



UIN SUNAN KALIJAGA YOGYAKARTA

FACULTY OF SCIENCE AND TECHNOLOGY

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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Control System													
Module level, if applicable	Bachelor													
Code, if applicable	FIS425068													
Subtitle, if applicable	-													
Courses, if applicable	Control System (Sistem Kendali)													
Semester(s) in which the module is taught	5 th (fifth)													
Person responsible for the module	Chair of Instrumentation Interest Area													
Lecturer(s)	Nia Maharani, S.T., M.Eng.													
Language	Indonesia													
Relation to curriculum	Elective course in the third year (5 th semester) Bachelor Degree													
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.													
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam													
Credit points	3													
Requirements according to the examination regulations	Minimum attendance 75% All assignments must be submitted before the exam													
Recommended prerequisites	No prerequisites stated on													
Module objectives/intended learning outcomes	After completing this course, the students: CO 1 Describing introduction of control systems, both open and closed control systems and their classification CO 2 Describing control techniques for actuators and control system amplifiers CO 3 Describing mathematical modeling of mechanical and electrical systems in control systems CO 4 Describing and applying PID and Fuzzy logic control both in simulation and practice													
Content	a. Introduction to control systems. b. PID control. c. Fuzzy logic d. Actuator control techniques													
Study and examination requirements and forms of examination	The final mark will be weighted as follows: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">NO</th> <th style="width: 75%;">Assessment methods (components, activities)</th> <th style="width: 20%;">Weight (percentage)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Examination</td> <td>30%</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination</td> <td>30%</td> </tr> <tr> <td>3</td> <td>Class Activities : Quiz, Homework, etc.</td> <td>40%</td> </tr> </tbody> </table>		NO	Assessment methods (components, activities)	Weight (percentage)	1	Final Examination	30%	2	Mid-Term Examination	30%	3	Class Activities : Quiz, Homework, etc.	40%
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	<p>The final assessment is expressed in the form of a letter value converted from a number value with the following categories:</p> <table border="1"> <thead> <tr> <th>NO</th> <th>Number Value</th> <th>Letter Value</th> <th>NO</th> <th>Number Value</th> <th>Letter Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>≥ 95</td> <td>A</td> <td>7</td> <td>65-69.99</td> <td>B/C</td> </tr> <tr> <td>2</td> <td>90-94.99</td> <td>A-</td> <td>8</td> <td>60-64.99</td> <td>C+</td> </tr> <tr> <td>3</td> <td>85-89.99</td> <td>A/B</td> <td>9</td> <td>55-59.99</td> <td>C</td> </tr> <tr> <td>4</td> <td>80-84.99</td> <td>B+</td> <td>10</td> <td>50-54.99</td> <td>C-</td> </tr> <tr> <td>5</td> <td>75-79.99</td> <td>B</td> <td>11</td> <td>55-34.99</td> <td>D</td> </tr> <tr> <td>6</td> <td>70-74.99</td> <td>B-</td> <td>12</td> <td><35</td> <td>E</td> </tr> </tbody> </table>	NO	Number Value	Letter Value	NO	Number Value	Letter Value	1	≥ 95	A	7	65-69.99	B/C	2	90-94.99	A-	8	60-64.99	C+	3	85-89.99	A/B	9	55-59.99	C	4	80-84.99	B+	10	50-54.99	C-	5	75-79.99	B	11	55-34.99	D	6	70-74.99	B-	12	<35	E
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Media employed	White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)																																										
Reading list	Heru Dibyo Laksono. 2016. Sistem Kendali dengan PID Perancangan dan Analisis dengan Metode Ziegler-Nichols. Indonesia.																																										

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1		√	√						
CO 2		√	√						
CO 3		√	√	√					
CO 4		√	√	√	√				