

## 2023Year 2nd Semester Syllabus

Created Date	2023-07-29 12:59:52		Last-Modified	2023-07-29 13:08:18	
Course Title	NUMBER THEORY		Course Code-Section	MAT3121-01	
Credit/Time/ Experiment, Lab, Practical Technique Time	3/Mon3,4,Wed3		Department	Mathematics	
Time	Mon3,4,Wed3		Location	SciHB133	
Exam Date & Time	Midterm exam		Final exam		
Class Language	English		Evaluation Type	Absolute evaluation	

Instructor's Profile	Name	Yu Myungjun		Contact Information	Telephone		
	Department	MATHEMATICS			Mail	MJYU@YONSEI.AC.KR	
	Office				Interview information		

TA's Name & Contact Information	Name		Contact Information	Telephone	
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Course Description Brief Introduction of the Course	소수와 합성수, 합동, quadratic reciprocity law, 수론함수, Diophantine방정식, 원시근, 연분수				
Course Goals	1.	Korean	소수와 합성수에 대한 이해		35%
		English	Understanding prime number and composite number		
	2.	Korean	합동식과 관련된 주요 정리에 대한 이해		35%
		English	Understanding congruence and theorems about it		
	3.	Korean	디오판틴 방정식의 해		30%
		English	Solving Diophantine equations		
	4.	Korean			0%
		English			
	5.	Korean			0%
		English			

Core Competencies	The total measurable competencies must be 100%. Each course objective should set the competency as 25%. The core and major competencies should equal at least 50%.						
	Computation and Modeling Skills	40%	Analytical Skills	30%	Independent Understandings and Creative Problem-Solving Skills	30%	
Sub-Competencies/Learning Unit1							
Sub-Competencies/Learning Unit2							
Sub-Competencies/Learning Unit3							
Core Competencies(Liberal Arts)Major competency(	<b>Must reflect the interrelationship between core competencies (elective courses) and major competencies (major studies).</b>						
Sustainable Development Goals							
Average Recommended Amount of Learning per	Average Reading Volume				Average amount of writing(Based on A4)		
Course Methods (%) Total Amount 100	Lecture	Practice Training	Presentation	Dabate	Team Project		
	100%	0%	0%	0%	0%		
Course Methods 2 Select Relevant Items	PBL Subject	Capstone Design	CBL, Social Innovation Course	Flipped Classroom	Work Experience,Internsh		
Grading Policy(%) Total Amount 100 Free Input for Other Information	Midterm exam	Final exam	Quiz	Individual Assignment	Team Assignment	Attendance	Others
	40%	40%	0%	10%	0%	10%	0%
Assignment/ Report, Project Guide	Title of Assignment/Project Name, and Method of Filling Out		Submission Deadline		Type of Submission and Method		
Prerequisite			Online Course Address				
Course Material	Course Material Name	Author	Publisher	Publish Year	ISBN		
주교재	Elementary number theory (7th edition)	David M. Burton	McGraw Hill				
Main Learner Precautions							
Attachment							

## Weekly Plan

week	Period	Weekly Topic & Contents	Remarks
1	2023-09-01 2023-09-07	Introduction, Chapter 1. Preliminaries	(9.1.) Fall semester classes begin (9.5. - 9.7.) Course add and drop period
2	2023-09-08 2023-09-14	Chapter 2. Divisibility theory in the integers	
3	2023-09-15 2023-09-21	Chapter 2. Divisibility theory in the integers Chapter 3. Primes and their distribution	
4	2023-09-22 2023-09-28	Chapter 3. Primes and their distribution Chapter 4. The theory of congruences	09.28 추석
5	2023-09-29 2023-10-05	Chapter 4. The theory of congruences Chapter 5. Fermat's Theorem	(9.28. - 9.30.) 추석연휴 (10.3.) National Foundation Day 09.29 추석, 09.30 추석, 10.03 개천절
6	2023-10-06 2023-10-12	Chapter 5. Fermat's Theorem Chapter 6. Number-theoretic functions	(10.8.) First third of the semester ends (10.9.) Hangeul Proclamation Day 10.09 한글날
7	2023-10-13 2023-10-19	Chapter 6. Number-theoretic functions Chapter 7. Euler's generalization of Fermat's theorem	
8	2023-10-20 2023-10-26	Midterm	(10.20. - 10.26.) Midterm Examinations
9	2023-10-27 2023-11-02	Chapter 8. Primitive roots and indices	(10.27. - 10.31.) Course withdrawal period (11.1. - 11.3.) Application Period for S/U evaluation
10	2023-11-03 2023-11-09	Chapter 8. Primitive roots and indices	
11	2023-11-10 2023-11-16	Chapter 9. The quadratic reciprocity law	(11.14.) Second third of the semester ends
12	2023-11-17 2023-11-23	Chapter 9. The quadratic reciprocity law Chapter 11. Numbers of special form	
13	2023-11-24 2023-11-30	Chapter 11. Numbers of special form Chapter 12. Certain nonlinear diophantine equations	
14	2023-12-01 2023-12-07	Chapter 12. Certain nonlinear diophantine equations Chapter 13. Representation of integers as sums of squares	
15	2023-12-08 2023-12-14	Further topics if time permits	(12.8. - 12.14.) Self-study
16	2023-12-15 2023-12-21	Final exams	(12.15. - 12.21.) Final Examinations

• Students with disabilities(SWDs) can request accommodations related to lectures, assignments, or tests by contacting the course professor at the beginning of semester.  
(However, accommodations may vary depending on the essentiality of lecture and discretion of professors.)

[Lecture]

- Visual Impairment: alternative, braille, enlarged reading materials, note-taker

- Physical Impairment: alternative reading materials, access to classroom, note-taker, assigned seat
  - Hearing Impairment: note-taker/stenographer, recording lecture
  - Intellectual Disability/Autism: note-taker
- [Assignments and Test]
- Visual/Physical/Hearing Impairment: (reasonable) extra days for submission, alternative type of assignment, extended test time, alternative type of test, arranging separate test room, and proctors, test ghostwriter
  - Intellectual Disability/Autism: (reasonable) extra days for submission, alternative type of assignment