



SILABI

SIL/SMA 337/01
1 September 2014

Fakultas	: MIPA
Program Studi	: Matematika
Mata Kuliah & Kode	: Analisis Nyata Lanjut,
Jumlah sks	: Teori = 2 sks, Praktek = - sks
Semester	: VI
Mata Kuliah Prasyarat & Kode	: Analisis Nyata
Dosen	: Fitriana Yuli Saptaningtyas, M.Si.

I. DESKRIPSI MATA KULIAH

Mata kuliah ini terdiri dari limit, fungsi yang kontinyu, turunan, Integral Rieman, dan barisan fungsi. Mahasiswa diharapkan mampu memahami konsep-konsep yang terkait dengan limit, fungsi yang kontinyu, turunan, integral Riemann, dan barisan fungsi serta mampu menerapkannya untuk menyelesaikan permasalahan yang terkait dan membuktikan teorema terkait.

II. STANDAR KOMPETENSI MATA KULIAH

Mahasiswa mampu:

- Menjelaskan tentang limit, fungsi yang kontinyu, turunan, Integral Rieman, dan barisan fungsi.
- Menggunakan konsep-konsep tersebut untuk memecahkan masalah-masalah terkait limit, fungsi yang kontinyu, turunan, Integral Rieman, dan barisan fungsi.
- Mampu membuktikan teorema terkait limit, fungsi yang kontinyu, turunan, Integral Rieman, dan barisan fungsi.

III. RENCANA KEGIATAN

Pertemuan ke	BAB	Materi
1		PENDAHULUAN/ Silabus
2-10	1	Limit -Limit Fungsi -Teorema Limit
11-20	2	Fungsi Kontinyu -Fungsi Kontinyu -Kombinasi Fungsi Kontinyu -Fungsi Kontinyu dalam Interval -Kontinyu Seragam -Kemonotonan dan invers fungsi
21		Ujian Sisipan 1
22-26		Integral Rieman -Integral Riemann -Fungsi Terintegral Rieman -Teorema Dasar Integral -Aproksimasi Integral

27-31		Barisan Fungsi -Konvergensi titik demi titik dan konvergensi seragam -Pergantian Limit -Fungsi Eksponensial -Fungsi Logaritma
32		Ujian sisipan 2

IV. REFERENSI/SUMBER BAHAN

A. Wajib :

[A] Bartle, R.G.2000. *Introduction To Real Analysis*, 3th ed. New York: John Wiley & Sons, Inc.

B. Anjuran :

[B] Branan.D,2006.*A First Course In Mathematical Analysis*, New York:Cambridge University Press

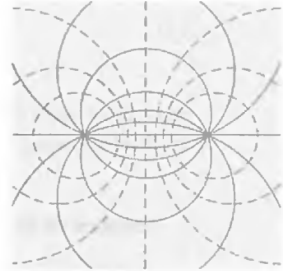
V. EVALUASI

No.	Komponen	Bobot (%)
1.	Kuis	15%
2.	Tugas	25%
3.	Ujian Sisipan	30%
4.	Ujian Akhir Semester	30%
Jumlah		100%

Yogyakarta, 9 September 2014

Fitriana Yuli S.,M.Si.

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		Kuliah	Tugas
1	20 Sept 2010	Bab 1.1 ; 2	<p>Bab 1.1 No 7, 11 Bab 1.2 No. 14, 17</p> <p>7. $y'' + 2y' + 10y = 0, \quad y = 4e^{-x} \sin 3x$</p> <p>11. $y' = 1 + 4y^2, \quad y = \frac{1}{2} \tan (2x + c), \quad y(0) = 0$</p> <p>14. $y' = 3y/x$ (Sol. $y = cx^3$)</p> <p>17. Product of velocity and distance equal to $-t, y(3) = -3$</p>
2	27 Sept 2010	Hal 15 #5; hal 30 Bernauli; hal 35 #1.6	<p>1.3 #30; 1.5#29; dan 1.6 #18</p> <p>30. (Torricelli's law) How does the answer in Example 5 (the time when the tank is empty) change if the diameter of the hole is doubled? First guess.</p> <p>29. (Drug injection) Find and solve the model for drug injection into the bloodstream if, beginning at $t = 0$, a constant amount A g/min is injected and the drug is simultaneously removed at a rate proportional to the amount of the drug present at time t.</p> <p>18. (Electric field) The lines of electric force of two opposite charges of the same strength at $(-1, 0)$ and $(1, 0)$ are the circles through $(-1, 0)$ and $(1, 0)$. Show that these circles are given by $x^2 + (y - c)^2 = 1 + c^2$. Show that the equipotential lines (orthogonal trajectories of those circles) are the circles given by $(x + c^*)^2 + \tilde{y}^2 = c^{*2} - 1$ (dashed in Fig. 25).</p>  <p>Fig. 25. Electric field in Problem 18</p>
3		2.4 Modeling: Free Oscillations. (Mass-Spring System) 61	
4		2.8 Modeling: Forced Oscillations. Resonance 84	

5	2.9 2.9 Modeling: Electric Circuits 91	
6	4.1 4.1 Systems of ODEs as Models 130	
	Solusi deret	
	5.3 5.3 Legendre's Equation. Legendre Polynomials $P_n(x)$ 11	Hal 180 #1, 2. 5
	Transformasi Laplace CHAPTER 6 Laplace Transforms 220	

