



MODULE HANDBOOK INTERNSHIP



**BACHELOR DEGREE PROGRAM
DEPARTMENT OF BIOMEDICAL ENGINEERING
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS
TECHNOLOGY**

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

ENDORSEMENT PAGE



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

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

INTERNSHIP

Module name	Internship	
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-02 PLO-02 PLO-06 PLO-02
Content	This course studies coverage of activities carried out during the internship and the knowledge used during the internship.	
Study and examination	<ul style="list-style-type: none"> ● In-class exercises ● Written Task 1 	

requirements and forms of examination	<ul style="list-style-type: none"> ● 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) COURSE		KODE CODE	Rumpun MK Course Cluster	BOBOT (sks) Credits		SEMESTER	Tgl Penyusunan Compilation Date
<i>Kerja Praktek Internship</i>		EB234604	<i>Ilmu Dasar Teknik Basic Engineering</i>	T=2	P=0	VI	27 Oktober 2020
OTORISASI / PENGESAHAN AUTHORIZATION / ENDORSEMENT		Dosen Pengembang RPS Developer Lecturer of Semester Learning Plan		Koordinator RMK Course Cluster Coordinator		Ka DEPARTEMEN Head of Department	
		(.....)		(Dr. Norma Hermawan, S.T., M.T., M.Sc.)		(Dr. Achmad Arifin, S.T., M.Eng.)	
Capaian Pembelajaran		CPL-PRODI yang dibebankan pada MK PLO Program Charged to The Course					
Learning Outcomes		CPL-02 PLO-02	Mampu menemukan, memahami, menjelaskan, merumuskan, dan menyelesaikan permasalahan umum pada bidang Teknik dan permasalahan khusus pada bidang Teknik Biomedika yang meliputi instrumentasi biomedika cerdas, teknik rehabilitasi medika, pencitraan dan pengolahan citra medika, serta informatika medika. <i>Able to find, understand, explain, formulate, and solve general problems in the field of Engineering and special problems in the field of Biomedical Engineering which includes intelligent biomedical instrumentation, medical rehabilitation techniques, imaging and processing of medical images, and medical informatics.</i>				
		CPL-06 PLO-06	Mampu menerapkan ilmu pengetahuan, keterampilan, dan metode terkini dalam menyelesaikan permasalahan di bidang Teknik Biomedika. <i>Able to apply the latest knowledge, skills and methods in solving problems in the field of Biomedical Engineering.</i>				
		Capaian Pembelajaran Mata Kuliah (CPMK) Course Learning Outcome (CLO) - If CLO as description capability of each Learning Stage in the course, then CLO = LLO					

	<p>CP MK 1 CLO 1</p> <p>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></p>																																																																	
	<p>CP MK 2 CLO 2</p> <p>Mahasiswa mampu menjelaskan kerja praktek yang dilaksanakan. <i>Students are able to explain the internship being carried out.</i></p>																																																																	
	<p>CP MK 3 CLO 3</p> <p>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></p>																																																																	
	<p>CP MK 4 CLO 4</p> <p>Mahasiswa mampu mempresentasikan hasil Magang dalam forum seminar. <i>Students are able to present their internship results in a seminar forum.</i></p>																																																																	
<p>Peta CPL – CP MK <i>Map of PLO - CLO</i></p>	<table border="1"> <thead> <tr> <th></th> <th>CPL-01</th> <th>CPL-02</th> <th>CPL-03</th> <th>CPL-04</th> <th>CPL-05</th> <th>CPL-06</th> <th>CPL-07</th> <th>CPL-08</th> <th>CPL-09</th> <th>CPL-10</th> <th>CPL-11</th> <th>CPL-12</th> </tr> </thead> <tbody> <tr> <td>CPMK 1 / SUB CPMK 1 <i>CLO 1 / LLO 1</i></td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPMK 2 / SUB CPMK 2 <i>CLO 2 / LLO 2</i></td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPMK 3 / SUB CPMK 3 <i>CLO 3 / LLO 3</i></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPMK 4 / SUB CPMK 4 <i>CLO 4 / LLO 4</i></td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		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 <i>CLO 1 / LLO 1</i>		√											CPMK 2 / SUB CPMK 2 <i>CLO 2 / LLO 2</i>		√											CPMK 3 / SUB CPMK 3 <i>CLO 3 / LLO 3</i>						√							CPMK 4 / SUB CPMK 4 <i>CLO 4 / LLO 4</i>		√										
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<p>Diskripsi Singkat MK Short Description of Course</p>	<p>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. <i>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.</i></p>																																																																	
<p>Bahan Kajian: Materi pembelajaran</p>	<p>1. Cakupan tentang kegiatan-kegiatan yang dilakukan selama kerja praktek berlangsung / <i>The coverage of activities carried out during internship takes place.</i></p>																																																																	

Course Materials:	2. Ilmu-ilmu yang digunakan selama kerja praktek / <i>Knowledge used during internship.</i>						
Pustaka <i>References</i>	Utama / Main:						
	1. -						
	Pendukung / Supporting:						
	1. -						
Dosen Pengampu <i>Lecturers</i>	M. Hilman Fatoni, S.T., M.T.						
Matakuliah syarat <i>Prerequisite</i>	-						
Mg ke/ Week	Kemampuan akhir tiap tahapan belajar (Sub-CPMK) / <i>Final ability of each learning stage (LLO)</i>	Penilaian / <i>Assessment</i>		Bantuan Pembelajaran; Metode Pembelajaran; Penugasan Mahasiswa; [<i>Estimasi Waktu</i>] / <i>Form of Learning; Learning Method; Student Assignment;</i> [<i>Estimated Time</i>]		Materi Pembelajaran [<i>Pustaka</i>] / <i>Learning Material</i> [<i>Reference</i>]	Bobot Penilaian / <i>Assessment Load (%)</i>
		Indikator / <i>Indicator</i>	Kriteria & Teknik / <i>Criteria & Techniques</i>				
(1)	(2)	(3)	(4)	Tatap Muka / <i>In-class</i> (5)	Daring / <i>Online</i> (6)	(7)	(8)
1	<ul style="list-style-type: none"> Mahasiswa mampu memahami proses kerja praktek yang dilaksanakan sesuai dengan topiknya. Mahasiswa mampu menjelaskan kerja praktek yang dilaksanakan. 	<ul style="list-style-type: none"> Kebenaran melaksanakan tugas. Keberhasilan menjelaskan tugas. Ketepatan waktu pelaksanaan tugas <i>Success in carrying out tasks.</i> 	Non-tes : Tugas 1: Menjalankan tugasnya sebagai siswa kerja praktek di industri sesuai dengan peraturan perusahaan / tempat kerja praktek dan mendapatkan penilaian secara	<ul style="list-style-type: none"> Bekerja maupun beraktifitas sesuai dengan peraturan perusahaan atau tempat kerja praktek. [20-40 x 8 x 60"] 	<ul style="list-style-type: none"> Bekerja maupun beraktifitas sesuai dengan peraturan perusahaan atau tempat kerja praktek. 	<ul style="list-style-type: none"> Cakupan tentang kegiatan-kegiatan yang dilakukan selama kerja praktek berlangsung. [-] 	70


	<ul style="list-style-type: none"> ● 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> 	<ul style="list-style-type: none"> ● <i>Success describes assignments.</i> ● <i>Timeliness of task executionbiocybernetics techniques.</i> 	<p>professional dari supervisor di industri (ditulis di form penilaian supervisor).</p> <p>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></p>			<ul style="list-style-type: none"> ● <i>The concept of biocybernetics</i> ● <i>History of biocybernetics.</i> <p>[Material link on MyITSClassroom]</p>	
2	<ul style="list-style-type: none"> ● Mahasiswa mampu mempresentasikan hasil Kerja Praktek dalam forum seminar. ● <i>Students are able to present their internship results in a seminar forum.</i> 	<ul style="list-style-type: none"> ● Kelengkapan dan kerapian hasil laporan presentasi. ● Ketepatan menjelaskan pemahaman materi ● <i>Able to explain the usefulness of physiological</i> 	<p>Non-tes :</p> <ul style="list-style-type: none"> ● Tugas 2: Buku laporan kerja praktek. ● Seminar Kerja Praktek: Presentasi secara individu maupun kelompok untuk melaporkan kegiatan dengan topik spesifik 	<ul style="list-style-type: none"> ● 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"] 	<ul style="list-style-type: none"> ● Chatting dan diskusi dalam forum platform ITS. ● <i>Chat and discussion in ITS platform forum.</i> 	<ul style="list-style-type: none"> ● Ilmu-ilmu yang digunakan selama kerja praktek. <p>[Link materi di MyITSClassroom]</p> <ul style="list-style-type: none"> ● <i>Modeling Concepts.</i> ● <i>Methods of modeling the</i> 	30

		<p><i>systems modeling for the field of Biomedical Engineering.</i></p>	<p>kerja praktek (Presentasi)</p> <p>Non-test :</p> <ul style="list-style-type: none"> ● 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> 			<p><i>human body physiological system.</i></p> <p>[Material link on MyITSClassroom]</p>	
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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 <i>Course Cluster: Basic Engineering</i>	Smt: VII
OTORISASI <i>AUTHORIZATION</i>	Penyusun RA & E <i>Compiler A&EP</i> 	Koordinator RMK <i>Course Cluster Coordinator</i> 	Ka DEP <i>Head of DEP</i> Dr. Achmad Arifin, S.T., M.Eng.

Mg ke/ Wee k (1)	Sub CP-MK / <i>Lesson Learning Outcomes (LLO)</i> (2)	Bentuk Asesmen (Penilaian) <i>Form of Assessment</i> (3)	Bobot / Load (%) (4)
1	<p>Sub CP-MK 1: Mahasiswa mampu memahami proses kerja praktek yang dilaksanakan sesuai dengan topiknya.</p> <p>Sub CP-MK 2: Mahasiswa mampu menjelaskan kerja praktek yang dilaksanakan.</p> <p>Sub CP-MK 3: Mahasiswa mampu menerapkan ilmu-ilmu yang didapatkan selama perkuliahan untuk menyelesaikan permasalahan di tempat kerja praktek.</p> <p>LLO 1: <i>Students are able to understand the</i></p>	<p>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).</p> <p>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></p>	70

	<p><i>internship process carried out in accordance with the topic.</i></p> <p>LLO 2: <i>Students are able to explain the internship being carried out.</i></p> <p>LLO 1: <i>Students are able to apply the knowledge gained during lectures to solve problems at the internship.</i></p>		
2	<p>Sub CP-MK 2: Mahasiswa memahami konsep pemodelan yang dapat digunakan untuk sistem fisiologi tubuh manusia.</p> <p>LLO 2: <i>Students are able to present their internship results in a seminar forum.</i></p>	<p>Non-tes : Tugas 2: Buku laporan kerja praktek. Seminar Kerja Praktek: Presentasi secara individu maupun kelompok untuk melaporkan kegiatan dengan topik spesifik.</p> <p>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></p>	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-02 / <i>PLO-02</i>	CPMK 1 / <i>CLO 1</i>	Week-1	Task 1	20
	CPMK 2 / <i>CLO 2</i>			
	CPMK 4 / <i>CLO 4</i>	Week-1	Task 2	30
		Week-15	Internship Seminary	30
CPL-06 / <i>PLO-06</i>	CPMK 3 / <i>CLO 3</i>	Week-1	Task 1	20
				Σ = 100%

No	Form of Assessment	PLO-01	PLO-02	PLO-03	PLO-04	PLO-05	PLO-06	PLO-07	PLO-08	PLO-09	PLO-10	PLO-11	PLO-12	Total
1	Task 1		0.2				0.2							0.4
2	Task 2		0.3											0.3
3	Internship Seminary		0.3											0.3
	Total		0.8				0.2							1