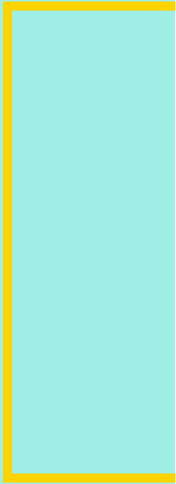UNIVERSITAS GADJAH MADA
VOCATIONAL COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING AND INFORMATICS

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DEPARTMENT OF ELECTRICAL ENGINEERING AND INFORMATICS

In order to answer the challenges of the industry 4.0, the mastery and utilization of technology is one of the main components of all existing industrial fields. To support this, Department of Electrical Engineering and Informatics focus on preparing graduates in the field of Power System, Instrumentation and Control Engineering, Software Engineering Technology, and Internet Engineering Technology.

STUDY PROGRAM

> "
Preparing applied bachelors in the field of software engineering who have competencies in analysis, design, validation, programming, quality assurance, and security of software as well as using multimedia to produce technological works that function effectively and efficiently.

SOFTWARE ENGINEERING TECHNOLOGY

Semester	Subject	Credits	
	English	Theory	Practical
I	Introduction to Information Technology	2	
I	Engineering Mathematics	2	
I	Discrete Mathematics	2	
I	English 1	2	
I	Practical Information Technology and Computer Installation		3
I	Practical Algorithm and Programming		3
I	Practical Communication and Presentation		2
I	Practical Elementary Design		2
II	Vector and Matrix Algebra	2	
II	Algorithm Analysis dan Data Structure	2	
II	English 2	2	
II	Religion	2	
II	Practical Object Oriented Programming		3
II	Practical Database		3
II	Practical Data Structure		2
II	Practical Web Programming 1		2
III	Advanced Database	2	
III	Software Development Methods and Models	2	
III	Software Requirement Engineering	2	
III	Software Analysis and Design	2	
III	Practical Software Design		3
III	Practical Web Programming 2		3
III	Practical Mobile Applications Programming 1		2
III	Basic Application Project 1		2

CURRICULUM OF SOFTWARE ENGINEERING TECHNOLOGY

Semester	Subject English	Credits Theory	Credits Practical
IV	Computer Network	2	
IV	Software Architecture	2	
IV	Project Management	2	
IV	Interoperability	2	
IV	Practical Web Programming 3		3
IV	Practical Distributed Information and Administrative Systems		3
IV	Practical Mobile Applications Programming 2		2
IV	Basic Application Project 2		2
V	IT Governance	2	
V	Introduction to Business Intelligence (Data Science)	2	
V	Software Verification and Validation	2	
V	Software Quality Assurance	2	
V	Indonesian Language	2	
V	Practical Data Mining and Data Processing		3
V	Practical Software Testing		3
V	Interdisciplinary Project 1		3
VI	Interdisciplinary Course	2	
VI	Software Construction and Evolution	2	
VI	Professional Ethics	2	
VI	Software Security	2	
VI	Enterprise Resource Planning	2	
VI	Practical Game Development		3
VI	Practical Animation dan Multimedia Design		3
VI	Interdisciplinary Project 2		3
VII	Community Service Program		3
VII	Creative Ideas & Entrepreneurship		2
VII	Capita Selecta	2	
VII	Artificial Intelligence	2	
VII	Citizenship	2	
VII	E-Business		2
VII	Pancasila	2	
VII	Software Development Project		6
VIII	Internship		8
VIII	Final Project		6
VIII	Seminar and Internship		6
VIII	Final Project		8
Total Credit		159	
Theory		60	
Practicum			99

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> Preparing applied bachelors in Internet engineering technology who focus on the designing, implementing, and maintenance of Internet infrastructures, and developing network utility applications.

INTERNET ENGINEERING TECHNOLOGY

Semester	Subject	Credits	
	English	Theory	Practical
I	English for Engineering 1	2	
I	Engineering Mathematics	2	
I	Introduction of Information Technology	2	
I	Fundamental of Computer Engineering	2	
I	Programming Concept	2	
I	Telecommunication Engineering	2	
I	Fundamental of Electricity	2	
I	Programming Concept Lab. Work		2
I	Fundamental of Computer Engineering Lab. Work		2
I	Fundamental of Electricity Lab. Work		2
II	English for Engineering 2	2	
II	Citizenship	2	
II	Workplace health and safety	2	
II	Computer Networking 1	2	
II	Database	2	
II	Electronics	2	
II	Computer Networking 1 Lab. Work		2
II	Object Oriented Programming Lab. Work		2
II	Telecommunication Engineering Lab. Work		2
II	Electronics Lab. Work		2
III	English for Engineering 3	2	
III	Computer Networking 2	2	
III	Network Design 1	2	
III	Network Administration and Management 1	2	
III	Network Operating System	2	
III	Wireless Technology	2	
III	Computer Networking 2 Lab. Work		2
III	Network Administration and Management 1 Lab. Work		2
III	Network Programming Lab. Work		2
III	Database Lab. Work		2

CURRICULUM OF INTERNET ENGINEERING TECHNOLOGY

Semester	Subject English	Credits Theory	Credits Practical
IV	English for Engineering 4	2	
IV	Religion	2	
IV	Information Security 1	2	
IV	Network Administration and Management 2	2	
IV	Network Design 2	2	
IV	Information Security 1 Lab. Work		2
IV	Network Design 1 Lab. Work		2
IV	Network Administration and Management 2 Lab. Work		2
IV	Wireless Technology Lab. Work		2
V	Pancasila	2	
V	Embedded System	2	
V	Exposure to Global Competencies 1	2	
V	Information Security 2	2	
V	Independent Project of Cross Discipline 1		2
V	Optical Fiber Communication System	2	
V	Information Security 2 Lab. Work		2
V	Network Design 2 Lab. Work		2
V	Design and Application of IoT		2
V	Workshop Project 1		2
VI	Elective of Cross-Discipline 1	2	
VI	Exposure to Global Competencies 2	3	
VI	Prabability and Statistic	2	
VI	Independent Project of Cross Discipline 2		2
VI	Research Methodology	2	
VI	Mathemathics Logic	2	
VI	Mobile Broadband	2	
VI	Mobile Broadband Lab. Work		1
VI	Optical Fiber Communication System Lab. Work		1
VI	Workshop Project 2		2
VII	Elective of Cross-Discipline 2	2	
VII	Elective of Cross-Discipline 3	2	
VII	Indonesian Language	2	
VII	Exposure to Global Competencies 3	3	
VII	IT Professional Ethics	1	
VII	Network Infrastructure Security Lab. Work		2
VII	IT Project Management	2	
VII	Creative Idea and Enterpreneurship		2
VIII	Final Project		6
VIII	Student Community Service		3
VIII	Enhanced Studium Generale		2
Total Credit		**144**	
Theory		**83**	
Practicum			**61**

> Preparing applied bachelors in the field of electrical engineering technology emphasizing in generating, transmission, utilization of electrical energy, operation/maintenance/control of electrical machinery.

ELECTRICAL ENGINEERING TECHNOLOGY

Semester	Subject	Credits	
	English	Theory	Practical
I	DC Electric Circuit	2	
I	Electric Physic	2	
I	Electronic I	2	
I	Vector Algebra and Matrix	2	
I	Electricity Safety	2	
I	English I	1	
I	English Practicum I		1
I	Indonesian		2
I	Electric Measuring Practical		2
I	Electronika Practical I		2
I	Practical Drawing Techniques 1		2
II	AC Electric Circuit	2	
II	Electronic 2	2	
II	Instrumentation Techniqe	2	
II	Electrical Lighting Installation Techniques	2	
II	Engineering Mathematic	2	
II	English 2	1	
II	English Practical		1
II	Practical Electrical Circuit		2
II	Electronic Practical 2		2
II	Engineering Drawing Practical 2		2
II	Computer Programming Practical		2
II	Workshop I		2
III	Electric Power Engineering	2	
III	Industrial Electrical Installation Engineering	2	
III	Electric Machine 1	2	
III	Microcontroler	2	
III	Digital Engineering	2	

CURRICULUM OF ELECTRICAL ENGINEERING TECHNOLOGY

Semester	Subject English	Theory	Practical
III	English 3	1	
III	English Practical 3		1
III	Control Techniques Practical		2
III	Digital Engineering Practical		2
III	Electric Power Installation Engineering Practical		2
III	Workshop II		2
III	Microcontroller Practical		2
IV	Electric Power Distribution	2	
IV	Electric Power Protection Techniques	2	
IV	Power Electronics	2	
IV	Generating System	2	
IV	English 4	1	
IV	English Practical 4		1
IV	Industrial Automation Practical		2
IV	Mekatronika Practical		2
IV	Power Electronics Practical		2
IV	Electric Power Distribution Practical		2
IV	Project 1		2
V	Electric Machine 2	2	
V	Transmission & Substation	2	
V	Professional ethics	2	
V	Teknologi SCADA	2	
V	Creative & Entrepreneurship	2	
V	Management of Electrical Machines Practical		2
V	Computer Practical in STL		2
V	Electric Power Protection System Practical		2
V	Electric Power Protection System Practical		2
V	Computer Practical in STL		2
V	SCADA Technologys Practical		2
VI	Religious education	2	
VI	Operation & Maintenance of Electric Power Transmission	2	
VI	Electric Machine 3	2	
VI	Pancasila	2	
VI	Kewarganegaraan	2	
VI	MK Cross-Faculty	2	
VI	Electric Power System Design Practical		2
VI	Distribution Operation & Maintenance		2
VI	Renewable Energy Practical		2
VI	Statistik Practical		2
VII	Internship		8
VIII	Public lecture	1	
VIII	Community Service Program		3
VIII	Final project		6
Total Credit		**144**	
Theory		**65**	
Practicum			**79**

INSTRUMENTATION AND CONTROL ENGINEERING TECHNOLOGY

Semester	Subject	Credits	
	English	Theory	Practical
I	Pancasila	2	
I	Engineering Physics 1	2	
I	English 1	2	
I	Engineering Mathematics 1	2	
I	Electrical Circuit	2	
I	Electronics Laboratory		2
I	Basic Electronic	2	
I	Basic Programming	2	
I	Mechanical Engineering Drawing Laboratory		2
I	Electrical Engineering Drawing Laboratory		2
II	Civics education	2	
II	English 2	2	
II	Engineering Physics 2	2	
II	Engineering Mathematics 2	2	
II	Digital Techniques	2	
II	Digital Techniques Laboratory		2
II	Instrumentation Techniques Laboratory		2
II	Health, Safety, Environment	2	
II	Electric Motor	2	
II	Electric Motor Laboratory		2
III	Engineering Mathematics 3	2	
III	Microcontroller Laboratory		2
III	Advanced Programming	2	
III	Masurement Techniques	2	
III	Instrumentation Techniques	2	

CURRICULUM OF INSTRUMENTATION AND CONTROL ENGINEERING TECHNOLOGY

Semester	Subject English	Credits Theory	Practical
III	Basic Control System	2	
III	Basic Control System Laboratory		2
III	Industrial Metrology	2	
III	Data Communication and Telemetry	2	
III	Data Communication and Telemetry Laboratory		2
III	Probability and Statistic	2	
IV	Creative Idea and Entrepreneurship	2	
IV	PLC and SCADA Laboratory		2
IV	Capita Selecta	2	
IV	Industrial Instrumentation	2	
IV	Piping and Valve Laboratory		2
IV	Power Electronics	2	
IV	Power Electronics Laboratory		2
IV	Workshop Laboratory		2
IV	Digital Signal Processing	2	
IV	Medical Instrumentation	2	
IV	Religion	2	
V	Database Laboratory		2
V	Advanced Control System	2	
V	Advanced Control System Laboratory		2
V	Mechatronics	2	
V	Integrated Circuit	2	
V	Mechatronics Laboratory		2
V	Pneumatic and Hydrolic	3	
V	Pneumatic and Hydrolic Laboratory		2
V	Industrial Automation	2	
V	System Design and Integration	2	
VI	Robotics Laboratory		2
VI	Indonesian Languange	2	
VI	Sensor Network and IoT	2	
VI	Professional Ethics and organization	2	
VI	Robotics	2	
VI	Optimal Control System	2	
VI	Digital Image Processing	2	
VI	Digital Image Processing Laboratory		2
VI	Research Methods	2	
VI	Multidiscipline Projects 1		2
VII	Multidiscipline Projects 2		2
VII	Inteligence Control System	2	
VII	Artificial Inteligence	2	
VII	Seminary	2	
VIII	Industrial Practice Work		2
VIII	Community Service Program		3
VIII	Undergraduate Thesis/ Internship		6
Total Credit		**144**	
Theory		**91**	
Practicum			**53**

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