

课程详述

COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 Course Title	认知实习 Production Practice
2.	授课院系 Originating Department	海洋科学与工程系 Department of Ocean Science and Engineering
3.	课程编号 Course Code	OCE473
4.	课程学分 Credit Value	2
5.	课程类别 Course Type	专业核心课 Major Core Course
6.	授课学期 Semester	夏季 Summer
7.	授课语言 Teaching Language	中文 Chinese
8.	授课教师、所属学系、联系方式 (如属团队授课, 请列明其他授课教师) Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	陈建飞, 海洋科学与工程系 Prof. Jian Fei Chen Department of Ocean Science and Engineering
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	待公布 To be announced
10.	选课人数限额(可不填) Maximum Enrolment (Optional)	15

11. 授课方式 Delivery Method	讲授 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
学时数 Credit Hours			64		64
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

帮助学生了解海洋工程与技术专业相关的企业、项目、分工、专业应用、前景等。有助于学生了解海洋工程技术在实际工程中的应用，培养学生的专业兴趣，加深学生对将来从事工作的认识，是培养计划中的重要课程。

Through an intensive 10-day indoor and outdoor visits to various companies and sites, it helps students to understand enterprises, projects, tasks of various jobs, professional applications and prospects related to Ocean Engineering and Technology. This is an important course in the training programme to help students understand ocean engineering practice and the applications of marine technology in the real world, cultivate students' interest in the subject and help them to gain an understanding of their future profession.

16. 预达学习成果 Learning Outcomes

完成本课程后学生们将基本了解 Upon successful completion of this course, students will have a basic understanding of:

- ① 海洋工程与技术的范畴及其核心工程技术问题 The scope and core aspects of Ocean Engineering and Technology.
- ② 海洋油气田开发方案设计，海洋石油生产平台设计和建造，采油工艺技术及工程方案设计 Design of offshore oil and gas field exploration solutions, design and construction of offshore oil production platforms, design of oil production schemes.
- ③ 无人船艇相关的装备总体设计技术和智能控制技术，无人船艇的典型应用场景 Design and control techniques related to unmanned surface vessels (USVs), typical applications of u USVs.
- ④ 海洋土木工程和海洋桥梁工程 Marine civil engineering and bridge engineering.
- ⑤ 海洋风电关键技术（如超长超柔叶片技术、支撑结构设计技术、智能运维技术等）及风电项目经济性论证方法 Key techniques of offshore wind power generation and assessment of economics of offshore wind power projects.
- ⑥ 海洋水文、海洋气象调查研究、海岸工程动力应用研究、海洋地质调查研究和海洋工程地质勘察、物探、工程测量等 Marine hydrography, marine meteorology, coastal engineering, marine geological

survey, ocean engineering geological exploration, geophysical prospecting and engineering surveying.

17. 课程内容及教学日历（如授课语言以英文为主，则课程内容介绍可以用英文；如团队教学或模块教学，教学日历须注明主讲人）

Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)

详情参考附件：《南方科技大学本科生实习教学大纲》、《南方科技大学本科生实习计划》

教学日历暂定，可能根据具体情况变更。The contents are subject to change, depending on the various conditions and availability of companies and sites then.

D1: 通过课堂教学、电化教学和专题讲座等，使学生对海洋土木工程、海洋油气工程、海洋风电工程等有初步的认识。

D1: Students will gain preliminary understanding of marine civil engineering, ocean petroleum and gas engineering, and offshore wind energy engineering through classroom lectures, virtual teaching, and seminars.

D2 & D3: 集体前往中海石油（中国）有限公司深圳分公司参观实习。该公司在中国南海东部海域从事海上石油天然气勘探、开发、生产。结合我校的实际情况，设立集“专家讲座、参观实习、企业培训”为一体的生产实习教学体系，使学生在生产实习过程中得到最大程度地锻炼。通过专家讲座了解企业文化和海洋石油生产技术相关知识及应用；通过参观了解海洋石油生产平台、大型生产设施、特殊井下工具等装备。

D2 & 3: Students take a tour of the Shenzhen Branch of China National Offshore Oil Corporation (CNOOC). CNOOC's main business is on the exploration, exploitation and production of oil and gas in the eastern part of the South China Sea. To maximize the benefits of this practice and ensure that students are well trained, a well-rounded teaching system encompassing expert lectures, on-site tours, and industrial training is established. Students will be acquainted with (i) corporate culture and knowledge related to offshore oil production technologies through lectures, and (ii) offshore oil production platforms, large production facilities and special tools and equipment in oil wells through on-site tours.

D4: 集体前往珠海云洲智能科技股份有限公司参观实习。该公司是国内领先的无人船艇研发与测试基地。通过“专家讲座、参观实习、企业培训”三维一体的生产实习体系，学生将了解到无人船艇核心技术，尤其是装备总体设计和智能控制技术。通过专家讲解及参观，使学生认识到无人船艇在海洋探测、保护、开发、利用中扮演的重要角色，并了解无人船艇在其他领域的应用场景，如智慧城市、环境保护、抗洪抢险救灾等。

D4: Students will leave for a tour at Yunzhou Technologies Ltd in Zhuhai, which is a leading company in developing and testing of unmanned surface vessels (USVs). Through expert lectures, on-site tours, and industrial training, students will learn core technologies of USVs especially those regarding the overall design and smart control. Through expert lectures and on-site tours, students will understand the important roles of USVs in the exploration, protection, development, and utilization of oceans, as well as their other applications in smart cities, environmental protection, and flood mitigation.

D5: 从珠海酒店集体前往港珠澳大桥。通过近距离感受世纪工程，使得学生了解珠澳大桥建设历程、跨海桥梁设计方法和施工模式、标准化施工管理和质量控制等。

D5: Students will leave the hotel in Zhuhai for the Hong Kong-Zhuhai-Macau Sea Link. By learning the design methodology and standardized management and quality control during the construction of this grand project, students will be acquainted with more knowledge in cross-sea bridge engineering.

D6: 在南方科技大学校内集合，总结和交流前期实习成果，撰写实习报告。

D6: Students will gather at SUSTech, summarize and communicate with others their experience in the cognitive practice

so far and write a report.

D7: 集体前往明阳智慧能源集团股份公司参观实习。明阳智能是风电行业的龙头企业，拥有核心部件自主知识产权。通过现场参观和专家讲解，使学生了解海上风机抗台风技术、海洋新能源解决方案的全生命周期智能化技术、大数据及物联网技术、大型海上风电机组超长超柔叶片技术及支撑结构设计技术、海洋风电项目经济性论证方法等。

D7: Students will leave for a tour at Mingyang Smart Energy Corp, which is a leading company in wind electricity production and has IP on core parts. Through expert lectures and on-site tours, students will know various technologies concerning typhoon-proof turbines on the sea, life-cycle smart control in marine energy solutions, big data and IoTs, ultra-long and soft blades of wind turbines and design of their support structures, and economic analysis of wind energy projects.

D8: 从中山酒店集体前往国家海洋局南海调查技术中心参观实习。通过参观实习了解海洋水文气象调查和海岸工程动力应用，海洋地质调查和海洋工程地质勘察、物探、工程测量，南海资料浮标观测网的接受、管理、维护技术工作，海域使用论证和测量，海洋污染应急调查等。

D8: Students will leave the hotel in Zhongshan for a tour at the South China Sea (SCS) Survey Center of State Oceanic Administration. Students will know (i) survey on marine hydrology and meteorology and application of seashore dynamics; (ii) marine geological survey and ocean engineering investigation and measurements; (iii) the reception, management, maintenance of the SCS buoy monitoring network, (iv) sea area usage investigation and measurements, and (v) marine pollution emergency survey.

D9: 总结和交流后期实习成果，撰写实习报告并准备汇报 PPT。

D9: Students will summarize and communicate with others the experience of the whole cognitive practice, write a report, and present the results.

D10: 在南方科技大学校内集合，所有参加实习的学生依次进行 PPT 汇报，交流对海洋工程的认知及实习的收获。

D 10: Students will gather at SUSTech and present to faculty and students their experiences and lessons learned from the production practice.

18. 教材及其它参考资料 Textbook and Supplementary Readings

无

None

课程评估 ASSESSMENT

19. 评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance		10		
课堂表现 Class Performance		10		
小测验 Quiz				
课程项目 Projects				

平时作业 Assignments				
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Project report		80		
其它（可根据需要 改写以上评估方 式） Others (The above may be modified as necessary)				

20. 记分方式 **GRADING SYSTEM**

- A. 十三级等级制 **Letter Grading**
 B. 二级记分制（通过/不通过） **Pass/Fail Grading**

课程审批 REVIEW AND APPROVAL

21. 本课程设置已经过以下责任人/委员会审议通过
This Course has been approved by the following person or committee of authority

海洋科学与工程系本科教学委员会
 Department of Ocean Science and Engineering Undergraduate Committee

