

Module Handbook

On Job Training



Bachelor Degree Program Department of Biomedical Engineering

Faculty of Intelligent Electrical Technology and Informatics
Institut Teknologi Sepuluh Nopember



MODULE HANDBOOK
On Job Training
DEPARTMENT OF BIOMEDICAL ENGINEERING
 INSTITUT TEKNOLOGI SEPULUH NOPEMBER
 Number : 6873/IT2.IX.5.1.2/B/PP.03.00.00/2023

ENDORSEMENT PAGE

Proses Process	Penanggung Jawab Person in Charge			Tanggal Date
	Nama Name	Jabatan Position	Tandatangan Signature	
Perumus Preparation	Dr. Norma Hermawan, S.T., M.Sc.	Dosen Lecturer		November 18, 2022
Pemeriksa dan Pengendalian Review and Control	Dr. Rachmad Setiawan, S.T., M.T.	Tim kurikulum Curriculum team		November 20, 2022
Persetujuan Approval	Dr. Rachmad Setiawan, S.T., M.T.	Koordinator RMK Course Cluster Coordinator		April 13, 2023
Penetapan Determination	Dr. Achmad Arifin, S.T., M.Eng.	Kepala Departemen Head of Department		April 17, 2023

MODULE HANDBOOK

ON JOB TRAINING

Module name	On Job Training	
Module level	Undergraduate	
Code	EB234604	
Course (if applicable)	Internship	
Semester	Sixth Semester (Gasal)	
Lecturer	Dr. Norma Hermawan, S.T., M.T., M.Sc.	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergraduate degree program, mandatory , 6 th semester.	
Type of teaching, contact hours	Lecturer, <60 Student Thursday, 13.00-15.50 (GMT+7)	
Workload	1. Lectures : 3 x 50 = 150 minutes per week. 2. Exercises and Assignments : 3 x 60 = 180 minutes (3 hours) per week. 3. Private learning : 3 x 60 = 180 minutes (3 hours) per week.	
Credit points	2 credit points (sks)	
Requirements according to the examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.	
Mandatory prerequisites	-	
Learning outcomes and their corresponding PLOs	Course Learning Outcome (CLO) after completing this module, CLO 1: Students are able to understand the internship process carried out according to the topic. CLO 2: Students are able to explain the internship being carried out. CLO 3: Students are able to apply the knowledge gained during lectures to solve problems at the internship. CLO 4: Students are able to present their internship results in a seminar forum.	PLO-12 PLO-10 PLO-03 PLO-07
Content	This course studies coverage of activities carried out during the internship and the knowledge used during the internship.	
Study and examination	• In-class exercises	

requirements and forms of examination	• Written Task 1 • Presentation Task 1, 2, 3, 4, 5 • Programming Task 1 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading list	Main : 1. - Supporting : 1. -

I. Rencana Pembelajaran Semester / *Semester Learning Plan*

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS) FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY DEPARTMENT OF BIOMEDICAL ENGINEERING					Document Code
SEMESTER LEARNING PLAN						
MATA KULIAH (MK) <i>COURSE</i>	KODE <i>CODE</i>	Rumpun MK <i>Course Cluster</i>	BOBOT (sks) <i>Credits</i>		SEMESTER	Tgl Penyusunan <i>Compilation Date</i>
<i>Kerja Praktek Internship</i>	<i>EB234604</i>	<i>Ilmu Dasar Teknik Basic Engineering</i>	<i>T=2</i>	<i>P=0</i>	<i>VI</i>	<i>27 Oktober 2020</i>
OTORISASI / PENGESAHAN AUTHORIZATION / ENDORSEMENT	Dosen Pengembang RPS <i>Developer Lecturer of Semester Learning Plan</i>		Koordinator RMK <i>Course Cluster Coordinator</i>		Ka DEPARTEMEN <i>Head of Department</i>	
	(Dr. Norma Hermawan, S.T., M.T., M.Sc.)		(Dr. Rachmad Setiawan, S.T., M.T.)		(Dr. Achmad Arifin, S.T., M.Eng.)	
Capaian Pembelajaran <i>Learning Outcomes</i>	CPL-PRODI yang dibebankan pada MK <i>PLO Program Charged to The Course</i>					
	<i>CPL-03</i> <i>PLO-03</i>	Mampu mengelola pembelajaran diri sendiri, dan mengembangkan diri sebagai pribadi pembelajar sepanjang hayat untuk bersaing di tingkat nasional, maupun internasional, dalam rangka berkontribusi nyata untuk menyelesaikan masalah dengan mengimplementasikan teknologi informasi dan memperhatikan prinsip keberlanjutan serta memahami kewirausahaan berbasis teknologi <i>Able to manage one's own learning, and develop oneself as a lifelong learner to compete at national and international levels, in order to make a real contribution to solving problems by paying attention to the principles of sustainability.</i>				
	<i>CPL-07</i> <i>PLO-07</i>	Mampu berkomunikasi secara efektif baik lisan maupun tulisan <i>Have good skills in oral and writing communications</i>				
	<i>CPL-10</i>	Mampu bekerja dalam tim lintas disiplin dan budaya serta bertanggung jawab kepada masyarakat dan mematuhi hukum dan etika profesi dalam menyelesaikan masalah Teknik Biomedika				

	PLO-10	<i>Able to work in interdisciplinary and intercultural teams and be responsible to the community and comply with legal and professional ethics in solving Biomedical Engineering problems.</i>											
	CPL 12	Mampu menerapkan prinsip-prinsip teknologi dan kemampuan manajerial untuk dapat berkarya di bidang Teknik Biomedika maupun dalam kehidupan bersama di masyarakat pada tingkat nasional dan internasional											
	PLO-12	<i>Able to apply the principles of technology and managerial ability to be able to work in the field of Biomedical Engineering as well as in community life in the national and international level</i>											
	Capaian Pembelajaran Mata Kuliah (CPMK) Course Learning Outcome (CLO) - <i>If CLO as description capability of each Learning Stage in the course, then CLO = LLO</i>												
	CP MK 1 CLO 1	Mahasiswa mampu memahami proses kerja praktek yang dilaksanakan sesuai dengan topiknya. <i>Students are able to understand the internship process carried out according to the topic.</i>											
	CP MK 2 CLO 2	Mahasiswa mampu menjelaskan kerja praktek yang dilaksanakan. <i>Students are able to explain the internship being carried out.</i>											
	CP MK 3 CLO 3	Mahasiswa mampu menerapkan ilmu-ilmu yang didapatkan selama perkuliahan untuk menyelesaikan permasalahan di tempat kerja praktek. <i>Students are able to apply the knowledge gained during lectures to solve problems at the internship.</i>											
Peta CPL – CP MK Map of PLO - CLO	CP MK 4 CLO 4	Mahasiswa mampu mempresentasikan hasil Magang dalam forum seminar. <i>Students are able to present their internship results in a seminar forum.</i>											
		CPL-01	CPL-02	CPL-03	CPL-04	CPL-05	CPL-06	CPL-07	CPL-08	CPL-09	CPL-10	CPL-11	CPL-12
	CPMK 1 / SUB CPMK 1 CLO 1 / LLO 1												✓
	CPMK 2 / SUB CPMK 2 CLO 2 / LLO 2							✓			✓		
	CPMK 3 / SUB CPMK 3 CLO 3 / LLO 3			✓									

	CPMK 4 / SUB CPMK 4 CLO 4 / LLO 4							√					
Diskripsi Singkat MK Short Description of Course	Mata kuliah ini memberikan pengalaman situasi kerja di lapangan secara langsung. Kerja praktik dilaksanakan di industri atau tempat kerja yang memanfaatkan disiplin ilmu Teknik Biomedik. This course provides hands-on experience of work situations in the field. Internships are carried out in industries or workplaces that utilize Biomedical Engineering disciplines.												
Bahan Kajian: Materi pembelajaran Course Materials:	1. Cakupan tentang kegiatan-kegiatan yang dilakukan selama kerja praktek berlangsung / The coverage of activities carried out during internship takes place. 2. Ilmu-ilmu yang digunakan selama kerja praktek / Knowledge used during internship.												
Pustaka References	Utama / Main: 1. - Pendukung / Supporting: 1. -												
Dosen Pengampu Lecturers	Dr. Norma Hermawan, S.T., M.T., M.Sc.												
Matakuliah syarat Prerequisite	-												
Mg ke/ Week	Kemampuan akhir tiap tahapan belajar (Sub-CPMK) / Final ability of each learning stage (LLO)	Penilaian / Assessment				Bantuk Pembelajaran; Metode Pembelajaran; Penugasan Mahasiswa; [Estimasi Waktu] / Form of Learning; Learning Method; Student Assignment; [Estimated Time]				Materi Pembelajaran [Pustaka] / Learning Material [Reference]		Bobot Penilaian /Assessment Load (%)	
(1)	(2)	Indikator / Indicator	Kriteria & Teknik / Criteria & Techniques		Tatap Muka /				Daring /		(7)	(8)	

				In-class (5)	Online (6)		
1	● Mahasiswa mampu memahami proses kerja praktek yang dilaksanakan sesuai dengan topiknya. ● Mahasiswa mampu menjelaskan kerja praktek yang dilaksanakan. ● Mahasiswa mampu menerapkan ilmu-ilmu yang didapatkan selama perkuliahan untuk menyelesaikan permasalahan di tempat kerja praktek. ● <i>Students are able to understand the internship process carried out in accordance with the topic.</i> ● <i>Students are able to explain the internship being carried out.</i> ● <i>Students are able to apply the knowledge gained during lectures to solve problems at the internship.</i>	● Kebenaran melaksanakan tugas. ● Keberhasilan menjelaskan tugas. ● Ketepatan waktu pelaksanaan tugas ● <i>Success in carrying out tasks.</i> ● <i>Success describes assignments.</i> ● <i>Timeliness of task executionbiocybernetics techniques.</i>	Non-tes : Tugas 1: Menjalankan tugasnya sebagai siswa kerja praktek di industri sesuai dengan peraturan perusahaan / tempat kerja praktek dan mendapatkan penilaian secara profesional dari supervisor di industri (ditulis di form penilaian supervisor). Non-test : Task 1: <i>Carry out his duties as a student internship in the industry in accordance with company / internships regulations and get a professional assessment from the supervisor in the industry (written on the supervisor assessment form).</i>	● Bekerja maupun beraktifitas sesuai dengan peraturan perusahaan atau tempat kerja praktek. [20-40 x 8 x 60"]	● Bekerja maupun beraktifitas sesuai dengan peraturan perusahaan atau tempat kerja praktek.	● Cakupan tentang kegiatan-kegiatan yang dilakukan selama kerja praktek berlangsung. [-] ● <i>The concept of biocybernetics</i> ● <i>History of biocybernetics.</i> ● [Material link on MyITSClassroom]	70

2	● Mahasiswa mampu mempresentasikan hasil Kerja Praktek dalam forum seminar. ● <i>Students are able to present their internship results in a seminar forum.</i>	● Kelengkapan dan kerapian hasil laporan presentasi. ● Ketepatan menjelaskan pemahaman materi ● <i>Able to explain the usefulness of physiological systems modeling for the field of Biomedical Engineering.</i>	Non-tes : ● Tugas 2: Buku laporan kerja praktek. ● Seminar Kerja Praktek: Presentasi secara individu maupun kelompok untuk melaporkan kegiatan dengan topik spesifik kerja praktek (Presentasi) Non-test : ● Task 2: <i>Internship report book.</i> ● Internship Seminary: <i>Presentations individually or in groups to report activities with specific topics of internship (Presentations).</i>	● Kuliah dan brainstorming, tanya jawab. [TM : 1 x 50"] [BM : 6 x 60"] ● <i>Presentation and brainstorming, ask and answer.</i> [FF : 1 x 50"] [SS : 6 x 60"]	● Chatting dan diskusi dalam forum platform ITS. ● <i>Chat and discussion in ITS platform forum.</i>	● Ilmu-ilmu yang digunakan selama kerja praktek. [Link materi di MyITSClassroom] ● <i>Modeling Concepts.</i> ● <i>Methods of modeling the human body physiological system.</i> [Material link on MyITSClassroom]	30
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TM=Tatap Muka, **BM**=Belajar Mandiri.

FF = Face to Face, **SS** = Self Study.

II. Rencana Asesmen & Evaluasi (RAE) / Assessment & Evaluation Plan

	ASSESSMENT & EVALUATION PLAN BACHELOR DEGREE PROGRAM OF BIOMEDICAL ENGINEERING - FTEIC ITS Course : Internship		RA&E
			Write Doc Code
Kode/code: EB234604	Bobot sks/credits (T/P): 2/0	Rumpun MK: Ilmu Dasar Teknik Course Cluster: Basic Engineering	Smt: VI
OTORISASI <i>AUTHORIZATION</i>	Penyusun RA & E <i>Compiler A&EP</i> Dr. Norma Hermawan, S.T., M.T., M.Sc.	Koordinator RMK <i>Course Cluster Coordinator</i> Dr. Rachmad Setiawan, S.T., M.T.	Ka DEP <i>Head of DEP</i> Dr. Achmad Arifin, S.T., M.Eng.

Mg ke/Week (1)	Sub CP-MK / Lesson Learning Outcomes (LLO) (2)	Bentuk Asesmen (Penilaian) Form of Assessment (3)	Bobot / Load (%) (4)
1	Sub CP-MK 1: Mahasiswa mampu memahami proses kerja praktek yang dilaksanakan sesuai dengan topiknya. Sub CP-MK 2: Mahasiswa mampu menjelaskan kerja praktek yang dilaksanakan. Sub CP-MK 3: Mahasiswa mampu menerapkan ilmu-ilmu yang didapatkan selama perkuliahan untuk menyelesaikan permasalahan di tempat kerja praktek. LLO 1: <i>Students are able to understand the</i>	Non-tes : Tugas 1: Menjalankan tugasnya sebagai siswa kerja praktek di industri sesuai dengan peraturan perusahaan / tempat kerja praktek dan mendapatkan penilaian secara professional dari supervisor di industri (ditulis di form penilaian supervisor). Non-test : Task 1: <i>Carry out his duties as a student internship in the industry in accordance with company / internships regulations and get a professional assessment from the supervisor in the industry (written on the supervisor assessment form).</i>	70

	<i>internship process carried out in accordance with the topic.</i> LLO 2: <i>Students are able to explain the internship being carried out.</i> LLO 1: <i>Students are able to apply the knowledge gained during lectures to solve problems at the internship.</i>		
2	Sub CP-MK 2: Mahasiswa memahami konsep pemodelan yang dapat digunakan untuk sistem fisiologi tubuh manusia. LLO 2: <i>Students are able to present their internship results in a seminar forum.</i>	Non-tes : Tugas 2: Buku laporan kerja praktek. Seminar Kerja Praktek: Presentasi secara individu maupun kelompok untuk melaporkan kegiatan dengan topik spesifik. Non-test : Task 2: <i>Intership report book.</i> Task 2: <i>Presentations individually or in groups to report activities with specific topics of internship (Presentations).</i>	30
Total bobot penilaian Total assessment load			100%

- **Indikator Pencapaian CPL Pada MK / *Indicator of PLO achievement charged to the course***

CPL yang dibebankan pada MK / <i>PLO charged to the course</i>	CPMK / <i>Course Learning Outcome (CLO)</i>	Minggu ke / <i>Week</i>	Bentuk Asesmen / <i>Form of Assessment</i>	Bobot / <i>Load (%)</i>
CPL-03 / <i>PLO-03</i>	CPMK 3 / <i>CLO 3</i>	<i>Week-08</i>	<i>Task 1</i>	30
CPL-07 / <i>PLO-07</i>	CPMK 4 / <i>CLO 4</i>	<i>Week-08</i>	<i>Internship Seminary</i>	20
		<i>Week-16</i>	<i>Internship Seminary</i>	20
CPL-08 / <i>PLO-08</i>	CPMK 2 / <i>CLO 2</i>	<i>Week-08</i>	<i>Task 2</i>	30
CPL-10 / <i>PLO-10</i>	CPMK 1 / <i>CLO 1</i>	<i>Week-08</i>		
				$\Sigma = 100\%$

No	<i>Form of Assessment</i>	<i>PLO-01</i>	<i>PLO-02</i>	<i>PLO-03</i>	<i>PLO-04</i>	<i>PLO-05</i>	<i>PLO-06</i>	<i>PLO-07</i>	<i>PLO-08</i>	<i>PLO-09</i>	<i>PLO-10</i>	<i>PLO-11</i>	<i>PLO-12</i>	<i>Total</i>
1	<i>Penilaian dari Pembimbing Lapangan (Assesment from Field Supervisor)</i>			0.25			0.05							0.3
2	<i>Penilaian dari Dosen Pembimbing (Assesment from Supporting Lecturer)</i>						0.03				0.03		0.25	0.3
3	<i>Seminar 1 (Seminary 1)</i>						0.15				0.05			0.2
4	<i>Seminar 2 (Seminary 2)</i>						0.15				0.05			0.2
	<i>Total</i>			0.25			0.375				0.125		0.25	1