

## 21B33C209 – Operating System

Module designation	Operating System (Undergraduate)
Semester(s) in which the module is taught	2 <sup>nd</sup>
Person responsible for the module	Suhartono, S.Kom, M.Kom A.Rahman Patta, S.Kom, M.T Dr. Abdul Wahid, S.T, M.Kom
Language	Indonesia – English
Relation to curriculum	This course is a compulsory course
Teaching methods	Lecture, Presentation
Workload (incl. contact hours, self-study hours)	CH: 09.00-17.00 Face to face: 3x50 minutes / week Independent Study: 3x50 minutes / week Structured assignment: 3x50 minutes / week
Credit points	3 SKS (equivalent 5.1 ECTS)
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<p><b>Program Learning Outcomes (PLO)</b></p> <p>PLO 3: Internalize academic values, norms and ethics;</p> <p>PLO 4: Students master knowledge regarding design techniques, development and maintenance of computer systems and devices.</p> <p>PLO 7: Able to apply logical, critical, systematic and innovative thinking in the context of developing or implementing science and technology technology that pays attention to and applies humanities values appropriate to its field of expertise.</p> <p>PLO 8: Able to demonstrate independent, quality and measurable performance;</p> <p>PLO 10: Implement computer engineering methods with the ability to plan, analyze, design, implement, maintain and document computer systems with limited resources.</p> <p><b>Course Learning Objectives (CLO)</b></p> <p>After attending and completing the course, students are expected to be able to know the structure of computer systems, the structure of</p>

	<p>operating systems, process management, process scheduling, synchronization and deadlock, memory management, virtual memory, Input/Output system management, protection and computer systems and distributed systems.</p> <p><b>Sub CLO:</b></p> <p>Sub-CLO 1: Students are able to explain the basic concepts of operating systems</p> <p>Sub-CLO 2: Students are able to explain the structure of operating systems</p> <p>Sub-CLO 3: Students are able to use and apply concepts &amp; definitions of computer memory</p> <p>Sub-CLO 4: Students are able to explain processes and synchronization</p> <p>Sub-CLO 5: Students are able to use and apply the concepts &amp; definitions of external memory</p> <p>Sub-CLO 6 Students are able to use and apply concepts &amp; definitions of operating system support</p> <p>Sub-CLO 7 Students are able to understand memory management</p> <p>Sub-CLO-8 Students know and understand security and protection in operating systems</p> <p>Sub-CLO 9 Students are able to understand the concept of virtual machines</p> <p>Sub-CLO 10 Students are able to understand the concept of distribution systems</p>
<p>Content</p>	<p>Students will learn about:</p> <ul style="list-style-type: none"> <li>● Basic concepts of operating systems</li> <li>● Operating system structure</li> <li>● Process management</li> <li>● Threads</li> <li>● Synchronization process</li> <li>● CPU Scheduling</li> <li>● Deadlocks</li> <li>● Memory management</li> <li>● Storage management 1 (Mass-Storage Structure &amp; File System Interface)</li> <li>● Storage management 2 (File System Implementation, Input/Output Systems)</li> <li>● Protection and security</li> <li>● Virtual machine</li> <li>● Distribution system</li> </ul>
<p>Examination forms</p>	<p>Assessment Techniques: Exam, Presentation, Case Based Learning</p> <p>Assessment Forms: Assignment, Presentation Assessment</p>
<p>Study and examination requirements</p>	<ul style="list-style-type: none"> <li>● Students have to inform the lecturer when they are not able to attend the class due to sickness etc</li> <li>● Active in making projects by showing participation in making projects in class</li> <li>● Able to present and answer questions that exist during project presentations</li> </ul>

Reading List	<ul style="list-style-type: none"><li>● Stalling, W. Operating Systems Internals and Design Principles 7th Edition. Prentice Hall. 2012.</li><li>● Tanenbaum, A. Modern Operating Systems 3rd Edition. Pearson. 2009.</li><li>● Strawan Draft. Computer Science, Computing Curricula 2013. IEEE Computer Society. 2012.</li><li>● Labrosse, Jean. MicroC OS/II The Real Time Kernel, 2nd Edition. CMP Books. 2002</li></ul>
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