

Module Description

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| Module name | Course Module |
| Module level, if applicable | Bachelor of Electronics Engineering |
| Code, if applicable | 5215-178-3 |
| Subtitle, if applicable | |
| Course, if applicable | Mathematics III |
| Semester(s) in which the module istaught | III |
| Person responsible for the module | Lecturer of Course |
| Lecturer | Dr. Ir. Rusmono, M.Pd |
| Language | Indonesian Language [Bahasa Indonesia] |
| Relation to Curriculum | This course is a compulsory course and offered in the 3 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 case based learning) - Structured assignments (i.e., essays and case study) - Practice (i.e., computer simulation and case study in laboratory) <p>The class size for lecture is 30 students. Contact hours for lecture is 40 hours, assignments is 48 hours</p> |
| Workload | <p>For this course, students are required to meet a minimum of 136 hours in one semester, which consist of:</p> <ul style="list-style-type: none"> - 40 hours for lecture, - 48 hours for structured assignments, - 48 hours for private study, |
| Credit points | 3 credit points (equivalent with 4.32 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. |

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| <p>PLO-CLO-ILO</p> | <p>After completing the course and given with this case:</p> <p>Course Learning Objectives (CLO1): Mahasiswa mampu memahami prinsip Matematika (K1) (10)</p> <p>Course Learning Objectives (CLO2): Mahasiswa mampu memahami metoda Matematika (K1) (10)</p> <p>Course Learning Objectives (CLO3): Mahasiswa mampu menganalisis gejala fisik pada Matematika (K1, S2, C1) (20)</p> <p>Course Learning Objectives (CLO4): Mahasiswa mampu merumuskan masalah-masalah yang dihadapi dalam bidang teknik elektro (K1, S2, S3, C1) (20)</p> <p>Course Learning Objectives (CLO5): Mahasiswa mampu menciptakan prosedur penyelesaian soal-soal persamaan diferensial homogen dan tidak homogen; deret tak hingga; integral vektor; dan transformasi Laplace (K1, S2, S3, C1) (40)</p> <p>Program Learning Outcome (PLO2): Menerapkan ilmu-ilmu dasar untuk memecahkan masalah teknik elektronika</p> <p>Knowledge (K1): Menerapkan matematika, ilmu dasar dan teknik dasar untuk merancang dan menganalisis untuk memecahkan masalah di bidang teknik elektronika.</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> |
| <p>Content</p> | <p>Students will learn about: Tujuan mata kuliah ini untuk membekali mahasiswa agar dapat menguasai prinsip dan metoda matematika sehingga mampu menganalisis gejala fisik serta merumuskan dan memecahkan masalah-masalah yang dihadapi dalam bidang teknik elektro. Materi perkuliahan yang dikaji meliputi sistem bilangan riil, fungsi dan sistem koordinat cartesian dan polar, grafik suatu fungsi dan fungsi inversnya, limit dan kekontinuan suatu fungsi, teorema-teorema limit, turunan dan diferensial, diferensial parsial, penerapan diferensial, integral tak tentu.</p> |

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| Forms of Assessment | Assessment is carried out based on written examinations, assessment/evaluation of the learning process and performance with the following components: Sikap (S): 5%, Keterampilan Umum (KU): 5%, Membuat Program: 20%, UTS, UAS, TI: 70% |
| 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 | Direct Whiteboard, Google classroom, Tutorial Video by Youtube and Power Point Presentation. |
| Reading list | <p>Referensi Utama:</p> <ol style="list-style-type: none"> 1. Kreyszig, Erwin: Matematika Teknik Lanjutan Jilid 2. Jakarta, Penerbit Erlangga, 1991. Print. 2. Rawuh, B.Kartasasmita, I Nyoman Susila: Kalkulus dan Geometri Analitis Jilid 2. Jakarta, Penerbit Erlangga, 1984. Print. 3. Riogilang, RH: Persamaan Diferensial. Bandung, Penerbit Bina Cipta, 1979. Print. 4. Spiegel, Murray R, P.Silaban, HJ Wospakrik: Transformasi Laplace. Jakarta, Penerbit Erlangga, 1995. Print. 5. Spiegel, Murray R, HJ Wospakrik: Analisis Vektor. Jakarta, Penerbit Erlangga, 1995. Print. <p>Referensi Pendukung:</p> <ol style="list-style-type: none"> 6. Rusmono: RPS Matematika III. Prodi Pendidikan Vokasional Teknik Elektronika FT UNJ. Jakarta, 2021. Print. 7. Rusmono: Bahan Pembelajaran Kompilasi Matematika III. Prodi Pendidikan Vokasional Teknik Elektronika FT UNJ. Jakarta, 2021. Print. |