

课程大纲 COURSE SYLLABUS

1.	课程代码/名称 Course Code/Title	软件分析 Software Analysis
2.	课程性质 Compulsory/Elective	研究生选修课 Elective Course for Postgraduates
3.	开课单位 Offering Dept.	计算机科学与工程系 Department of Computer Science and Engineering
4.	课程学分/学时 Course Credit/Hours	3 学分 64 学时 3 Credits 64 Hours
5.	授课语言 Teaching Language	英语 English
6.	授课教师 Instructor(s)	刘焯庞 Yepang Liu
7.	开课学期 Semester	春季 Spring
8.	是否面向本科生开放 Open to undergraduates or not	是 Yes
9.	先修要求 Pre-requisites	<p>(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)</p> <p>软件工程 (CS304) 或者软件测试 (CS409) Software Engineering (CS304) or Software Testing (CS409)</p>
10.	教学目标 Course Objectives	<p>(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)</p> <p>(1) 给学生系统性地介绍经典软件分析技术和近年来随着大数据和人工智能发展而兴起的各类新型智能软件分析技术 (Systematically introduce classic software analysis techniques and the emerging techniques related to big data and artificial intelligence)</p> <p>(2) 让学生阅读并研讨软件工程、程序语言等相关领域的经典论文以熟悉相关研究领域 (Guide students to read and discuss research papers published in top journals/conferences in the areas of software engineering and programming languages to prepare them for academic research)</p> <p>(3) 让学生使用软件分析技术完成一个贯穿整个学期的课程项目以熟悉、掌握并改进相关的方法、原理等, 形成自己的研究成果 (Help students get familiar with existing methods/tools by completing a three-month course project and inspire them to improve existing methods/tools)</p>
11.	教学方法 Teaching Methods	<p>(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)</p> <p>(1) 课堂讲授 (Lectures)</p> <p>(2) 课堂研讨 (Seminars)</p> <p>(3) 实验实践 (Labs and Practices)</p>

12. 教学内容 Course Contents	
(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)	
Section 1	Dynamic Analysis Techniques 动态分析技术
Section 2	Static Analysis Techniques 静态分析技术
Section 3	Fault Localization Techniques 软件缺陷定位技术
Section 4	Program Synthesis and Repair Techniques 程序合成与修复技术
Section 5	Software Analytics 软件解析学
Section 6	
Section 7	
Section 8	
Section 9	
Section 10	
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13. 课程考核 Course Assessment	
(① 考核形式 Form of examination; ②. 分数构成 grading policy; ③ 如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)	
<ul style="list-style-type: none"> (1) 书面考核, 即期末考试, 占总评 30% (Final Exam, 30%) (2) 实验考核, 即课程项目, 占总评 30% (Course Project, 30%) (3) 课程论文, 占总评 30% (Research Report, 30%) (4) 课程参与, 出勤及研讨贡献度, 占总评 10% (Attendance & Participation, 10%) 	
14. 教材及其它参考资料 Textbook and Supplementary Readings	
无固定教材, 参考资料由主讲老师指定。 No textbook, the course instructor will prepare reference materials.	