Year
Semester

Syllabus

Course No. : 011472-01

Course	Mathematical Analysis (2)	Credit	3	Time	3	Instructor	Won-Kwang Park
Department/ Grades	Mathematics / 2nd year			Lecture Schedule Lecture Room			
Office Hours	Anytime except the lecture			Office Telephone			
E-mail							

Objectives	Based on the real number system, limit of sequences, various properties of functions, and differentiablility of functions studied in Analysis (1), we will rigorously investigate the concept of integration of functions and study the infinite series, sequences of function and its limits so that one can easily understand various fields treat the natural phenomenon. Time permitting, we consider the basic concept of Fourier series, integral, and trasnform.
Method/ Materials	Lecture Note
Grading	Midterm and final exams.
Textbook	Lecture note
Auxiliary textbook	
Reference book	R. G. Bartle and D. R. Sherbert, Introduction to Real Analysis, Third Edition, John Wiley & Sons, 2000.

Assignment	Remarks

Weekly Schedule

Week	Date	Description	Assignment/ Reference
1	8.31 ~ 9.4	Review on Mathematical Analysis (1)	
2	9.7 ~ 9.11	Introduction to Riemann integral	
3	9.14 ~ 9.18	Some properties of Riemann integral	
4	9.21 ~ 9.25	Fundamental theorem of Calculus	
5	9.28 ~ 10.2	Improper integrals	
6	10.5 ~ 10.9	Introduction to infinite series	
7	10.12 ~ 10.16	Convergence test: part 1	
8	10.19 ~ 10.23	Midterm exam	
9	10.26 ~ 10.30	Absolute convergence	
10	11.2 ~ 11.6	Convergence test: part 2	
11	11.9 ~ 11.13	Pointwise and uniform convergence	
12	11.16 ~ 11.20	Interchange of limits	
13	11.23 ~ 11.27	Introduction to series of functions	
14	11.30 ~ 12.4	Power series and Fourier series	
15	12.7 ~ 12.11	Fourier integral and Fourier transform	
16	12.14 ~ 12.18	Final exam	

Year
Semester

Syllabus

Course No. : 011464-02

Course	Mathematical Analysis (1) and Exercise	Credit	3	Time	4	Instructor	Won-Kwang Park
Department/ Grades	Mathematics / 2nd year			Lecture Schedule Lecture Room			
Office Hours	Anytime except the lecture			Office Telephone			
E-mail							

Objectives	Based on the knowledge of differentiation and integration studied in Calculus, we will rigorously investigate the concept of real number system and sequences, limit of function and continuity of function so that one can establish the basic concept of mathematical analysis.
Method/ Materials	Lecture Note
Grading	Midterm and final exams, and reports.
Textbook	Lecture note by Won-Kwang Park
Auxiliary textbook	
Reference book	

Assignment	Remarks

Weekly Schedule

Week	Date	Description	Assignment/ Reference
1	3.3 ~ 3.7	Review on Calculus and introduction to analysis	
2	3.10 ~ 3.14	Chapter 1.1, 1.2, and 1.3	
3	3.17 ~ 3.21	Chapter 1.4, and Chapter 2.1	
4	3.24 ~ 3.28	Exercises	
5	3.31 ~ 4.4	Chapter 2.2, and 2.3	
6	4.7 ~ 4.11	Chapter 2.4, and 2.5	
7	4.14 ~ 4.18	Exercises	
8	4.21 ~ 4.25	Midterm exam	
9	4.28 ~ 5.2	Chapter 3.1	
10	5.5 ~ 5.9	Chapter 3.2	
11	5.12 ~ 5.16	Exercises	
12	5.19 ~ 5.23	Chapter 4.1, and 4.2	
13	5.26 ~ 5.30	Chapter 4.3	
14	6.2 ~ 6.6	Chapter 5	
15	6.9 ~ 6.13	Exercises	
16	6.16 ~ 6.20	Final exam	