

## Computer Programming

Course Name	Course type (credit/hours)	Required course(3/3)	Course code	E085
	Target students Division/major/grade	Architecture/Sophomore	Opening semester	2020 2ND SEMESTER
	Class time and classroom	Mon F(EC509)Thu F(EC509)	English Grade	A(100%English)
Reference to this course	Prerequisite courses	None		
	Related basic courses	None		
	Recommended concurrent courses	None		
	Related advanced courses	Building IT		

Instructor	Name (title/division)		Kim, Jinyoung(Assistant Professor, Architecture)			
	Office Room Number	산학협력원 712	Office phone Number	1536	e-mail	
	Office hours	AIMS2 학생상담 가능 시간 참조		Homepage address	https://bitlab.ajou.ac.kr	
Teaching Assistant	Name (title/division)					
	Office Room Number	산학협력원 810호	Office phone Number	3580	e-mail	fbgudals@ajou.ac.kr

### 1. Introduction

The purpose of this course is to assist students in learning the basics of MATLAB. Very basics of programming in MATLAB will be covered during the class, with the goal of having students become comfortable enough to self-practice and continue learning MATLAB on their own.

### 2. Course Objectives

The objective of the course is to assist students in learning the basics of MATLAB, thereby students become comfortable to continue learning and developing advanced algorithms and programs.

At the end of the course, students should be able to use MATLAB in their own work, and be prepared to deepen their MATLAB programming skills for practical application for later engineering works and related projects.

MATLAB 프로그램의 구조적 특성을 이해하고, 기본적인 명령어 사용법을 습득하고, 실습과정을 통하여 현실적인 문제 해결 능력을 갖추도록 유도한다. 그리고 프로그래밍에 대한 개념을 정립하도록 하여 향후 보다 고차원적인 프로그램 학습을 위한 기초 지식을 얻도록 한다.

#### 교육목표

1. 행렬 data를 이용한 기본적인 연산
2. M-file을 이용한 프로그래밍
3. 도구상자를 이용한 프로그래밍
4. 기로로 이루어진 수식을 계산하는 기호계산
5. MATLAB에서 제공하는 함수 및 기능을 이용한 공학적 문제 해결
6. SIMULINK

### 3. Class types and activities

- This course runs in parallel with lectures and hands-on exercises, with an emphasis on self-practice and learning to improve the ability to use the program.
- Through a series of lessons, students learn practical skills useful for later engineering works and related projects.

### 4. Teaching Method

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> lecture                                     | <input checked="" type="checkbox"/> discussion and debate         |
| <input checked="" type="checkbox"/> team project(presentation and case studies) | <input checked="" type="checkbox"/> experiments(role-playing,etc) |
| <input checked="" type="checkbox"/> designing and production                    | <input type="checkbox"/> on-site learning(on-site training)       |
| <input type="checkbox"/> others   |   |

### 5. Support Systems in Use

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> AjouBb               | <input type="checkbox"/> automatic recording system | <input type="checkbox"/> web-based assignment |
| <input type="checkbox"/> cyber lecture                   | <input type="checkbox"/> online content             |   |
| <input type="checkbox"/> class behavior analyzing system | <input type="checkbox"/> others                     |   |

### 6. Teaching Tools

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> PBL(Problem Based Learning) | <input checked="" type="checkbox"/> CBL(Case Based Learning) | <input checked="" type="checkbox"/> TBL(Team Based Learning)           |
| <input type="checkbox"/> UR(Undergraduate Research)             | <input checked="" type="checkbox"/> FL(Flipped Learning)     | <input checked="" type="checkbox"/> DSAL(Data Science Active Learning) |
| <input type="checkbox"/> others                                 |  |  |

### 7. Knowledge and ability required for taking this course

There are no formal prerequisites for this course.

기본적인 컴퓨터 활용능력(문서편집 및 소프트웨어 활용능력)

## 8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		10	매 결석마다 출석점수의 1/8씩 감점 (출석점수 환산 시 지각 2회는 1회 결석으로 간주)
midterm exam			
final exam			
quiz			
presentation	2	50	중간발표 20%, 최종발표 30%
discussion			
homework	2	35	Homework 10%, 프로그램 25%
etc		5	
study hours			

## 9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	MATLAB for Engineering Applications 4th Edition	William J Palm III	McGraw-Hill	2018

## 10. Class system and Class shedule

<ul style="list-style-type: none"> <li>- 전반부는 MATLAB의 기본 및 활용 능력을 학습한다.</li> <li>- 중-후반부에는 학생들이 직접 프로그램을 개발하고, 개발한 프로그램을 발표 소개한다.</li> </ul>
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### < Class Schedule >

\* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Introduction / Overview of MATLAB	E	Kim, Jinyoung	Lecture		
2	Numeric, Cell, and Structure Arrays	E	Kim, Jinyoung	Lecture		
3	Functions and Files	E	Kim, Jinyoung	Lecture		
4	Programming with MATLAB	E	Kim, Jinyoung	Lecture		
5		E	Kim, Jinyoung		Homework	

## < Class Schedule >

\* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
6	Programming Idea Presentation	E	Kim, Jinyoung	Presentation & Consultation		Presentation Slides
7	Midterm Presentation	E	Kim, Jinyoung		Presentation	Presentation Slides
8	Midterm Exam	E	Kim, Jinyoung			
9	Programming Idea Presentation / Team Consultation	E	Kim, Jinyoung	Presentation & Consultation		Presentation Slides
10	Graphical User Interface (GUI)	E	Kim, Jinyoung	Lecture		
11	Examples of MATALB programs	E	Kim, Jinyoung	Lecture		
12	Programming Idea Presentation / Team Consultation	E	Kim, Jinyoung	Presentation & Consultation		
13	Advanced Plotting	E	Kim, Jinyoung	Lecture		
14	Team Consultation	E	Kim, Jinyoung	Consultation		
15	Final Presentation / Program Submission with Report	E	Kim, Jinyoung		Presentation / Homework	Presentation Slides
16	Final Exam	E	Kim, Jinyoung			

## 11. Other items of notification