

Module Handbook

Telemedicine Systems



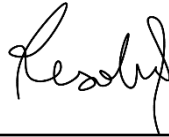
Bachelor Degree Program Department of Biomedical Engineering

Faculty of Intelligent Electrical Technology and Informatics
Institut Teknologi Sepuluh Nopember



MODULE HANDBOOK
Telemedicine Systems
DEPARTMENT OF BIOMEDICAL ENGINEERING
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
Number : 6889/IT2.IX.5.1.2/B/PP.03.00.00/2023

ENDORSEMENT PAGE

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

MODULE HANDBOOK
TELEMEDICINE SYSTEM

[illegible]

	CLO 4: Students understand and are able to explain the reliability and safety of the system seen from various aspects of law, ethics and the latest developments related to telemedicine technology.	PLO - 06
Content	This course of the Telemedicine System aims to provide an understanding of the principles, analysis, distribution and production applications in the field of electronic medicine and remote diagnostics. It also provides an overview of practical and outpatient telemedicine systems in the care of patients with chronic and persistent diseases, and shows new trends in health care techniques.	
Study and examination requirements and forms of examination	● In-class exercises ● Assignment 1, 2, 3 ● Presentation ● Mid-term examination ● Final examination	
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.	
Reading list	Main : 1. J. D. Bronzino, "The Biomedical Engineering Handbook, Second Edition, Volume I", IEEE Press, Boca Raton, 2000 2. J. D. Bronzino, "The Biomedical Engineering Handbook, Second Edition, Volume II", IEEE Press, Boca Raton, 2000 3. Maheu Marlene, M., "E-Health, Telehealth, and Telemedicine", Josey-Bass A Willey Company San Francisco, 2001 4. Norris, A., C., "Essential of Telemedicine and Telecare", John Wiley & Sons, Ltd, Baffins Lane, England, 2002 5. Bernard Fong, A.C.M. Fong, C.K. Li, "Telemedicine Technologies: Information Technologies In Medicine And Telehealth", John Wiley & Sons Ltd, Chichester, 2011	

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
Sistem Telemedicine Telemedicine System	EB234902	Teknik Biomedik Biomedical Engineering	T=3	P=0	Peminatan Specializatio	Nov 9, 2022
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. Rachmad Setiawan S.T., M.T.)		(Dr. Achmad Arifin, S.T., M.Eng.)	
Capaian Pembelajaran	CPL-PRODI yang dibebankan pada MK PLO Program Charged to The Course					
Learning Outcomes	CPL 2	Mampu menerapkan ilmu pengetahuan, keterampilan, dan metode terkini dalam menyelesaikan permasalahan di bidang Teknik Biomedika				
	PLO 2	Able to apply the latest knowledge, skills and methods in solving problems in the field of Biomedical Engineering				
	CPL 5	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				
	PLO 5	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				
	CPL 6	Mampu merancang dan melaksanakan eksperimen laboratorium dan/atau lapangan, menganalisa dan menginterpretasi data, serta menggunakan penilaian yang obyektif untuk menarik kesimpulan				

	PLO 6	Able to design and implement laboratory experiment and / or field experiments, analyze and interpret data, and use objective assessments to draw conclusions.												
	CPL 8	Mampu mendesain komponen, sistem, dan proses dalam bidang Teknik Biomedika yang sistematis, logis, dan realistis sesuai dengan spesifikasi yang ditentukan dengan mempertimbangkan aspek keselamatan, sosial, budaya, lingkungan, dan ekonomi dengan mengenal/memanfaatkan sumber daya lokal dan nasional dengan wawasan global												
	PLO 8	Able to design components, systems, and processes in the field of Biomedical Engineering that are systematic, logical, and realistic appropriate with specified specifications by considering aspects of safety, social, cultural, environmental, and economic by recognizing / utilizing local and national resources with global insight												
	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 memahami dan mampu menjelaskan sejarah dan pentingnya mempelajari telemedicine, konsep informasi medis, dan pertukaran data pada berbagai tingkat fasilitas kesehatan. <i>Students understand and are able to explain the history and importance of studying telemedicine , medical information concepts, and data exchange at various levels of health facilities.</i>												
	CP MK 2 CLO 2	Mahasiswa memahami dan mampu menjelaskan teknik pengambilan data medis pasien dan perangkat elektronik serta protokol yang digunakan. <i>Students understand and are able to explain patient medical data collection techniques and electronic devices and protocols used.</i>												
	CP MK 3 CLO 3	Mahasiswa memahami dan mampu menjelaskan konsep teknis mengenai pengiriman informasi medis secara elektronik melalui media internet dan sistem nirkabel. <i>Students understand and are able to explain technical concepts regarding sending medical information electronically via the internet and wireless systems.</i>												
	CP MK 4 CLO 4	Mahasiswa memahami dan mampu menjelaskan tentang keandalan dan keamanan sistem yang dilihat dari berbagai aspek hukum, etika dan perkembangan terkini terkait teknologi telemedicine <i>Students undertand and are able to explain the reliability and safety of the system seen from various aspects of law, ethics and the latest developments related to telemedicine technology.</i>												
Peta CPL – CP MK														
Map of PLO - CLO			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 Sistem Telemedicine ini bertujuan untuk memberikan pemahaman tentang prinsip-prinsip, analisis, distribusi dan aplikasi produksi pada bidang elektronika medika dan diagnostik jarak jauh. Selain itu juga memberikan gambaran mengenai sistem telemedicine praktis dan rawat jalan pada perawatan pasien penderita penyakit kronis dan persisten, serta menunjukkan tren baru dalam teknik perawatan kesehatan. <i>This course of the Telemedicine System aims to provide an understanding of the principles, analysis, distribution and production applications in the field of electronic medicine and remote diagnostics. It also provides an overview of practical and outpatient telemedicine systems in the care of patients with chronic and persistent diseases, and shows new trends in health care techniques.</i>													
Bahan Kajian: Materi pembelajaran Course Materials:	1. Sejarah dan ruang lingkup telemedicine / <i>History and scope of telemedicine</i> 2. Pengiriman data nirkabel / <i>Wireless data transmission</i> 3. Keandalan sitem informasi / <i>Information sytem reliability</i> 4. Regulasi, hukum, dan etika telemedicine / <i>Regulation,law, and ethic of telemedicine</i>													
Pustaka References	Utama / Main: 1. J. D. Bronzino, "The Biomedical Engineering Handbook, Second Edition, Volume I", IEEE Press, Boca Raton, 2000 2. J. D. Bronzino, "The Biomedical Engineering Handbook, Second Edition, Volume II", IEEE Press, Boca Raton, 2000 3. Maheu Marlene, M., "E-Health, Telehealth, and Telemedicine", Josey-Bass A Willey Company San Francisco, 2001 4. Norris, A., C., "Essential of Telemedicine and Telecare", John Wiley & Sons, Ltd, Baffins Lane, England, 2002 5. Bernard Fong, A.C.M. Fong, C.K. Li, "Telemedicine Technologies: Information Technologies In Medicine And Telehealth", John													

	Wiley & Sons Ltd, Chichester, 2011						
Dosen Pengampu Lecturers	Dr. Norma Hermawan, S.T., M.T., M.Sc. Dr. Rachmad Setiawan S.T., M.T.						
Matakuliah syarat Prerequisite	-						
Mg ke/ Week	Kemampuan akhir tiap tahapan belajar (Sub-CPMK) / <i>Final ability of each learning stage (LLO)</i>	Penilaian / Assessment		Bentuk 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 /Assess- ment Load (%)
		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)
1,2,3,4	Mahasiswa memahami dan mampu menjelaskan sejarah dan pentingnya mempelajari telemedicine, konsep informasi medis dan pertukaran data pada berbagai tingkat fasilitas kesehatan. <i>Students understand and are able to explain the history and importance of studying telemedicine, medical information concepts and</i>	• Kebenaran pemahaman, jawaban dan analisa. • Keberhasilan menjelaskan tugas. • Ketepatan waktu pengumpulan tugas. • <i>Truth understanding, answers and analysis.</i> • <i>Success of explaining assignments.</i> • <i>On time submission of assignments.</i>	Non-tes : Tugas Tertulis 1: Tugas tentang sejarah teknologi telekomunikasi di bidang kesehatan. Fasilitas kesehatan dan Sistem Informasi Rumah sakit (HIS), sistem komunikasi pada bidang kesehatan dan komunikasi klinis pada	• Kuliah dan diskusi. • Penugasan Terstruktur. [TM : 4x (3 x 50'')] [BM : 4x (3 x 50'')] [PT :4x(3 x 50'')] • <i>Presentation and discussions</i>	• Chatting dan diskusi dalam forum platform ITS. • <i>Chat and discussion in ITS platform forum.</i>	• Sejarah teknologi telekomunikasi di bidang kesehatan, pengenalan telemedicine, teleradiology, telepathology, dan lain-lain. • Fasilitas kesehatan dan Sistem Informasi Rumah Sakit (HIS), konsep dasar HIS pada	10

	data exchange at various levels of health facilities		telemedicine Tugas Tertulis 2: Tugas tentang protokol medis elektronik, scanning telematika dari data biologis, transfer sinyal biomedis pada telemedicine dan penggunaannya untuk perangkat stimulasi Non-test : Written Assignment 1: <i>Assignment about the history of telecommunication technology in the health sector. Health facilities and Hospital Information Systems (HIS), communication systems in the health sector and</i>	• <i>Structured assignments.</i> [FF : 2x (3 x 50")] [SA : 4x (3 x 50")] [SS : 4x (3 x 50")]		berbagai tingkat fasilitas kesehatan • Sistem komunikasi pada bidang kesehatan : transmisi dan pemrosesan data kesehatan dan informasi medis. • Komunikasi klinis pada telemedicine : manajemen teknis, hak akses • [Link materi di MyITSClassroom] • <i>History of telecommunication technology in the health sector, introduction to telemedicine, teleradiology, telepathology and others.</i> • <i>Health facilities and Hospital Information System (HIS), the basic concept of HIS at various levels of health facilities.</i>	
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			<i>clinical communication on telemedicine.</i> Written Assignment 2: <i>Task on electronic medical protocols, telematic scanning of biological data, transfer of biomedical signals to telemedicine and their use for stimulation devices.</i>			• <i>Communication systems in the health sector : transmission and processing of health data and medical information.</i> • <i>Clinical communication on telemedicine : technical management, access rights.</i>	
5,6,7	Mahasiswa memahami dan mampu menjelaskan teknik pengambilan data medis pasien dan perangkat elektronik serta protokol yang digunakan. <i>Students understand and are able to explain patient medical data collection techniques and electronic devices and protocols used.</i>	• Kebenaran pemahaman, jawaban dan analisa. • Keberhasilan menjelaskan tugas. • Ketepatan waktu pengumpulan tugas. • <i>Truth understanding, answers and analysis.</i> • <i>Success of explaining assignments.</i> • <i>On time submission of assignments.</i>	Non-tes : Tugas Tertulis 3: Tugas tentang internet dan kesehatan, paradigma ubiquitous computing dan aplikasi internet pada telemedicine, pengiriman data nirkabel (GSM) dan penggunaannya dalam terapi dan diagnostik telemedicine.	• Kuliah dan diskusi. • Penugasan Terstruktur. [TM : 3 x 50"] [BM : 3 x 50"] [PT : 3 x 50"] • <i>Presentation and discussions</i> • <i>Structured assignments.</i> <i>[FF : 3 x 50"]</i> <i>[SA : 3 x 50"]</i> <i>[SS : 3 x 50"]</i>	• Chatting dan diskusi dalam forum platform ITS. • <i>Chat and discussion in ITS platform forum.</i>	• Scanning telematika dari data biologis • Protokol medis elektronik : kartu pasien, database informasi medis, komunikasi berbagai unsur tersebut dengan mempertimbangkan keamanan data dan etika • Transfer sinyal biomedis pada telemedicine : transmitters, rantai transmisi, transmisi multi-channel	20

			Tugas Tertulis 4: Tugas tentang keandalan sistem informasi kesehatan, keamanan electric dari peralatan dan perangkat medis, serta permasalahan hukum dan etika pada teknologi telemedicine. Non-test : Written Assignment 3: <i>Tasks about internet and health, ubiquitous computing paradigm and internet applications on telemedicine, wireless data transmission (GSM) and their use in telemedicine therapy and diagnostics.</i>			• Transfer sinyal biomedis pada telemedicine dan penggunaannya untuk perangkat stimulasi : pacemakers dan neurostimulators • <i>Telematics scanning of biological data</i> • <i>Electronic medical protocols : patient cards , medical information databases , communi cation of these elements taking into account data security and ethics</i> • <i>Transfer signal biomedical on telemedicine: tran smitters, chains trans mi si , transmission o f multi-channel</i> • <i>Transfer of biomedical signals in telemedicine and their use for stimulation</i>	
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			Written Assignment 4: Tasks regarding the reliability of health information systems, the electric safety of medical equipment and devices, as well as legal and ethical issues in telemedicine technology.			devices: pacemakers and neurostimulators	
8	Penugasan Proyek Akhir Final Project Assignment						0
9, 10	Mahasiswa memahami dan mampu menjelaskan konsep teknis mengenai pengiriman informasi medis secara elektronik melalui media internet dan sistem nirkabel <i>Students understand and are able to explain technical concepts regarding sending medical information electronically via the internet and wireless systems.</i>	● Kebenaran pemahaman, jawaban dan analisa. ● Keberhasilan menjelaskan tugas. ● Ketepatan waktu pengumpulan tugas. ● Truth understanding, answers and analysis. ● Success of explaining assignments. ● On time submission of assignments.	Non-tes : Tugas Presentasi 1: Presentasi terkait laporan perkembangan proyek 1. Non-test : Presentation Assignment 1: Project Progress Report 1 Presentation.	● Kuliah dan diskusi. ● Penugasan Terstruktur. [TM : 3x(3 x 50")] [BM : 3x (3 x 50")] [PT : 3x (3 x 50")] ● Presentation and discussions ● Structured assignments.	● Chatting dan diskusi dalam forum platform ITS. ● Chat and discussion in ITS platform forum.	● Internet dan kesehatan : internet, www, protokol TCPIP, tipe koneksi ● Paradigma ubiquitous computing dan aplikasi internet pada telemedicine :sejarah web dan sistem diagnostik web. ● Pengiriman data nirkabel (GSM) dan penggunaannya dalam terapi dan	10

				[FF : 3x (3 x 50")] [SA : 3x (3 x 50")] [SS : 3x (3 x 50")]		diagnostik telemedicine • <i>Internet and health: internet , www, protocols TCPI P, connection type</i> • <i>The paradigm of ubiquitous computing and applications internet on telemedicine : the history of the web and diagnostics systems web</i> • <i>Wireless data transmission (G SM) and its use in telemedicine therapy and diagnostics</i>	
11, 12, 13, 14	Mahasiswa memahami dan mampu menjelaskan tentang keandalan dan keamanan sistem yang dilihat dari berbagai aspek hukum, etika dan perkembangan terkini terkait teknologi telemedicine. <i>Students understand and are able to explain the reliability</i>	• Kebenaran pemahaman, jawaban dan analisa. • Keberhasilan menjelaskan tugas. • Ketepatan waktu pengumpulan tugas. • Kebenaran isi presentasi.	Non-tes : Tugas Presentasi 2: Presentasi terkait laporan perkembangan proyek 2. Non-test : Presentation Assignment 2:	• Kuliah dan diskusi. • Penugasan Terstruktur. [TM + BM: 2 x 2 x 50 menit] • <i>Presentation and discussions</i> • <i>Structured assignments.</i>	• Chatting dan diskusi dalam forum platform ITS. • <i>Chat and discussion in ITS platform forum.</i>	• Keandalan sistem informasi kesehatan (hardware, software), keamanan electric dari peralatan dan perangkat medis • Permasalahan hukum dan etika pada teknologi telemedicine.	30

	<i>and safety of the system seen from various aspects of law, ethics and the latest developments related to telemedicine technology.</i>	• Kelancaran dan keberhasilan menyampaikan materi • Laporan tertulis • <i>Truth understanding, answers and analysis.</i> • <i>Success of explaining assignments.</i> • <i>On time submission of assignments.</i> • <i>The correctness of the presentation content.</i> • <i>Smoothness and success in delivering material.</i> • <i>Written report</i>	<i>Project Progress Report 2 Presentation.</i>	<i>[FF + SA: 2 x 2 x 50"]</i>		• Perkembangan terkini dari teknologi telemedicine • <i>Reliability of health information systems (hardware, software), electric safety of medical equipment and devices</i> • <i>Legal and ethical issues in telemedicine technology</i> • <i>Recent developments of telemedicine technology</i>	
15-16	PRESENTASI PROYEK AKHIR FINAL PROJECT PRESENTATION						30

TM=Tatap Muka, PT=Penugasan Terstruktur, BM=Belajar Mandiri.

FF = Face to Face, SA = Structured Assignment, SS = Self Study.

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

	ASSESSMENT & EVALUATION PLAN BACHELOR DEGREE PROGRAM OF BIOMEDICAL ENGINEERING - FTEIC ITS Course : Telemedicine System		RA&E
			Write Doc Code
Kode/code: EB234902	Bobot sks/credits (T/P): 3/0	Rumpun MK: Teknik Biomedik Course Cluster: Biomedical Engineering	Smt: Peminatan <i>Specialization</i>
OTORISASI AUTHORIZATION	Penyusun RA & E Compiler A&EP	Koordinator RMK Course Cluster Coordinator	Ka DEP Head of DEP Dr. Achmad Arifin, S.T., M.Eng.

Mg ke/ Wee k (1)	Sub CP-MK / Lesson Learning Outcomes (LLO) (2)	Bentuk Asesmen (Penilaian) Form of Assessment (3)	Bobot / Load (%) (4)
1,2,3,4	Sub CP-MK 1: Mahasiswa memahami dan mampu menjelaskan sejarah dan pentingnya mempelajari telemedicine, konsep informasi medis dan pertukaran data pada berbagai tingkat fasilitas kesehatan. LLO 1: <i>Students understand and are able to explain the history and importance of studying telemedicine,</i>	Non-tes : Tugas Tertulis 1: Tugas tentang sejarah teknologi telekomunikasi di bidang kesehatan. Fasilitas kesehatan dan Sistem Informasi Rumah sakit (HIS), sistem komunikasi pada bidang kesehatan dan komunikasi klinis pada telemedicine Tugas Tertulis 2: Tugas tentang protokol medis elektronik, scanning telematika dari data biologis, transfer sinyal biomedis pada telemedicine dan penggunaannya untuk perangkat stimulasi Non-test : Written Assignment 1: <i>Assignment about the history of telecommunication technology in the health sector. Health facilities and Hospital Information Systems (HIS), communication systems in the health sector and clinical communication on telemedicine.</i>	10

	<i>medical information concepts and data exchange at various levels of health facilities</i>	Written Assignment 2: <i>Task on electronic medical protocols, telematic scanning of biological data, transfer of biomedical signals to telemedicine and their use for stimulation devices.</i>	
5,6,7	Sub CP-MK 2: Mahasiswa memahami dan mampu menjelaskan teknik pengambilan data medis pasien dan perangkat elektronik serta protokol yang digunakan. LLO 2: <i>Students understand and are able to explain patient medical data collection techniques and electronic devices and protocols used.</i>	Non-tes : Tugas Tertulis 3: Tugas tentang internet dan kesehatan, paradigma ubiquitous computing dan aplikasi internet pada telemedicine, pengiriman data nirkabel (GSM) dan penggunaannya dalam terapi dan diagnostik telemedicine. Tugas Tertulis 4: Tugas tentang keandalan sistem informasi kesehatan, keamanan electric dari peralatan dan perangkat medis, serta permasalahan hukum dan etika pada teknologi telemedicine. Non-test : Written Assignment 3: <i>Tasks about internet and health, ubiquitous computing paradigm and internet applications on telemedicine, wireless data transmission (GSM) and their use in telemedicine therapy and diagnostics.</i> Written Assignment 4: <i>Tasks regarding the reliability of health information systems, the electric safety of medical equipment and devices, as well as legal and ethical issues in telemedicine technology.</i>	20
8	Penugasan Proyek Akhir Final Project Assignment	Penentuan tema presentasi proyek akhir <i>Determination of the Final Project Presentation's theme.</i>	
9,10	Sub CP-MK 3: Mahasiswa memahami dan mampu menjelaskan konsep teknis mengenai pengiriman	Non-tes : Tugas Presentasi 1: Presentasi terkait laporan perkembangan proyek 1. Non-test : Presentation Assignment 1: <i>Project Progress Report 1 Presentation.</i>	10

	informasi medis secara elektronik melalui media internet dan sistem nirkabel LLO 3: <i>Students understand and are able to explain technical concepts regarding sending medical information electronically via the internet and wireless systems</i>		
11,1 2,13, 14	Sub CP-MK 4: Mahasiswa memahami dan mampu menjelaskan tentang keandalan dan keamanan sistem yang dilihat dari berbagai aspek hukum, etika dan perkembangan terkini terkait teknologi telemedicine. LLO 4: <i>Students understand and are able to explain the reliability and safety of the system seen from various aspects of law, ethics and the latest developments related to telemedicine technology.</i>	Non-tes : Tugas Presentasi 2: Presentasi terkait laporan perkembangan proyek 2. Non-test : Presentation Assignment 2: <i>Project Progress Report 2 Presentation.</i>	30

15,1 6	Proyek Akhir <i>Final Project</i>	Tes: Presentasi: Presentasi Tugas Proyek Akhir. Test: Presentation: <i>Final Project Presentation.</i>	30
Total bobot penilaian <i>Total assessment load</i>			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 2 / <i>PLO 2</i>	CPMK 1 / <i>CLO 1</i>	Week- 5-7	Written Assignment 3 & 4	5
		Week- 9-10	Presentation Assignment 1	5
		Week 15-16	Final Project Presentation	15
CPL 5 / <i>PLO 5</i>	CPMK 2 / <i>CLO 2</i>	Week- 1-4	Written Assignment 1 & 2	5
		Week- 5-7	Written Assignment 3 & 4	5
		Week 11-14	Presentation Assignment 2	15
CPL 6 / <i>PLO 6</i>	CPMK 4 / <i>CLO 4</i>	Week- 1-4	Written Assignment 1 & 2	5
		Week- 5-7	Written Assignment 3 & 4	5
		Week 11-14	Presentation Assignment 2	15
CPL 8 / <i>PLO 8</i>	CPMK 3 / <i>CLO 3</i>	Week- 5-7	Written Assignment 3 & 4	5
		Week- 9-10	Presentation Assignment 1	5
		Week 15-16	Final Project Presentation	15
				$\Sigma = 100\%$

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	Evaluasi 1					0.05	0.05							0.1

	(2 Tugas Tertulis) <i>Evaluation 1 (2 Written Assignment)</i>													
2	Laporan Perkembangan Proyek 1 (1 Tugas Presentasi) <i>Project Progress Report 1 (1 Presentation Assignment)</i>		0.05						0.05					0.1
3	Evaluasi 2 (2 Tugas Tertulis) <i>Evaluation 2 (2 Written Assignment)</i>		0.05			0.05	0.05		0.05					0.2
4	Laporan													

	Perkembangan Proyek 2 (1 Tugas Presentasi) <i>Project Progress Report 2</i> (1 <i>Presentation Assignment</i>)					0.15	0.15							0.3
5	Demo Final Project <i>Final Project Presentation</i>		0.15						0.15					0.3
	<i>Total</i>		0.25			0.25	0.25		0.25					1

