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| Module name | Software Engineering | |
| Module level | Undergraduate | |
| Code | IF221121 | |
| Courses (if applicable) | Software Engineering | |
| Semester | 4 | |
| Lecturer | Yisti Vita Via, S.ST, M.Kom (PIC)<br>Achmad Junaidi, S.Kom, M.Kom<br>Budi Nugroho, S.Kom, M.Kom<br>Hendra Maulana, S.Kom, M.Kom<br>Pratama Wirya Atmaja, S.Kom, M.Kom | |
| Language | Bahasa Indonesia and English | |
| Relation to curriculum | Undergraduate degree program; compulsory; 4th semester | |
| Type of teaching, contact hours | Lectures, < 60 students, | |
| Teaching Methods | Simulation, collaboration, cooperative learning, case-study, project-based learning, and problem-based learning | |
| Workload | 1. Lectures: 3 sks x 50 = 150 minutes (2 hours 30 minutes) per week.<br>2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week.<br>3. Private study: 3 x 60 = 180 minutes (3 hours) per week | |
| Credit points | 3 credit points (sks) | |
| Requirements according to the examination regulations | A student must have attended at least 80% of the lectures to sit in the exams. | |
| Mandatory prerequisites | Advanced Programming | |
| Courses description | In this course students will learn about the concepts and models of software engineering, the role of personnel in the development of software engineering and arranging software planning proposal that consist of requirement analysis, planning, implementation, and software testing. | |
| Learning outcomes and their corresponding PLOs | After completing this module, a student is expected to: | |
| | **CO1** Students are able to explain the concepts and process of software planning. | PLO4,PLO5, PLO7, PLO9, PLO10 |
| | **CO2** Students are able to analyze the problems that is able to be solved through the creation of a software. | PLO4,PLO5, PLO7, PLO9, PLO10 |
| | **CO3** Students are able to communicate without any problems between developer personnel. | PLO4,PLO5, PLO7, PLO9, PLO10 |
| | **CO4** Students are able to arrange a software development project proposal. | PLO4,PLO5, PLO7, PLO9, PLO10 |
| | **CO5** Students are Able to design a system according to the results of requirements analysis and create software testing scenarios. | PLO4,PLO5, PLO7, PLO9, PLO10 |
| Content | The material studied by students in this course includes: Basic Concepts in Software Engineering, Activities in Software Development Projects, Software | |

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| | Development Processes, and the use of tools in project management. It covers project planning and cost estimation techniques, feasibility studies, Software Development Life Cycle (SDLC) models, System Engineering, Software Requirement Specification (SRS), principles and templates for SRS, software project requirements, Unified Modeling Language (UML), Data Flow Diagram (DFD), Software Testing & Implementation, and project documentation according to process models and case studies. |
| Media employed | LCD, whiteboard, websites, books (as references), online meeting, etc. |
| Assessments and Evaluation | One written Midterm assessment (60 minutes) and one final oral exam (30 minutes), two short computer-based quizzes, takehome written assignments |
| Study and examination requirements and forms of examination | The final grade in the module is composed of:<br>• Two short computer-based quizzes: 15% x 2 = 30%<br>• Take-home written assignments : 15%<br>• Written Midterm assessment: 25%<br>• Final oral exam: 30%<br><br>Students must have a final grade of 55.6% or higher to pass. |
| Reading List | ● Roger S. Pressman, Software Engineering, 8th edition, McGraw-Hill, 2014.<br>● P. Bourque and R.E. Fairley, eds., Guide to the Software Engineering Body of Knowledge, Version 3.0, IEEE Computer Society, 2014.<br>● Ian Sommerville, Software Engineering, 9th edition, Pearson, 2010.<br>● Computing and Information Science, Software Engineering Slides, Cornell University, 2009. |