with the physical world. This demands that future engineers and scientists combine algorithmic thinking, hardware implementation, and interdisciplinary problem-solving. However, university education still often separates theory from practice—students have fragmented knowledge but lack

experience in system integration and real-world industrial applications. To address this, CloudMinds Smart and the Peking University Innovation and Entrepreneurship Institute have jointly launched this course. Based on a “real-world problem solving” approach, the course replaces traditional lab models with actual industry requirements. Students tackle genuine market challenges and technical pain points, designing solutions from scratch. Guided by the philosophy of “Real Problems, Real Implementation, Real Scenarios, Real Growth,” the course uses project-based learning to connect scientific questions across AI, electronic engineering, and mechanical design, building an integrated academic-research-industry ecosystem.

II. Course Positioning and Objectives

This course is designed for Peking University undergraduates in science and engineering—including Computer Science, Robotics, AI, Electronic Engineering, and Mechanical Design. It is an intensive, project-based, hands-on course aimed at advancing interdisciplinary integration through solving real research and engineering problems. The course follows an “Enterprise Sets the Challenge, University Provides the Solution” model, emphasizing “Real Industrial Platforms + Complete Project Lifecycle + Competitive Incentive Mechanism.” Over seven days (48 credit hours), centered around a “Drone Autonomous Grasping Challenge,” students go through the full engineering cycle: “Hardware Assembly → Software Development → System Integration → Competition.” The goal is to shift education from replication and verification to autonomous design, cultivating students’ ability to independently define problems, design systematic solutions, and deliver tangible results.

III. Course Outline

Phase 1 (Days 1–2, 12 hrs): Platform Familiarization & Hardware Construction
Students build the drone frame, power system, gripper mechanism, and onboard computer from scratch, then perform power-on self-tests, hovering tests in a debugging cage, and run basic SDK demos (Ubuntu 22.04 + ROS2). This phase focuses on understanding an industrial-grade hardware platform and acquiring basic operational skills.

Phase 2 (Days 3–5, 18 hrs): Core Algorithm Development
Teams develop and debug perception (YOLO-based object detection with onboard inference), motion control (pose estimation, coordinate transformation, trajectory planning), and end-to-end gripper control strategies. Students explore technical solutions independently, integrating algorithms with hardware implementation.

Phase 3 (Days 6–7, 18 hrs): System Integration & Competition
Students complete state machine design and full-system integration, followed by a mid-term demo, stress testing, and simulated competition. Teams participate in a final project competition (best of two rounds) and submit a technical report for expert review. This phase emphasizes system-level problem-solving and engineering proficiency.

IV. Course Features

Real-Problem Driven
Industrial-Grade Real Platform
Deep Software-Hardware Synergy & Interdisciplinary Integration
Competition-Based Learning
Industry-Academia Collaborative Education
Emphasis on Engineering Proficiency

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课程号（Course Number）： 67130022
课程名称(Course Title)：智能技术与行业研究实务/Smart Technology and Industry Research Practice
开课院系（School/Department）： 创新创业学院/School of Innovation & Entrepreneur
学分（Credits）： 1
授课教师（Faculty）： 刘德英 副教授 Associate Professor，李博 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
本课程是聚焦行业研究核心能力与人工智能技术深度融合的交叉型实践选修课，打破传统商业研究与智能技术应用的壁垒，以 “理论筑基、AI赋能、实战落地” 为核心，系统整合行业研究方法论、投资管理逻辑与智能技术工具，培养兼具商业分析思维与AI实战能力的复合型人才。课程立足战略与实践双视角，将标准化行业研究框架、咨询行业核心方法与AI驱动的研究流程创新相结合，引导学生掌握传统行业研究的规范体系，同时借助人工智能技术重构研究全流程，实现从 “人工调研分析” 到 “人机协同智能研究” 的能力提升，最终具备独立完成AI赋能型行业研究、输出专业商业研究成果的核心竞争力。

英文简介（Course Description）：
This course is an interdisciplinary practical elective focusing on the in-depth integration of core industry research capabilities and artificial intelligence technologies. It breaks down the barriers between traditional business research and intelligent technology application. Centered on the philosophy of “Founded on Theory, Empowered by AI, Grounded in Practice”, the course systematically integrates industry research methodologies, investment management logic and intelligent technical tools, to cultivate interdisciplinary professionals with both business analysis thinking and AI practical capabilities.
From the dual perspectives of strategy and practice, the course combines standardized industry research frameworks, core consulting industry methodologies and AI-driven innovations in research workflows. It guides students to master the standardized system of traditional industry research, while reconstructing the entire research process with artificial intelligence, achieving a capability leap from “manual research and analysis” to “human-AI collaborative intelligent research”. Ultimately, students

will develop the core competitiveness to independently conduct AI-enabled industry research and deliver professional commercial research outcomes.

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课程号（Course Number）： E1273914
课程名称（Course Title）：气候变化与可持续发展/Climate Change and Sustainable Development
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 戴瀚程 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
越来越多人认识到，气候变化与可持续发展密不可分，这不仅是因为在根本上二者具有相同的驱动因素，在政策选择时还有一定的协同性。精心设计的气候变化减缓政策可以在空气污染控制、能源安全增强和资源效率改进等方面对可持续发展带来很大的共同效益。为了有效地为国家或国际层面的决策提供信息，科学家必须采取综合和整体的视角。本课程旨在概述最新的气候变化科学共识、气候影响、气候变化适应，以及气候变化减缓与可持续发展目标（如高质量经济增长、能源安全、食品安全、空气污染控制和人类健康改善）之间的关系。此外，它还将简要介绍如何从系统分析的角度理解和揭示复杂的关系。

英文简介（Course Description）：
It is increasingly recognized that climate change is intricately linked to sustainable development, not just in terms of joint underlying drivers, but also with respect to synergistic policy choices. Well-designed climate change mitigation policy can lead to significant co-benefits for sustainable development in air pollution control, energy security enhancement and resource efficiency improvement. To effectively inform decision-making on these issues, whether at the national or international level, science must take an integrated and holistic perspective. The course aims to give an overview of the latest scientific consensus on climate change, climate impacts, climate change adaptation and mitigation, and the nexus between climate change mitigation and sustainable development goals such as high-quality economic growth, energy security, food security, air pollution control and human health improvement. Furthermore, it will briefly introduce how the complicated nexus could be understood and uncovered from system analysis perspectives.

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课程号（Course Number）： E1273915

课程名称（Course Title）：环境专业国际交流与实践/International Exchange and Practice in Environmental Studies
开课院系（School/Department）：环境科学与工程学院/College of Environmental Sciences and Engineering
学分（Credits）：1
授课教师（Faculty）：郭松 长聘副教授

先修课程（Prerequisites）：环境问题，环境系统基础

中文简介：
本课程依托北京大学与曼彻斯特大学环境科学交流访问项目，旨在为学生提供深入了解国际环境科学与地球科学前沿的机会。课程内容涵盖大气成分与空气质量、气候变化与数值模拟、环境数据科学与人工智能应用、以及环境地球化学与健康等多个交叉学科领域。通过在曼彻斯特大学地球与环境科学系的实地全英文讲座、互动研讨及实验室实地考察，学生将直接接触到国际顶尖学者的最新研究成果，如气溶胶-云相互作用、大城市空气污染干预、贝叶斯空间统计建模以及地下水污染等关键议题。

英文简介（Course Description）：
This course relies on the Peking University-University of Manchester Environmental Science Exchange Program to provide students with comprehensive insights into international frontiers in environmental and earth sciences. The curriculum covers interdisciplinary fields including atmospheric composition and air quality, climate change and numerical modeling, environmental data science and AI applications, as well as environmental geochemistry and health. Through on-site English lectures, interactive seminars, and laboratory tours at the Department of Earth and Environmental Sciences at UoM, students will be directly exposed to the latest research from top international scholars, exploring key topics such as aerosol-cloud interactions, air pollution interventions, Bayesian spatial statistical modeling, and groundwater arsenic contamination.

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课程号（Course Number）：E1273915
课程名称（Course Title）：环境专业国际交流与实践/International Exchange and Practice in Environmental Studies
开课院系（School/Department）：环境科学与工程学院/College of Environmental Sciences and Engineering
学分（Credits）：1
授课教师（Faculty）：宫继成 教授 Professor

先修课程（Prerequisites）：环境问题，环境系统基础

中文简介：
本课程依托北京大学与曼彻斯特大学环境科学交流访问项目，旨在为学生提供深入了解国际环境科学与地球科学前沿的机会。课程内容涵盖大气成分与空气质量、气候变化与数值模拟、环境数据科学与人工智能应用、以及环境地球化学与健康等多个交叉学科领域。通过在曼彻斯特大学地球与环境科学系的实地全英文讲座、互动研讨及实验室实地考察，学生将直接接触到国际顶尖学者的最新研究成果，如气溶胶-云相互作用、大城市空气污染干预、贝叶斯空间统计建模以及地下水污染等关键议题。

英文简介（Course Description）：
This course relies on the Peking University-University of Manchester Environmental Science Exchange Program to provide students with comprehensive insights into international frontiers in environmental and earth sciences. The curriculum covers interdisciplinary fields including atmospheric composition and air quality, climate change and numerical modeling, environmental data science and AI applications, as well as environmental geochemistry and health. Through on-site English lectures, interactive seminars, and laboratory tours at the Department of Earth and Environmental Sciences at UoM, students will be directly exposed to the latest research from top international scholars, exploring key topics such as aerosol-cloud interactions, air pollution interventions, Bayesian spatial statistical modeling, and groundwater arsenic contamination.

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课程号（Course Number）： E4030003
课程名称（Course Title）：中共党史重要人物研究/ Studies on Important Figures in the History of the Communist Party of China
开课院系（School/Department）： 教务部
学分（Credits）： 3
授课教师（Faculty）： 李洋 助理教授

先修课程（Prerequisites）： 无

中文简介：
本课程旨在通过对中国共产党历史上重要人物的系统学习，使学生深入了解中国共产党不同历史阶段的核心领导人物及其思想贡献，把握他们在中国革命、建设和改革中的作用和影响。最终，希望学生能够通过对人物的学习和研究，解读中国现代化进程的历史逻辑与实践逻辑，成为具有客观历史视角的跨文化传播者。

英文简介（Course Description）：
This course aims to help students gain an in-depth understanding of the core leading figures of the CPC at different stages of history and their ideological contributions, and to grasp their roles and influences in China's revolution, construction and reform

through the systematic study of key figures in the history of the CPC. Ultimately, it is hoped that students will be able to decode the logic of China's modernisation process through the study of figures, and become cross-cultural communicators with an objective historical perspective.

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课程号（Course Number）： 04334017
课程名称（Course Title）：美索不达米亚艺术与文明/Mesopotamian Art and Civilization
开课院系（School/Department）： 教务部
学分（Credits）： 2
授课教师（Faculty）： 贾妍 长聘副教授

先修课程（Prerequisites）： 无

中文简介：
本课程在世界文明发展史的大背景基础上，通过对古代美索不达米亚（两河流域）艺术与建筑的起源、发展、风格特点及历史流变的讲解和考察，引导学生理解作为“人类文明摇篮”的古代美索不达米亚特有的视觉与物质文化。课程力图突破西方传统“东方学”框架下的文明视野，以中华文明为观想本体和潜在的比较对象，在美索不达米亚文明的盛衰中引导学生思考人类文明面临的普遍问题，在全球化的语境下提升文明对话的意识与能力。方法论层面，课程致力于在讲授中引入艺术史学科的一些基本研究路径，即从视觉材料入手，结合文献记载和考古材料，通过对“图”与“物”的观看、解读和阐释，探索其背后独特的文明形态与文化传统。

英文简介（Course Description）：
This is an introductory course of the art and civilization of ancient Mesopotamia. Through the survey of the origins, developments, continuity and changes of styles of the three thousand years of art history, this course intends to introduce to the students a visual and material culture unique to ancient Mesopotamia, “the cradle of human civilization.” With a cross-cultural comparative perspective, however, observing with a vision of Chinese civilization for potential cultural comparison, this course seeks to break through the framework of Eurocentric “orientalism” in the Near Eastern studies, and to promote a dialogue of the two ancient cultures of Mesopotamia and China in the context of globalization. This course also encourages students to think about some universal problems faced by human civilizations, in the birth and death, rise and fall of the long dead Mesopotamian culture. At the methodological level, the course will include a survey of archaeological data as well as some basic art-historical approaches available for analysis of ancient monuments.

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课程号（Course Number）： 06732040
课程名称（Course Title）：经济学视角下的教育世界/Economics of Education

开课院系（School/Department）：教务部
学分（Credits）：2
授课教师（Faculty）：马莉萍 长聘副教授

先修课程（Prerequisites）：无

中文简介：
教育政策是世界范围内教育领域的重要研究课题。过去二十年来，世界各国的经济学家致力于教育政策的研究，并做出了重要贡献。本课程旨在帮助学生在掌握经济学基本原理和主要分析方法的基础上，理解经济学家如何思考教育政策的制定、实施和评估，并建立分析教育政策的经济学思维及方法体系。

本课程以专题研讨的形式组织，在每一专题下，选取一到两项在国内外具有重要影响的教育政策或改革项目，梳理政策的起源和发展，分析经典实证研究，讨论可能的解决思路、评估方案及发展方向。学生通过本课程的学习，将能够系统了解教育经济领域的前沿研究，并熟练地运用经济学的思维和方法分析研究现实中的教育政策，为将来从事社会科学研究奠定一定的理论和方法基础。

英文简介（Course Description）：
Over the past twenty years economics has made a number of contributions to understanding the role of education in the wider economy and the effectiveness of various education policies. This course provides a broad overview of the different issues in education that economists study. Through readings and discussion we will study the various aspects of the intersection of economics and education policy.

The goal for this course is to provide you with a broad understanding of the issues that arise at the intersection of education and economic policy, to be able to make judgments about the effectiveness of various education policies based on current research, and to be able to make cogent and effective arguments about appropriate policy recommendations. Thus upon completion students should be capable of thoroughly reading and criticizing research papers using econometric techniques in applications and to know when it is appropriate to apply such techniques to their own research.

This course will cover topics in the economics of education policy through reading and discussion of seminal papers and latest research. Specific topics chosen will be determined by the instructor with input from the students and may include, but are not limited to, school choice, peer effects, class size, teacher incentives, online education, college access, financial aid, college graduates' employment etc.

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