MTH 634   Syllabus   Spring 2006

Instructor: James Angelos   **Office:** Pearce 214   **Phone**: 774-3596
Office Hours: 9:00-10:00 MTWR, 2:00-3:00 WF, or by appointment
E-mail: james.angelos@cmich.edu
Web: http://www.cst.cmich.edu/users/angel1jr or
http://calcnet.cst.cmich.edu/faculty/angelos
Textbook: *Fourier and Wavelet Analysis*, George Bachman, Lawrence Narici, Edward Beckenstein, Springer Verlag, 2000.

Welcome to MTH 634, Fourier Analysis. This course is to provide a theoretical framework for one of the most fundamental and paradigm changing ares of analysis, Fourier analysis. We will consider the analytic and applied areas that this rich area of mathematics offers. We will study Fourier series, its convergence and uses as well as the Fourier transform. Also considered will be an introduction to the very recent area of wavelet analysis.

Prerequisites

The prerequisites for this class are Advanced Calculus I (MTH 532).

Grading Policy

There will be 2 exams, a midterm and a final exam each worth 100 points. In addition, homework will be collected each week. Each of these assignments will be worth 15 points.

Grading Scale

Point Total			Grading Scale (% of total)					
13	Homework	195	100–92	A	82–80	B-	69 ↓	E
2	Exams	<u>200</u>	92–90	A-	79–76	C+		
	Total	395	89–86	B+	75–73	C		
			85–83	B	72–70	C-		

Exam Dates

Midterm:	Wednesday, March 1	Chapters 4, 5
Final Exam:	Monday, May 1	Chapters 6, 7
	5:00–6:50	

Material to be covered and assignments

Chapter 1-3

Will be drawn on as necessary.

Chapter 4

§4.1	pp. 151–154	(1,2,3,5ad,6b,7a,10,11,13,15)
§4.2	pp. 157–158	(1,2bd,4,5ac,6,7)
§4.3	pp. 165–169	(1,3,5,6,8,9bcf)
§4.4	pp. 173–174	(3)
§4.5	pp. 187–188	(1,2,4,6)
§4.6	pp. 195–201	(1,2,7,8,0,12ab)
§4.10	pp. 216–218	(2,3,4,5)
§4.12	pp. 222–223	(1,2,3,4)
§4.14	p. 234	(1,2,3)
§4.15	pp. 241–242	(1,3,4)
§4.19	pp.255-256	(1,3bc,5a,7)

Chapter 5

§5.2	pp. 270–273	(1,2,3,6,8,10,11bc)
§5.5	pp. 283–284	(1,2,4,5,6,7,8ab)
§5.6	pp. 288–289	(1ac,2,3,4)
§5.8	p. 293	(1)
§5.10	pp. 302–303	(1,2,3,5)
§5.11	p. 305	(1)
§5.12	pp. 315–317	(1,3)
§5.13	pp. 325–329	(1,2,7,8,9,16)
§5.14	pp. 333–334	(2,3)
§5.15	p. 340	(1,2,4,5,6)
§5.16	pp. 349–351	(1,2,4acd,6,7)
§5.19	pp. 363–366	(2,3)
§5.23	pp. 379–381	(1,3)

Chapter 6

§6.1	pp. 388–390	(1,2,3,4,6,7)
§6.2	pp. 394–396	(2,4,5,7)
§6.3	pp. 398–399	(2,3)
§6.4	pp. 405–406	(1,2)

Chapter 7

§7.1	p. 414	(1)
§7.2	p. 418	(1)
§7.3	p. 421	(1,2)
§7.4	pp. 432–435	(2,3,4,5,8)
§7.5	pp. 445–448	(1,2,3)
§7.8	pp. 462–464	(1,3)
§7.9	pp. 474–475	(2,4)
§7.10	p. 479	(1,2,3,6,7)