# Software Engineering

HUANG Jie
School of Computer Science and Technology
Tongji University
2025

同济大学 TONGJI UNIVERSITY

# Course Objectives

- Master the key concepts, processes, activities, methods, tools and models in the discipline of Software Engineering.
- Design & Develop the course project, including but not limited the following tasks: suitable software process, requirement analysis & modeling, software architecture design & modeling, detailed design, deployment, configuration and team management etc..
- In the learning process, students write the relevant documents down e.g., feasibility study, requirements specification, design specification, source code, test cases & results etc..
- Understand & Master the Knowledge Areas/Modules/Points of Software Engineering Body of Knowledge(SWEBOK V3.0).

# Teaching Plan

- Course Duration: Sep.16th 2025 to Dec.30th 2025.
- Final Examination Date: TBD, by teaching affairs administrator of School.
- Scoring (100%=10%+10%+20%+60%)
  - Final Examination (60%, closed-book written examination)
  - Course Project Design & Development (20%)

    (60% Documents + 40% on site Demo & Presentation)
  - Course Assignments (10%)
  - Course Attendance (10%)
- According to the university regulations, if one third(1/3) or more of attendance are absent, the student will not be allowed to take the final examination and will get a zero score.

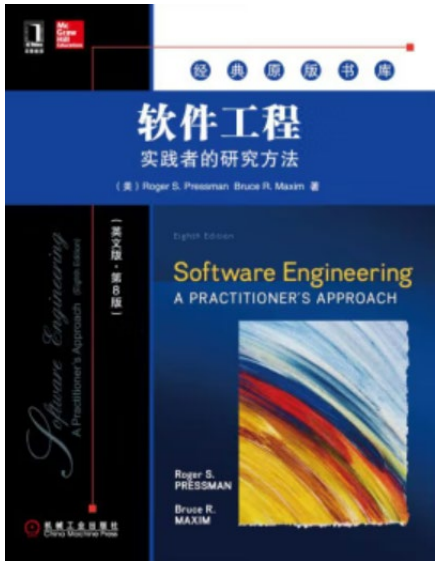
# Course Project

- Project
  - Innovation and entrepreneurship projects for college students, such as national innovation projects and shanghai innovation projects; College student competitions are at provincial and ministerial levels and above.
  - Participate in real projects of the mentor's scientific research group, various vertical scientific research projects, and horizontal scientific research projects;
  - Regarding the course project, pay attention to the announcements on canvas in time.
- Team
  - Building the team for the course project. The team consists of at least 2 & at most 4 students(including 4 students).
  - Complete the assignment about team information, and submit on Canvas (Deadline: 24:00, 21th Sep.).
  - Complete the assignment about topic selection and submit on Canvas (Deadline: 24:00, 28th Sep.).

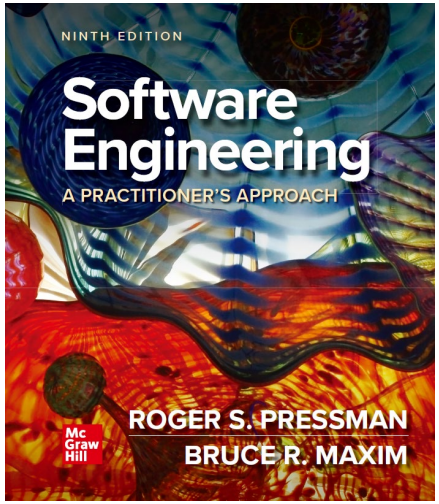
# Syllabus

| Timetable of the Course Software Engineering (Class 2# & 3#) | | | |
|---|---|---|---|
| Week | Date | Contents | Lecturer |
| 1 | 25' 9/16 & 9/18 | From Program to Software | Huangjie |
| 2 | 9/23 & 9/25 | Software and Software Engineering | Huangjie |
| 2 | 9/28 | Software Engineering Process Models | Huangjie |
| 3-4 | 9/30 & 10/9 | Agility and Process | Huangjie |
| 5 | 10/14 & 10/16 | Recommended Process Model | Huangjie |
| 6 | 10/21 & 10/23 | Human Aspects of Software Engineering & TEST in Class I | Huangjie |
| 7 | 10/28 & 10/30 | Principles of Software Practice | Huangjie |
| 8 | 11/4 & 11/6 | Understanding Software Requirements | Huangjie |
| 9 | 11/11 & 11/13 | Modelling of Software Requirements | Huangjie |
| 10 | 11/18 & 11/20 | Expression and Verification of Software Requirements | Huangjie |
| 11 | 11/25 & 11/27 | Requirements Analysis and Specification & TEST in Class II | Huangjie |
| 12 | 12/2 & 12/4 | Software Design Concepts | Huangjie |
| 13 | 12/9 & 12/11 | Software Architecture Design | Huangjie |
| 14 | 12/16 & 12/18 | Component-Level Design | Huangjie |
| 15 | 12/23 & 12/25 | Use Interface and Mobility Design | Huangjie |
| 16 | 12/30 | Course Review and Q&A | Huangjie |
| 17/18 | TBD | Final Examination | |

# Textbooks



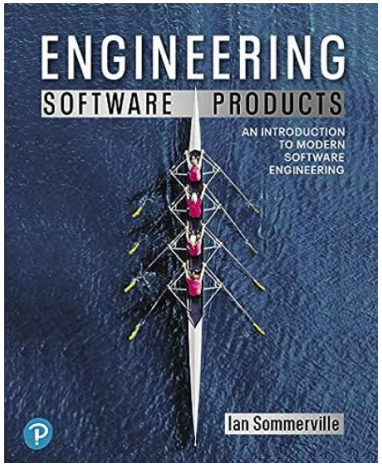

- Roger S. Pressman, Bruce R. Maxim. **Software Engineering: A Practitioner's Approach** 8th Edition. China Machine Press. 2015.

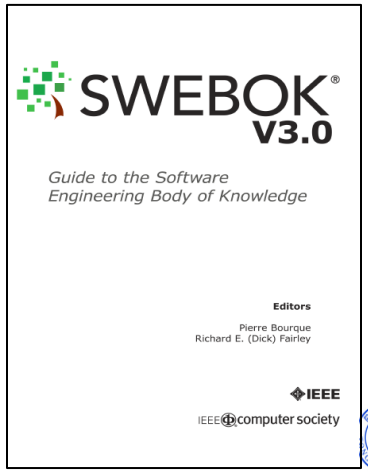



- Roger S. Pressman, Bruce R. Maxim. **Software Engineering: A Practitioner's Approach** 9th Edition. McGraw-Hill Education. 2019.

# Reference Books (Partial)

- **Shari Lawrence Pfleeger** et al.
  软件工程 4th Edition. 北京，人民邮电出版社, 2019.
- **Ian Sommerville**
  **Software Engineering Software Products** 2021
  现代软件工程：面向软件产品.北京，机械工业出版社, 2021
- ACM/IEEE.
  **Guide to the Software Engineering Body of Knowledge (3rd)** 2014.
  http://www.computer.org/portal/web/swebok/swebokv3.

# Course's Information

**Links** to the course materials:

https://canvas.tongji.edu.cn/courses/104512

https://canvas.tongji.edu.cn/courses/104513

# Teacher's Info.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- **Wechat**: 13501932599