

Rencana Pembelajaran Semester

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)					Kode Dokumen
FAKULTAS DEPARTEMEN						
RENCANA PEMBELAJARAN SEMESTER						
MATA KULIAH (MK)	KODE	Rumpun MK	BOBOT (sks)		SEMESTER	Tgl Penyusunan
Matematika 1 / Mathematicss 2	KM 18 4 151		3		.	
OTORISASI / PENGESAHAN	Dosen Pengembang RPS		Koordinator RMK		Ka Prodi	
			Tanda tangan		Tanda tangan	
Capaian Pembelajaran	CPL-PRODI yang dibebankan pada MK					
	CPL 1	Mampu menginterpretasikan konsep dasar matematika dan menyusun pembuktian secara langsung, tidak langsung, maupun dengan induksi matematika				
	ILO 1	Students are able to interpret basic Mathematicssal concepts and arrange the proofs directly, indirectly, or using Mathematicssal induction.				
	CPL 2	Mampu melakukan identifikasi permasalahan sederhana, membentuk model matematika dan menyelesaikannya.				
	ILO 2	Students are able to identify simple probles, create Mathematicssal models and solve them.				
	CPL 3	Menguasai metode-metode standar dalam bidang matematika.				
	ILO 3	Students are able to understand basic method in Mathematicss.				
	CPL 4	Mampu menguasai teori fundamental matematika yang meliputi konsep himpunan, fungsi, diferensial, integral, ruang dan struktur matematika.				
ILO 4	Students are able to understand the basic Mathematicssal theories such as set theory, functions, differential, integrak, space, abd Mathematicssal structure.					
CPL 5	Mampu memahami permasalahan matematis, menganalisa, dan menyelesaikannya.					
ILO 5	Students are able to understand Mathematicssal problems, analyze, and solve it.					
CPL 6	Mampu menganalisa suatu fenomena melalui model matematika dan menyelesaikannya.					
ILO 6	Students are able to analyze a phenomenon from Mathematicssal model and solve it.					

	CPL 7	Mampu menerapkan kerangka berpikir matematis untuk menyelesaikan masalah optimasi baik secara analitis maupun empiris.						
	ILO 7	<i>Students are able to apply a mathematical frame of mind to solve optimization problems both analytically and empirically.</i>						
	Capaian Pembelajaran Mata Kuliah (CPMK)							
	CPMK 1	Mampu memahami matriks dan determinan serta sifat-sifatnya dan mampu menyelesaikan sistem persamaan linier, menentukan nilai Eigen dan vektor Eigen <i>Students are able to understand matrix and determinant with its characteristic and able to solve linear equation system.</i>						
	CPMK 2	Mampu memahami pengertian sistem bilangan riil, bentuk desimal bilangan riil, persamaan, dan pertidaksamaan <i>Students are able to understand real number system, decimal form of real number, equality, and inequality.</i>						
	CPMK 3	Mampu memahami fungsi polinomial, fungsi transenden, dan mampu menggambar grafiknya dasar. <i>Students are able to understand polynomial functions, transcendent functions, and able to draw the basic graph.</i>						
	CPMK 4	Mampu mendefinisikan sinus, cosines, tangent, dan mengaplikasikan kesamaan trigonometri dalam menyederhanakan/menyelesaikan persamaan trigonometri. <i>Students are able to define sinus, cosinus, tangent, and apply trigonometric equation in simplifying /solving trigonometric equation.</i>						
	CPMK 5	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	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	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	Mampu memahami geometri. <i>Students are able to understand geometry.</i>						
Peta CPL – CP MK								
		CPL 1	CPL 2	CPL 3	CPL 4	CPL 5	CPL 6	CPL7
	CPMK 1		√	√		√		
	CPMK 2			√				
	CPMK 3			√	√	√		
	CPMK 4		√	√				√
	CPMK 5	√	√	√	√	√	√	√

Course Materials:	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> 4. <i>Trigonometry: Definition of Sine, cosine, tangent and graph of trigonometric functions, trigonometric equations, set of solving equations in trigonometric collisions.</i> 5. <i>Differential/derivative: Definition of derivative, the derivative with respect to x, chain rule, max/min application to polynomial functions.</i> 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> 7. <i>Integral Application: The area between curve, the volume of the volume of area revolution.</i> 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>	
Pustaka	Utama/Main:	
References		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:	
		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: Lecturers:		
Matakuliah syarat: Prerequisite:		

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] / Form of Learning; Learning Method; Student Assignment; [Estimated Time]		Materi Pembelajaran [Pustaka] / Learning Material [Reference]	Bobot Penilai an (%) / Asses-ment Load (%)
		Indikator / Indicator	Kriteria & Teknik / Criteria & Techniques				
(1)	(2)	(3)	(4)	Tatap Muka (5)	Daring (6)	(7)	(8)
1, 2	Sub – CPMK 1 : Mampu memahami matriks dan determinan serta sifat-sifatnya dan mampu menyelesaikan sistem persamaan linier, menentukan nilai eigen dan vektor eigen.	• Ketepatan memahami sifat-sifat matrik , determinan dan menghitung nilai determinan. • Ketepatan dan kemampuan menyelesaikan SPL. • Ketepatan menentukan nilai eigen dan vektor eigen.	Kriteria: Menggunakan rubrik, Pedoman penskoran. Teknik non-test: Membuat rubrik Teknik test: QUIZ 1, Soal Esay	Kuliah Diskusi, [TM: 2mgx(3sksx50’’)]] 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 [PT+BM:(2+2)x(3x60 ’’)]	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/ asinkronus di MyITS Classroom	Matriks dan Determinan, Penyelesaian sistem persamaan linier, nilai eigen dan vektor eigen Pustaka : [1] Tim Dosen Matematika ITS	5

	<i>Sub – ILO 1: Students are able to understand matrix and determinant and its properties, solving linear equation system, and determine eigen value and eigen vector.</i>	• The accuracy to understand matrix properties, determinant, and solve determinant value. • The accuracy to solve SoLE • The accuracy of determining eigen value and eigen vector.	Criteria: Using a rubric, scoring guideline. Non-test technique: Making a rubric Test technique Quiz 1, Essay	Tutorial Activities Discussion [TM: 2mgx(3sksx50")] Assignment-1 Construct a rubric that relate to matrix and determinant problems. Assingment-2 Solving assignments in essay about matrix and determinant. Quiz 1 Solving the essay test: determinant, SoLE, and inverse matrix . [PT+BM:(2+2)x(3x60")]	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	Matrix and determinant, solving linear equation system, Eigen value and Eigen vector. Reference: [1] Lecturer team of ITS Mathematics	
3, 4	Sub – CPMK 2: Mampu memaham pengertian sistem bilangan riil, bentuk desimal bilangan riil, koordinat riil, persamaan, dan pertidaksamaan.	• Ketepatan memahami sifat-sifat Bilangan Real, selang, sifat logaritma dan nilai mutlak. • Ketepatan pemahaman koordinat bidang, garis, jarak dua titik, lingkaran dan parabola.	Kreteri: Menggunakan rubrik Teknik non-test: Meringkas materi kuliah.	Kuliah Diskusi [TM: 2mgx(3sksx50")] Tugas-3: Meringkas materi kuliah. Tugas-4: Menyelesaikan tugas dalam soal esay persamaan dan pertidaksamaan.	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom	Sistem Bilangan Real, logaritma, nilai mutlak, pertidaksamaan, koordinat bidang, garis, jarak dua titik, lingkaran, parabola. Pustaka :	5

	Sub – ILO 2: Students are able to understand real numbering system, decimal real number, real coordinate, equality and inequality.	• The accuracy of understanding real number, intervals, logarithmic properties, and absolute value. • The accuracy of understanding the coordinate planes, line, distance of two points, circle, and parabola.	Criteria: Using a rubric Non-test technique: Sum up material.	[PT+BM:(2+2)x(3x60")] Tutorial activities Discussion [TM: 2mgx(3sksx50")] Assignment-3 Sum up material. Assignment-4 Complete the assignment of equations and inequalities essay problems.	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	[1] Tim Dosen - Matematika ITS [2] Anton, H Real Number System, logarithms, absolute value, Inequalities, the coordinates planes, line, two points distance, circle, parabola Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H	
5, 6	Sub – CPMK 3: Mampu memahami fungsi polinomial, fungsi transenden, dan mampu menggambar grafiknya dasar.	• Ketepatan pemahaman sifat fungsi dan operasi fungsi. • Ketepatan pemahaman menentukan invers fungsi dan sifat sifatnya (termasuk fungsi polinomial, rasional, transenden dan trigonometri).	Kriteria: Menggunakan rubrik, Pedoman penskoran Teknik non-test: Membuat rubrik Teknik test: QUIZ 2, Soal Esay	Kuliah Diskusi, [TM: 2mgx(3sksx50")] Tugas-5: Meringkas materi kuliah Quiz 2: Mengerjakan soal esay nilai mutlak, invers fungsi, grafik fungsi.	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom	Fungsi dan operasi fungsi, fungsi polinomial, invers fungsi, fungsi transenden dan trgonometri, grafik fungsi Pustaka :	10

	Sub – ILO 3: Students are able to understand polynomial functions, transcendent functions, and able to make basic graph.	• The accuracy of understanding property and operation of the functions. • The accuracy of understanding inverse functions and its properties (including polynomial functions, rational, transcendent, and trigonometry)	Criteria: Using a rubric, scoring guidelines Non-test technique Making a rubric Test technique Quiz 2, Essay.	[PT+BM:(2+2)x(3x 60")] Tutorial activities Discussion [TM: 2mgx(3sksx50")] Assignment-5 Sum up material. Quiz-2 Essay on absolute value, inverse functions, and graph functions.	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	[1] Tim Dosen Matematika ITS [2] Anton, H [3] Purcell Property and operation functions, polynomial functions, inverse functions, transcendent and trigonometry functions, graph functions. Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] Purcell	
7	Sub – CPMK 4: Mampu mendefinisikan sinus, cosines, tangent, dan mengaplikasikan kesamaan trigonometri dalam menyederhanakan/	Ketepatan dalam mendefinisikan sinus, cosines, tangent, dan mengaplikasikan kesamaan trigonometri dalam menyederhanakan/	Kriteria: Menggunakan rubrik Teknik non-test: • Membuat rubrik • Merangkum materi kuliah	Kuliah Diskusi, [TM: 1mgx(3sksx50")] Tugas-6:	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom	Sinus, cosines, tangent, cotangent, secan, cosecan, persamaan trigonometri Pustaka :	5

	menyelesaikan persamaan trigonometri. Sub – ILO 4: <i>Students are able to define sinus, cosinus, tangent, and apply it to trigonometric equation in simplifying/solving trigonometry equation.</i>	menyelesaikan persamaan trigonometri. <i>The accuracy of defining sinus, cosinus, tangent, and apply it to trigonometric equation in simplifying/ solving trigonometry equation.</i>	Criteria: <i>Using a rubric</i> Non-test technique: • Making a rubric • sum up material.	Meringkas materi kuliah, membuat rubrik. [PT+BM:(1+1)x(3x 60")] Tutorial activities Discussion [TM: 1mgx(3sksx50")] Assignment-6 Sum up material, making a rubric.	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	[1] Tim Dosen - Matematika ITS [2] Anton, H <i>Sinus, cosinus, tangent, cotangent, secan, cosecan, trigonometry equation.</i> Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H	
8	EVALUASI TENGAH SEMESTER / MID TERM EXAM						25
9, 10	Sub – CPMK 5: Mampu menurunkan (mendiferensialkan) fungsi eksplisit, menerapkan aturan rantai, turunan fungsi implisit serta mampu menentukan nilai maks/min untuk fungsi polynomial.	• Ketajaman penguasaan konsep Limit fungsi. • Ketepatan mengetahui Kontinuitas suatu fungsi. • Ketepatan dalam merumuskan perhitungan garis singgung dan laju perubahan, definisi turunan. • Ketepatan dalam mendapatkan Turunan Fungsi, penerapan aturan rantai, menentukan diferensiasi fungsi Implisit. • Ketepatan menentukan titik ekstrim, selang naik,	Kriteria: Menggunakan rubrik Teknik non-test: • Membuat rubrik • Merangkum materi kuliah • Mengerjakan tugas soal essay	Kuliah Diskusi [TM: 2x(3x50")] Tugas-7: Menyusun ringkasan kuliah, mengerjakan soal essay tentang diferensial. [PT+BM:(2+2)x(3x60")]	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom	Limit fungsi, kontinuitas, turunan, aplikasi turunan. Pustaka : [1] Tim Dosen Matematika ITS [2] Anton, H [3] Kreyzig	5

		selang turun & kecekungan. • Ketepatan mengaplikasikan turunan untuk menentukan ekstrim relatif , mensketsa grafik Polinomial & fungsi rasional serta masalah grafik lain dan mengaplikasikan masalah maksimum & minimum.					
	Sub – ILO 5: Students are able to derivating (differentiate) explicit functions, apply chain rule, implicit functions derivative, and able to determine maximum/minimum value for a polynomial function.	• The sharpness of understanding limit functions concept. • The accuracy of understanding the continuity of a function. • The accuracy of formulating the calculation of tangent, rate of change, and definition of derivative. • The accuracy of solving derivative functions, application of chain rule, defining implicit function differentiation. • The accuracy of determining extreme point, increasing/	Criteria: Using a rubric Non-test technique: • Making a rubric • sum up material, • completing essay assignment.	Tutorial activities Discussion; [TM: 2x(3x50")] Assignment-7: sum up material, completing essay about differential. [PT+BM:(2+2)x(3x60")]	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	Limit functions, continuity, the derivative, applications of derivatives. Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] Kreyzig	

		<i>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>					
11, 12	Sub – CPMK 6: Mampu menyelesaikan integral menggunakan teorema fundamental kalkulus dan rumus rumus dasar integrasi.	- Ketepatan memahami anti turunan, integral tak tentu, dan rumus-rumus dasar integral tak tentu. - Ketajaman dalam merumuskan perhitungan integrasi dengan rumus fundamental Kalkulus.	Kriteria: Menggunakan rubrik Teknik non-test: - Membuat rubrik - Merangkum materi kuliah - Mengerjakan tugas soal essay	Kuliah Diskusi; [TM: 2x(3x50'')] Tugas-8: Menyusun ringkasan kuliah, mengerjakan soal essay [PT+BM:(2+2)x(3x60'')]	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom	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 [2] Anton, H [3] James Stewart	10

	Sub – ILO 6: students are able to solve integral using fundamental calculus theorem and basic integration formula.	• 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.	Criteria: Using a rubric Non-test technique: Making a rubric and sum up material, completing the essay assignment.	Tutorial activities Discussion; [TM: 2x(3x50")] Assignment-8: sum up material, completing essay. [PT+BM:(2+2)x(3x60")]	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	Improper integral, integration with substitution, partial integration of rational functions, trigonometric functions integration, other integration technique. Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] James Stewart	
13, 14	Sub – CPMK 7: Mampu menghitung luas bidang datar dan volume benda putar	• Ketepatan dalam menghitung luas bidang datar. • Ketepatan dalam menghitung volume benda putar.	Kriteria: Menggunakan rubrik, Pedoman penskoran Teknik non-test: • Membuat rubrik • Mengerjakan tugas soal essay Teknik test QUIZ 3, Soal Essay	Kuliah Diskusi; [TM: 2x(3x50")] Tugas-8: Mengerjakan soal essay Quiz 3: Soal essay tentang luasan dan volume benda putar.	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom	Aplikasi integral tertentu: Luas antara dua kurva dan menghitung volume benda putar. Pustaka :	5

	Sub – ILO 7: Students are able to calculate the area between curve and the volume of area revolution.	• The accuracy of calculating The area between curve. • The accuracy of calculating the volume of area revolution.	Criteria: Using a rubric, scoring guideline Non-test technique: making a rubric, completing essay assignment Test Technique: Quiz 3, essay.	[PT+BM:(2+2)x(3x60")] Tutorial activities Discussion; [TM: 2x(3x50")] Assignment-8: Completing essay Quiz 3: Essay test about The area between curve and the volume of area revolution. [PT+BM:(2+2)x(3x60")]	Tutorial activities, exercises, and assignments via Synchronous/asynchronous at MyITS Classroom	[1] Tim Dosen - Matematika ITS [2] Anton, H Application of Integral: The area between curve and the volume of area revolution Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H	
15	Sub – CPMK 8: Mampu memahami geometri. Sub – ILO 8 : student are able to understand geometry.	• Ketepatan dalam memahami Irisan kerucut. • Ketepatan dalam menentukan pencerminan, pergeseran, proyeksi dan sudut • The accuracy of understanding cone slice	Kriteria: Menggunakan rubrik Teknik non-test: • Membuat rubrik • Mengerjakan tugas soal essay Criteria Using a rubric	Kuliah Diskusi; [TM: 1x(3x50")] Tugas-9: Mengerjakan soal essay. [PT+BM:(1+1)x(3x60")] Tutorial activities Discussion; [TM: 1x(3x50")]	Kuliah, latihan soal-soal serta memberikan soal tugas melalui: Sinkronus/asinkronus di MyITS Classroom Tutorial activities, exercises, and assignments via	Irisan kerucut, pencerminan, pergeseran dan proyeksi Pustaka : [1] Tim Dosen Matematika ITS [2] Purcell [3] James Stewart Cone slice, mirroring, shifting, projection.	5

		• <i>The accuracy of mirroring, shifting, projection, and angles.</i>	Non-test technique • <i>Making a rubric</i> • <i>Completing an essay assignment.</i>	Assignment-9: <i>completing essay.</i> [PT+BM:(1+1)x(3x60")]	<i>Synchronous/asynchronous at MyITS Classroom</i>	Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H [3] James Stewart	
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.