


Rencana Pembelajaran Semester

|  | | INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS) FAKULTAS SAINS DAN ANALITIKA DATA DEPARTEMEN MATEMATIKA | | | | Kode Dokumen |
|---|--|--|-----------------|--|--------------|-----------------|
| RENCANA PEMBELAJARAN SEMESTER | | | | | | |
| MATA KULIAH (MK) | KODE | Rumpun MK | BOBOT (sks) | | SEMESTER | Tgl Penyusunan |
| Matematika / Mathematics | SM 234151 | | 3 | | 2 | 28 Oktober 2022 |
| OTORISASI / PENGESAHAN | Dosen Pengembang RPS | | Koordinator RMK | | Ka Prodi | |
| | Dr. Tahiyatul Asfihani, S.Si, M.Si | | Tanda tangan | | Tanda tangan | |
| Capaian Pembelajaran | CPL-PRODI yang dibebankan pada MK | | | | | |
| | CPL 1 | Mahasiswa mampu mengidentifikasi dan menjelaskan pondasi matematika yang meliputi murni, terapan dan dasar-dasar komputasi | | | | |
| | LO 1 | <i>Students are able to identify and explain foundations of mathematics that include pure, applied, and the basic of computing.</i> | | | | |
| | CPL 2 | Mahasiswa mampu menyelesaikan permasalahan sederhana dan praktis dengan mengaplikasikan pernyataan matematika dasar, metode dan komputasi. | | | | |
| | LO 2 | <i>Students are able to solve simple and practical problems by applying basic mathematical statements, methods and computations.</i> | | | | |
| | Capaian Pembelajaran Mata Kuliah (CPMK) | | | | | |
| | CPMK 1 | Mahasiswa mampu menerapkan konsep matriks untuk menyelesaikan sistem persamaan linier dan menentukan nilai eigen. | | | | |
| | CLO 1 | <i>Students are able to apply matrix concepts to solve a linear equation system and determine the eigen value .</i> | | | | |
| | CPMK 2 | Mahasiswa mampu menerapkan persamaan atau petidaksamaan serta nilai mutlak. | | | | |
| | CLO 2 | <i>Students are able to apply equations or inequalities and also absolute value.</i> | | | | |
| CPMK 3 | Mampu menggambar grafik fungsi polinomial dan fungsi transenden. | | | | | |
| CLO 3 | <i>Students are able to draw graphs of polynomial functions and transcendent functions.</i> | | | | | |
| CPMK 4 | Mampu mendefinisikan sinus, cosines, tangent, dan megaplikasikan kesamaan trigonometri dalam menyederhanakan/menyelesaikan persamaan trigonometri. | | | | | |
| CLO 4 | | | | | | |

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| | | <i>Students are able to define sinus, cosinus, tangent, and apply trigonometric equation in simplifying /solving trigonometric equation.</i> |
| CPMK 5 <i>CLO 5</i> | Mampu menurunkan (mendiferensialkan) fungsi eksplisit, menerapkan aturan rantai, turunan fungsi implisit serta mampu menentukan nilai maks/min untuk fungsi polynomial. <i>Students are able to differentiate explicit functions, apply chain rule, derivative implicit functions, and able to determine maximum/minimum value of the polynomial function.</i> | |
| CPMK 6 <i>CLO 6</i> | Mampu menyelesaikan integral menggunakan teorema fundamental kalkulus dan rumus rumus dasar integrasi. <i>Students are able to solve integral using fundamental calculus theorem and basic integration equation.</i> | |
| CPMK 7 <i>CLO 7</i> | Mampu menghitung luas bidang datar dan volume benda putar. <i>Students are able to calculate the area between curves and the volume of area revolution.</i> | |
| CPMK 8 <i>CLO 8</i> | Mampu memahami geometri. <i>Students are able to understand geometry.</i> | |

**Peta CPL – CP
MK**

| | CPL 1 <i>LO 1</i> | CPL 2 <i>LO 2</i> |
|------------------------|------------------------------|------------------------------|
| CPMK 1 <i>CLO 1</i> | √ | √ |
| CPMK 2 <i>CLO 2</i> | √ | √ |
| CPMK 3 <i>CLO 3</i> | √ | √ |
| CPMK 4 <i>CLO 4</i> | √ | √ |
| CPMK 5 <i>CLO 5</i> | √ | √ |
| CPMK 6 <i>CLO 6</i> | √ | √ |
| CPMK 7 <i>CLO 7</i> | √ | √ |
| CPMK 8 <i>CLO 8</i> | √ | √ |

Catatan: Jumlah CPL maksimum = 15

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| Diskripsi Singkat MK | <p>Mata kuliah ini membekali mahasiswa konsep matrik, deteminan dan sistem persamaan linier, konsep berpikir matematis dalam penyelesaian masalah-masalah rekayasa, pemodelan, dan lain-lain dalam keteknikan yang berkaitan dengan aplikasi diferensial. Materi perkuliahan lebih ditekankan pada teknik penyelesaian masalah-masalah riil yang dapat diformulasikan ke dalam fungsi satu variabel bebas.</p> <p>Materi perkuliahan meliputi: matrik dan determinan, penyelesaian sistem persamaan linier, nilai Eigen dan vektor Eigen, sistim bilangan riil (keterurutan bilangan riil), fungsi dan gafik, derivatif dan aplikasinya, integral dan aplikasinya pada perhitungan luas bidang datar dan volume benda putar, geometri.</p> |
| Short Description of Course | <p><i>In this course, students will be given matrix concept, determinant and linear equation system, Mathematicssal thinking conception in order to solve manipulated problems, modeling, etc. in technique that relate to differential application. The course will be focusing on the technique to solve real problems that can be formulated to one independent variable function.</i></p> <p><i>In this course, student will learn: matrix and determinant, linear equation system, Eigen value and Eigen vector, real number system (real number order), functions and graph, derivative and its application, integral and its application the area between curves and the volume of area revolution and geometry.</i></p> |
| Bahan Kajian: Materi pembelajaran | <ol style="list-style-type: none"> 1. Matriks: Konsep dasar aljabar matrik, menghitung determinan, invers matrik dengan matrik adjoint atau operasi baris elementer, dan penyelesaian sistem persamaan linier, menentukan nilai eigen dan vector eigen. 2. Sistem Bilangan Riil: Pengertian sistem bilangan riil , aritmatika, perpangkatan, persamaan dan pertidaksamaan. 3. Fungsi & Grafik: Domain, range, fungsi dasar Polinomial, Transenden: eksponensial , logaritma beserta sketsa grafiknya. 4. Trigonometri: Definisi Sinus , cosinus, tangen dan grafik fungsi trigonometri, kesamaan trigonometri , himpunan penyelesaian persamaan dalam bentuk trigonometri. 5. Diferensial/ turunan: Definisi turunan, rumus dasar diferensiasi, aturan rantai, aplikasi maks/min pada fungsi polinomial 6. Integral: Definisi, sifat dasar integral tak tentu, rumus-rumus dasar int tak tentu, integral tak tentu dgn substitusi, integral parsial, integral tertentu dengan Teorema Fundamental Kalkulus_1. 7. Aplikasi Integral: Luas bidang datar, volume benda putar. 8. Geometri: sistim koordinat dua dimensi, garis garis sejajar atau tegak lurus, skala, titik tengah antara 2 titik, Phytagoras, jarak dua titik, skala, irusan kerucut, pencerminan, proyeksi dan sudut. |
| Course Materials: | <ol style="list-style-type: none"> 1. <i>Matrix: The basic concept of matrix algebra, calculating determinants, inverse matrices with adjoint matrices or elementary line operations, and solving systems of linear equations, determining eigenvalues and eigenvectors.</i> 2. <i>Real Number System: Understanding the real number system, arithmetic, power, equality and inequalities.</i> 3. <i>Functions & Graphs: Domain, range, basic functions Polynomial, Transcendent: exponential, logarithmic along with graph sketches.</i> |

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| | <p>4. <i>Trigonometry: Definition of Sine, cosine, tangent and graph of trigonometric functions, trigonometric equations, set of solving equations in trigonometric collisions.</i></p> <p>5. <i>Differential/derivative: Definition of derivative, the derivative with respect to x, chain rule, max/min application to polynomial functions.</i></p> <p>6. <i>Integral: Definition, the nature of the indefinite integral, the basic formulas of the indefinite int, the integral by substitution, the partial integral, the definite integral with the Fundamental Theorem Calculus_1.</i></p> <p>7. <i>Integral Application: The area between curve, the volume of the volume of area revolution.</i></p> <p>8. <i>Geometry: Two-dimensional coordinate system, parallel or perpendicular lines, scale, midpoint between 2 points, pythagorean, two-point distance, scale, conic alignment, reflection, projection and angle.</i></p> | | | | | |
| Pustaka <i>References</i> | Utama/Main: | | | | | |
| | <ol style="list-style-type: none"> 1. Tim Dosen - Matematika ITS, Buku Ajar Matematika I FADP , Edisi ke-1 Departemen Matematika ITS, 2018 2. Anton, H. dkk, Calculus, 10-th edition, John Wiley & Sons, New York, 2012. | | | | | |
| | Pendukung/ Supporting: | | | | | |
| | <ol style="list-style-type: none"> 1. Kreyzig, E, Advanced Engineering Mathematicsss, 10-th edition, John Wiley & Sons, Singapore, 2011. 2. Purcell, J, E, Rigdon, S., E., Calculus, 9-th edition, Prentice-Hall, New Jersey, 2006. 3. James Stewart , Calculus, ed.7, Brooks/cole-Cengage Learning, Canada,2012. | | | | | |
| Dosen Pengampu: <i>Lecturers:</i> | | | | | | |
| Matakuliah syarat: <i>Prerequisite:</i> | | | | | | |
| Mg Ke- / Week | Kemampuan akhir tiap tahapan belajar (Sub-CPMK) / Final ability of each learning stafe (ILO) | Penilaian / Assessment | | Bantuk Pembelajaran; Metode Pembelajaran; Penugasan Mahasiswa; [Estimasi Waktu] / | Materi Pembelajaran [Pustaka] / Learning Material | Bobot Penilaian (%) / Asses- |
| | | Indikator / Indicator | Kriteria & Teknik / Criteria & Techniques | | | |

| | | | | <i>Form of Learning; Learning Method; Student Assignment; [Estimated Time]</i> | | <i>[Reference]</i> | <i>ment Load (%)</i> | |
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| (1) | (2) | (3) | (4) | Tatap Muka (5) | Daring (6) | (7) | (8) | |
| 1, 2 | Pengantar Kuliah <i>Introduction of Learning</i> | Motivasi belajar, menyampaikan RPS, aturan perkuliahan dan sistem penilaian macam Evaluasi dan Prosentase masing masing evaluasi, Buku Ajar / sumber pustaka <i>Learning motivation, delivering learning plan, lectures rules and assessment systems such as evaluation and percentage of each evaluation, textbooks / library sources</i> | | | | | | |
| | CPMK 1 : Mahasiswa mampu menerapkan konsep matriks untuk menyelesaikan sistem persamaan linier dan menentukan nilai eigen. <i>CLO 1: Students are able to apply matrix concepts to solve a linear equation system and determine the eigen value .</i> | <ul style="list-style-type: none"> • Ketepatan memahami sifat-sifat matrik , determinan dan menghitung nilai determinan. • Ketepatan dan kemampuan menyelesaikan SPL. • Ketepatan menentukan nilai eigen dan vektor eigen. <ul style="list-style-type: none"> • <i>The accuracy to understand matrix properties, determinant, and solve determinant value.</i> • <i>The accuracy to solve SoLE</i> | Tugas-1: Menyusun rubrik yang berhubungan dengan permasalahan matriks dan determinan. Tugas-2: Menyelesaikan tugas dalam bentuk soal essay tentang determinan dan matriks Quiz 1: Mengerjakan soal essay determinan, SPL, invers matriks Assignment-1 <i>Construct a rubric that relate to matrix and determinant problems.</i> Assingment-2 | Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 3x2x 50"] [BM : 3x2 x 60"] [PT : 3 x2x 60"] <i>Tutorial activities, exercises and provide assignment .</i> [FF : 3 x2x 50"] [SA : 3 x 2x60"] [SS : 3 x 2x 60"] | Kuliah, latihan soal-soal serta memberikan soal tugas melalui synchronous / asyncornous di MyITS Classroom. <i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i> | Matriks dan Determinan, Penyelesaian sistem persamaan linier Pustaka : [1] Tim Dosen Matematika ITS <i>Matrix and determinant, solving linear equation system.</i> Reference: | 5 | |

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| | | <ul style="list-style-type: none"> • <i>The accuracy of determining eigen value and eigen vector.</i> | <i>Solving assignments in essay about matrix and determinant.</i> Quiz 1 <i>Solving the essay test: determinant, SoLE, and inverse matrix .</i> | | | [1] Lecturer team of ITS Mathematics | |
| Asistensi 1 / 1st Assistance Latihan soal-soal [TM : 2 x 50"] <i>Practice- Exercises [FF : 2 x 50"]</i> | | | | | | | |
| 3, 4 | CPMK 2: Mahasiswa mampu menerapkan persamaan atau pertidaksamaan serta nilai mutlak. <i>CLO 2: Students are able to apply equations or inequalities and also absolute value.</i> | <ul style="list-style-type: none"> • Ketepatan menyelesaikan persamaan dan pertidaksamaan dalam sistem bilangan riil • Ketepatan menyelesaikan persamaan dan pertidaksamaan nilai mutlak <ul style="list-style-type: none"> • <i>The accuracy of solving equations and inequalities in the real number system</i> • <i>The accuracy of solving equations and inequalities in absolute value</i> | Tugas-3: Menyelesaikan tugas dalam soal esay persamaan dan pertidaksamaan. Assignment-3 <i>Complete the assignment of equations and inequalities essay problems.</i> | Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 3x2x 50"] [BM : 3x2 x 60"] [PT : 3 x2x 60"] <i>Tutorial activities, exercises and provide assignment .</i> <i>[FF : 3 x2x 50"]</i> <i>[SA : 3 x 2x60"]</i> <i>[SS : 3 x 2x 60"]</i> | Kuliah, latihan soal-soal serta memberikan soal tugas melalui synchronous / asyncornous di MyITS Classroom. <i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i> | Sistem Bilangan Real, logaritma, nilai mutlak, pertidaksamaan , Persamaan garis. Pustaka : [1] Tim Dosen -Matematika ITS [2] Anton, H <i>Real Number System, logarithms, absolute value, Inequalities, the coordinates</i> | 5 |

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| | | | | | | <i>planes, line equation.</i> Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H | |
| ASISTENSI KE 2 / 2nd Assistance Latihan soal-soal [TM : 2 x 50"] <i>Practice- Exercises [FF : 2 x 50"]</i> | | | | | | | |
| 5 | CPMK 3: Mampu menggambar grafik fungsi polinomial dan fungsi transenden. <i>CLO 3: Students are able to draw graphs of polynomial functions and transcendent functions.</i> | <ul style="list-style-type: none"> • Ketepatan menggambar grafik fungsi polinomial dan fungsi transenden • Ketepatan dalam menentukan invers fungsi. <ul style="list-style-type: none"> • <i>The accuracy of graphing polynomial functions and transcendent functions</i> • <i>Accuracy in determining the</i> | Quiz 2: Mengerjakan soal esay nilai mutlak, invers fungsi, grafik fungsi. Quiz-2 <i>Essay on absolute value, inverse functions, and graph functions.</i> | Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 2x2x 50"] [BM : 2x2 x 60"] [PT : 2x2x 60"] <i>Tutorial activities, exercises and provide assignment .</i> <i>[FF : 2 x2x 50"]</i> <i>[SA : 2 x 2x60"]</i> <i>[SS : 2 x 2x 60"]</i> | Kuliah, latihan soal-soal serta memberikan soal tugas melalui synchronous / asyncornous di MyITS Classroom. <i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i> | Fungsi dan operasi fungsi, fungsi polinomial, invers fungsi, fungsi transenden dan trigonometri, grafik fungsi Pustaka : [1] Tim Dosen Matematika ITS [2] Anton, H [3] Purcell <i>Property and operation functions, polynomial functions, inverse functions, trancendent</i> | 10 |

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| | | <i>inverse of the function.</i> | | | | <i>and trigonometry functions, graph functions.</i> Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] Purcell | |
| 6,7 | CPMK 4: Mampu mendefinisikan sinus, cosines, tangent, dan megaplikasikan kesamaan trigonometri dalam menyederhanakan/ menyelesaikan persamaan trigonometri. CLO 4: <i>Students are able to define sinus, cosinus, tangent, and apply it to trigonometric equation in simplifying/solving trigonometry equation.</i> | Ketepatan dalam mendefinisikan sinus, cosines, tangent, dan megaplikasikan kesamaan trigonometri dalam menyederhanakan/ menyelesaikan persamaan trigonometri. <i>The accuracy of defining sinus, cosinus, tangent, and apply it to trigonometric equation in simplifying/ solving trigonometry equation.</i> | Tugas-5: Meringkas materi kuliah, membuat rubrik. Assignment-5 <i>Sum up material, making a rubric.</i> | Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 3x2x 50"] [BM : 3x2 x 60"] [PT : 3 x2x 60"] <i>Tutorial activities, exercises and provide assignment .</i> [FF : 3 x2x 50"] [SA : 3 x 2x60"] [SS : 3 x 2x 60"] | Kuliah, latihan soal-soal serta memberikan soal tugas melalui synchronous / asyncornous di MyITS Classroom. <i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i> | Sinus, cosines, tangent, cotangent, secan, cosecan, persamaan trigonometri Pustaka : [1] Tim Dosen -Matematika ITS [2] Anton, H <i>Sinus, cosinus, tangent, cotangent, secan, cosecan, trigonometry equation.</i> Reference: | 5 |

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| | | | | | | [1] Lecturer team of ITS Mathematics [2] Anton, H | |
| ASISTENSI KE 3 / 3th Assistance Latihan soal-soal [TM : 2 x 50"] Practice- Exercises [FF : 2 x 50"] | | | | | | | |
| 8 | EVALUASI TENGAH SEMESTER / MID TERM EXAM | | | | | | 25 |
| 9, 10 | <p>CPMK 5: Mampu menurunkan (mendiferensialkan) fungsi eksplisit, menerapkan aturan rantai, turunan fungsi implisit serta mampu menentukan nilai maks/min untuk fungsi polynomial.</p> <p><i>CLO 5: Students are able to derivating (differentiate) explicit functions, apply chain rule, implicit functions derivative, and able to determine</i></p> | <ul style="list-style-type: none"> • Ketepatan dalam mendapatkan Turunan Fungsi, penerapan aturan rantai, menentukan diferensiasi fungsi Implisit. • Ketepatan menentukan titik ekstrim, selang naik, selang turun & kecekungan. • Ketepatan mengaplikasikan turunan untuk menentukan ekstrim relatif, mensketsa grafik Polinomial & fungsi rasional serta masalah grafik lain dan mengaplikasikan masalah maksimum & minimum. <ul style="list-style-type: none"> • The accuracy of solving derivative functions, application of chain rule, defining implicit function differentiation. | <p>Tugas-6: Menyusun ringkasan kuliah, mengerjakan soal esay tentang diferensial.</p> <p><i>Assignment-6: sum up material, completing essay about differential.</i></p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 3x2x 50"] [BM : 3x2 x 60"] [PT : 3 x2x 60"]</p> <p><i>Tutorial activities, exercises and provide assignment . [FF : 3 x2x 50"] [SA : 3 x 2x60"] [SS : 3 x 2x 60"]</i></p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas melalui synchronous / asyncornous di MyITS Classroom.</p> <p><i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i></p> | <p>Limit fungsi, kontinuitas, turunan, aplikasi turunan.</p> <p>Pustaka : [1] Tim Dosen Matematika ITS [2] Anton, H [3] Kreyzig</p> <p><i>Limit functions, continuity, the derivative, applications of derivatives.</i></p> <p>Reference:</p> | 5 |

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| | <p><i>maximum/minimum value for a polynomial function.</i></p> | <ul style="list-style-type: none"> • <i>The accuracy of determining extreme point, increasing/ decreasing on the interval and concavity.</i> • <i>The accuracy of applying derivatives to determine relative extremes, sketching Polynomial & rational functions and other graph problems and applying maximum & minimum problems.</i> | | | | <p><i>[1] Lecturer team of ITS Mathematics</i> <i>[2] Anton, H</i> <i>[3] Kreyzig</i></p> | |
| | <p>ASISTENSI KE 4 / 4th Assistance Latihan soal-soal [TM : 2 x 50"] <i>Practice- Exercises [FF : 2 x 50"]</i></p> | | | | | | |
| 11 | <p>CPMK 6: Mampu menyelesaikan integral menggunakan teorema fundamental kalkulus dan rumus rumus dasar integrasi.</p> | <ul style="list-style-type: none"> • Ketepatan memahami anti turunan, integral tak tentu, dan rumus-rumus dasar integral tak tentu. • Ketajaman dalam merumuskan perhitungan integrasi dengan rumus fundamental Kalkulus. | <p>Tugas-7: Menyusun ringkasan kuliah, mengerjakan soal esay</p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 2x2x 50"] [BM : 2x2 x 60"] [PT : 2x2x 60"]</p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas melalui synchronous / asynchronous di MyITS Classroom.</p> | <p>Integral tak tentu, integrasi dengan substitusi, integrasi parsial, integrasi pecahan rasional, integrasi fungsi fungsi trigonometri, teknik integrasi yang lain. Pustaka : [1] Tim Dosen Matematika ITS</p> | 10 |

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| | <p>CLO 6: students are able to solve integral using fundamental calculus theorem and basic integration formula.</p> | <ul style="list-style-type: none"> • The accuracy of understanding anti-derivative, improper integral, improper integral and basic formulas of improper integral. • The sharpness of formulating integration calculation with fundamental calculus formula. | <p>Assignment-7: sum up material, completing essay.</p> | <p>Tutorial activities, exercises and provide assignment . [FF : 2 x2x 50"] [SA : 2 x 2x60"] [SS : 2 x 2x 60"]</p> | <p>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</p> | <p>[2] Anton, H [3] James Stewart</p> <p>Improper integral, integration with substitution, partial integration of rational functions, trigonometric functions integration, other integration tehcnique.</p> <p>Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] James Stewart</p> | |
| 12, 13 | <p>CPMK 7: Mampu menghitung luas bidang datar dan volume benda putar</p> | <ul style="list-style-type: none"> • Ketepatan dalam menghitung luas bidang datar. • Ketepatan dalam menghitung volume benda putar. | <p>Tugas-8: Mengerjakan soal esay Quiz 3: Soal esay tentang luasan dan volume benda putar.</p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 3x2x 50"] [BM : 3x2 x 60"] [PT : 3 x2x 60"]</p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/ asinkronus di MyITS Classroom</p> | <p>Aplikasi integral tertentu: Luas antara dua kurva dan menghitung volume benda putar.</p> | 5 |

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| | <p>CLO 7: Students are able to calculate the area between curve and the volume of area revolution.</p> | <ul style="list-style-type: none"> • The accuracy of calculating The area between curve. • The accuracy of calculating the volume of area revolution. | <p>Assignment-8: Completing essay</p> <p>Quiz 3: Essay test about The area between curve and the volume of area revolution.</p> | <p>Tutorial activities, exercises and provide assignment . [FF : 3 x2x 50"] [SA : 3 x 2x60"] [SS : 3 x 2x 60"]</p> | <p>Tutorial activities, exercises, and assignments via <i>Synchronous/ asynchronous at MyITS Classroom</i></p> | <p>Pustaka : [1] Tim Dosen -Matematika ITS [2] Anton, H</p> <p>Application of Integral: The area between curve and the volume of area revolution Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H</p> | |
| <p>ASISTENSI KE 5 / 5th Assistance Latihan soal-soal [TM : 2 x 50"] Practice- Exercises [FF : 2 x 50"]</p> | | | | | | | |
| 14 | <p>CPMK 7: Mampu menghitung panjang suatu kurva pada bidang dan luas permukaan benda putar</p> <p>CLO7 : Student are able to calculate the</p> | <ul style="list-style-type: none"> • Ketepatan dalam menghitung panjang suatu kurva • Ketepatan dalam menghitung luas permukaan benda putar | <p>Tugas-9: Mengerjakan soal essay.</p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 1x2x 50"] [BM : 1x2 x 60"] [PT : 1x2x 60"]</p> | <p>Kuliah, latihan soal-soal serta memberikan soal tugas melalui: <i>Sinkronus/ asinkronus di MyITS Classroom</i></p> | <p>Aplikasi integral tertentu: Panjang kurva dan luas permukaan benda putar Pustaka : [1] Tim Dosen -Matematika ITS [2] Anton, H</p> | |

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| | length of a curve in the plane and the surface area of a rotating object | <ul style="list-style-type: none"> • Accuracy in calculating the length of a curve • Accuracy in calculating the surface area of rotating objects | Assignment-9: completing essay. | Tutorial activities, exercises and provide assignment . [FF : 1 x2x 50"] [SA : 1 x 2x60"] [SS : 1 x 2x 60"] | Tutorial activities, exercises, and assignments via <i>Synchronous/asynchronous at MyITS Classroom</i> | Application of Integral: The length of a curve and the surface area of rotating objects | |
| ASISTENSI KE 6 / 6th Assistance Latihan soal-soal [TM : 2 x 50"] <i>Practice- Exercises [FF : 2 x 50"]</i> | | | | | | | |
| 15 | CPMK 8: Mampu memahami geometri. <i>CLO 8 : student are able to understand geometry.</i> | <ul style="list-style-type: none"> • Ketepatan dalam memahami Irisan kerucut. • Ketepatan dalam menentukan pencerminan, pergeseran, proyeksi dan sudut <ul style="list-style-type: none"> • The accuracy of understanding cone slice • The accuracy of mirroring, shifting, projection, and angles. | Tugas-10: Mengerjakan soal esay. Assignment-10: completing essay. | Kuliah, latihan soal-soal serta memberikan soal tugas [TM : 2x2x 50"] [BM : 2x2 x 60"] [PT : 2x2x 60"] Tutorial activities, exercises and provide assignment . [FF : 2 x2x 50"] [SA : 2 x 2x60"] [SS : 2 x 2x 60"] | Kuliah, latihan soal-soal serta memberikan soal tugas melalui: <i>Sinkronus/asinkronus di MyITS Classroom</i> Tutorial activities, exercises, and assignments via <i>Synchronous/asynchronous at MyITS Classroom</i> | Irisan kerucut, pencerminan, pergeseran dan proyeksi Pustaka : [1] Tim Dosen Matematika ITS [2] Purcell [3] James Stewart <i>Cone slice, mirroring, shifting, projection.</i> Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] James Stewart | 5 |
| 16 | EVALUASI AKHIR SEMESTER/ FINAL EXAM | | | | | | 25 |

Catatan sesuai dengan SN Dikti Permendikbud No 3/2020:

1. Capaian Pembelajaran Lulusan PRODI (CPL-PRODI) adalah kemampuan yang dimiliki oleh setiap lulusan PRODI yang merupakan internalisasi dari sikap, penguasaan pengetahuan dan ketrampilan sesuai dengan jenjang prodinya yang diperoleh melalui proses pembelajaran.
2. CPL yang dibebankan pada mata kuliah adalah beberapa capaian pembelajaran lulusan program studi (CPL-PRODI) yang digunakan untuk pembentukan/pengembangan sebuah mata kuliah yang terdiri dari aspek sikap, ketrampilan umum, ketrampilan khusus dan pengetahuan.
3. CP Mata kuliah (CPMK) adalah kemampuan yang dijabarkan secara spesifik dari CPL yang dibebankan pada mata kuliah, dan bersifat spesifik terhadap bahan kajian atau materi pembelajaran mata kuliah tersebut.
4. Sub-CP Mata kuliah (Sub-CPMK) adalah kemampuan yang dijabarkan secara spesifik dari CPMK yang dapat diukur atau diamati dan merupakan kemampuan akhir yang direncanakan pada tiap tahap pembelajaran, dan bersifat spesifik terhadap materi pembelajaran mata kuliah tersebut.
5. Indikator penilaian kemampuan dalam proses maupun hasil belajar mahasiswa adalah pernyataan spesifik dan terukur yang mengidentifikasi kemampuan atau kinerja hasil belajar mahasiswa yang disertai bukti-bukti.
6. Kreteria Penilaian adalah patokan yang digunakan sebagai ukuran atau tolok ukur ketercapaian pembelajaran dalam penilaian berdasarkan indikator-indikator yang telah ditetapkan. Kreteria penilaian merupakan pedoman bagi penilai agar penilaian konsisten dan tidak bias. Kreteria dapat berupa kuantitatif ataupun kualitatif.
7. Teknik penilaian: tes dan non-tes.
8. Bentuk pembelajaran: Kuliah, Responsi, Tutorial, Seminar atau yang setara, Praktikum, Praktik Studio, Praktik Bengkel, Praktik Lapangan, Penelitian, Pengabdian Kepada Masyarakat dan/atau bentuk pembelajaran lain yang setara.
9. Metode Pembelajaran: *Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning*, dan metode lainnya yg setara.
10. Materi Pembelajaran adalah rincian atau uraian dari bahan kajian yg dapat disajikan dalam bentuk beberapa pokok dan sub-pokok bahasan.
11. Bobot penilaian adalah prosentasi penilaian terhadap setiap pencapaian sub-CPMK yang besarnya proposional dengan tingkat kesulitan pencapaian sub-CPMK tsb., dan totalnya 100%.
12. **TM**=Tatap Muka, **PT**=Penugasan Terstruktur, **BM**=Belajar Mandiri.