

Module Description

Module name	Course Module
Module level, if applicable	Bachelor of Electronics Engineering
Code, if applicable	5215-064-2
Subtitle, if applicable	
Course, if applicable	Signal Processing Techniques
Semester(s) in which the module istaught	V
Person responsible for the module	Lecturer of Course
Lecturer	Dr.Wisnu Djatmiko,M.T.
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a compulsory course and offered in the 5 th semester.
Type of teaching, contact hours	<p>Teaching methods used in this course are:</p> <ul style="list-style-type: none"> - Lecture (i.e., group investigation, small group discussion, casestudy, and video-based learning) - Structured assignments (i.e., essays and case study) - Practice (i.e., computer simulation and case study in laboratorium) <p>The class size for lecture is 30 students. Contact hours for lecture is 27 hours, assignments are 32 hours</p>
Workload	<p>For this course, students required to meet a minimum of 91 hours in one semester, which consist of:</p> <ul style="list-style-type: none"> - 27 hours for lecture, - 32 hours for structured assignments, - 32 hours for private study
Credit points	2 credit points (equivalent with 2.88 ECTS)
Requirements according to the examination regulations	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.
Recommended prerequisites	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.

<p>PLO-ILO-CLO</p>	<p>After completing the course and given with this case:</p> <p>Course Learning Objectives (CLO1): Mahasiswa mampu memahami elemen dan struktur sistem pengolah sinyal digital (K1) (10)</p> <p>Course Learning Objectives (CLO2): Mahasiswa mampu memahami konsep frekuensi sinyal waktu kontinu dan diskrit, sistem rasional, fasa minimum (K1) (10)</p> <p>Course Learning Objectives (CLO3): Mahasiswa mampu memahami menganalisa struktur sistem LTI dan sinyal melalui transformasi Fourier diskrit (K1, S2, S3, C1) (20)</p> <p>Course Learning Objectives (CLO4): Mahasiswa mampu merancang filter IIR dan FIR (K2, S1, S3, C1) (20)</p> <p>Course Learning Objectives (CLO5): Mahasiswa mampu menginterpretasikan sinyal hasil FFT (K2, S1, S3, C1) (20)</p> <p>Course Learning Objectives (CLO6): Mahasiswa mampu mengaplikasikan DFT (K2, S1, S3, C1) (20)</p> <p>Program Learning Outcome (PLO3): Menerapkan kompetensi teknik elektronika untuk memecahkan masalah keteknikan</p> <p>Knowledge (K1): Menerapkan matematika, ilmu dasar dan teknik dasar untuk merancang dan menganalisis untuk memecahkan masalah di bidang teknik elektronika.</p> <p>Knowledge (K2): Untuk menerapkan prinsip-prinsip teknik elektronik untuk memecahkan masalah dalam sistem teknik elektronik</p> <p>Engineering and Education Skill (S1): Mampu merancang prinsip dan aplikasi sistem rekayasa elektronik</p> <p>Engineering and Education Skill (S2): Mampu menganalisis prinsip kerja dan penerapan sistem rekayasa elektronik</p> <p>Engineering and Education Skill (S3): Mampu mencari alternatif solusi dan pemecahan masalah di bidang teknik elektronika.</p> <p>Competence (C1): Menerapkan teknologi baru di bidang rekayasa dengan mempertimbangkan standar teknis, aspek kinerja, keandalan, penerapan, dan keberlanjutan</p>
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Content	<p>Students will learn about: Kuliah ini membahas elemen dan struktur sistem pengolah sinyal digital, konsep frekuensi sinyal waktu kontinu dan diskrit, analisa struktur sistem LTI, sistem: rasional, fasa minimum; perancangan filter IIR dan FIR dengan metode: impulse, invarian, bilinear, window; transformasi frekuensi domain digital; analisa sinyal melalui transformasi Fourier diskrit; interpretasi sinyal hasil FFT, aplikasi DFT.</p>
Forms of Assessment	<p>Assessment is carried out based on written examinations, assessment/evaluation of the learning process and performance with the following components: Structured tasks: 20% ; Quiz 10% ; Mid Test : 35% Final Test: 35%</p>
Study and examination requirements and forms of examination	<p>Study and examination requirements:</p> <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get final grade. <p>Form of examination: Written exam: Essay</p>
Media employed	<p>Direct Whiteboard, Google classroom, Tutorial Video by Youtube and Power Point Presentation.</p>
Reading list	