(AP)
Advanced Programming
Teams Code: <e51duva>

Week 1 – Couse Intro

Spring 25-26

Feb. 13, 2026

Lect. Malik MALKAWI

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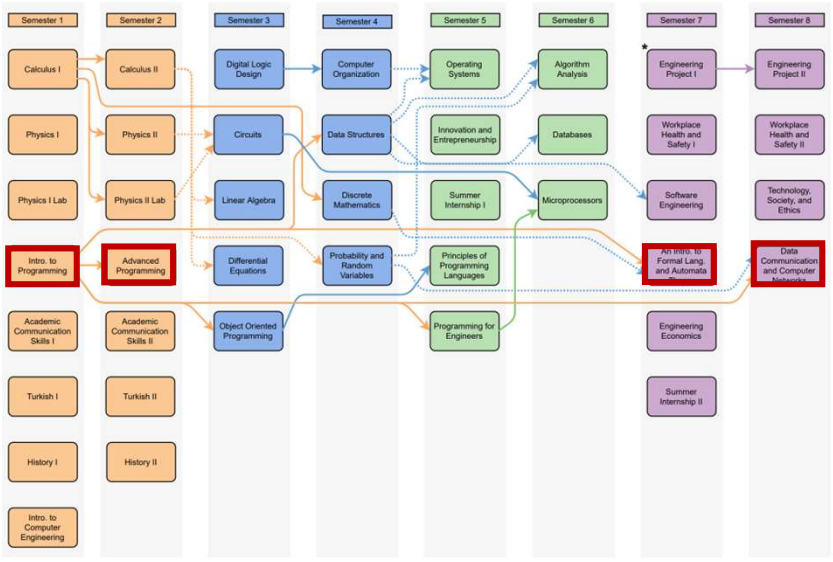
Agenda

- Welcome
- Why A.P.
- What is the Applications
- Course Content and Organization
- Evaluations and Rules

Class Post-Requisites

- http://sens.medipol.edu.tr/undergraduate-programs/



Why am I in this class?

Want to be an Engineer?

→ You need 'Problem solving skills'

- ✓ formulate a problem, and
- ✓ find creative solutions solve it clearly

Why Python? – easy to read, easy to learn compared to other languages

Has anyone coded in C, C++, Java?

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About the Course

- Python Programming Language Complete Coverage
  - EEE – Communications, Control, Analysis
  - CoE – Development of core computer systems/programs, Artificial Intelligence
  - BME – Processor programming
  - IE – Optimization programs
- Heavy in workload.
  - Assignments, Labs, Exams, Quizzes.
- You will need enjoy the class since it is one of the keys to finding good jobs.

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Course Goals

- Improve programming and problem-solving capabilities.
- Emphasize programming practice, efficiency, and data science.
- Utilize Python, a widely used language in education, scientific computing, and data science.
- Explore various Python libraries for AI and data science applications.
- Develop efficient programs leveraging built-in libraries without extensive knowledge of underlying logic and mathematics.

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Course Learning Outcomes

- Gain proficiency in designing, developing, and testing efficient Python programs.
- Understand and analyze programming efficiency and basic algorithms.
- Implement graphical user interfaces and leverage advanced features of Python.
- Manipulate Python data structures effectively.
- Load datasets from different data stores and perform array-oriented programming with NumPy.
- Work with Pandas Series and DataFrames for data analysis.
- Apply regular expressions and data wrangling techniques.
- Explore machine learning concepts and optimization.
- Implement recommendation systems with collaborative filtering techniques.

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Course Content

WEEK	Topics
1	Algorithms and Diagrams
2	Files and Exception Handling
3	GUI Programming - Widgets
4	GUI Programming - Layout
5	GUI Programming - Events
6	Sci.Prog. Arrray-Oriented Prog - NumPy
7	Sci. Prog. Data Manipulation - Pandas
8	Sci. Prog. visualizations - Matplotlib
9	Web Crawling and Scraping
10	Web Crawling and Scraping
11	JSON and Rest APIs
12	Data Science Applications
13	Data Science Applications
14	Collaborative Filtering, Making Recommendations
15	Review

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Course Info

- Lecture : **Friday** **14:30 – 17:30** **CZ-12 *(ÖSYM) - B***
  Friday **17:30 – 20:30** **CZ-12 *(NON-ÖSYM) - A***
- Labs : **TBA** **TBA** **F2F** (**Mandatory**)

- Notes:
  - Course lectures PDFs will be uploaded to MS Teams.
  - You are responsible for everything discussed in the class as well.
  - TA's will also be arranged to help.
- Text-Books:
  - Y. Daniel Liang, Introduction to Programming Using Python, 2nd Ed., Pearson, 2019
  - Intro to Python for Computer Science and Data Science: Learning to Program with AI, Big Data and The Cloud, Paul Deitel, Harvey Deitel, Pearson, 2020
  - Lecture notes that will be delivered during the classes

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MS Teams

- Microsoft Teams Course Code : [**e51duva**].
- We collect exams, assignments, and lab reports from this platform.
- Announcements will be made through MS Teams.
- You have to check MS teams frequently as well as Medipol (.edu) emails.
  - You are responsible for all the announcement made.

Labs

- I2P is a a huge class.
- You will be assigned to groups under the responsibility of a TA.
  - TA will help you through the course.
  - You MUST attend his/her Lab session.
- Not joining 2 labs means **FAILING** the course.
- We will have labs almost every week. They will be performed face-to-face.
- The TA will do some coding related to the class. Then, you will be asked to write your own code and submit (graded).
  - If PLAGIARISM: grade = 0 (No objections)
  - The exams will probably have questions from the lab parts.

Labs

- Submit your Lab assignment according to the given instructions.
  - Your codes
  - Flowchart design
- There will be Naming conventions. Failure to follow the submission requirements will void your submission as TAs do not have time to sort your non-conforming submissions.
  - Not following the rules = 0 (No objections)
  - Submitting after the allowed time = 0 (No objections)
  - Submitting in the wrong lab = 0 (No objections)
- Department initials are CEE, CoE, BME, EEE, IE

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Automatic Course Failing

- **Missing more than 1 lab.**
- Midterm and final average below 20.
- Not attending the exams.
- Not returning more than one project.
- Not returning more than one assignment.
- Absenteeism.

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Assignments

- You can discuss the assignments among yourselves but need to attempt them individually. For help contact TAs.
- Usually, coding + flowcharts
- Academic misconduct will be penalized.
- Software tools for the similarity detection.
- Online submission via MS Teams.
- Usually due by the evening.
- No late submissions.
  - It will be impractical to keep the door open when there are many students.
  - So do not send emails to the TA.

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Assignment Submission

- Submit your assignment according to the given instructions.
  - Your codes
  - Flowchart design
- There will be Naming conventions. Failure to follow the submission requirements will void your submission as TAs do not have time to sort your non-conforming submissions.
  - If PLAGIARISM: grade = 0 (No objections)
  - Not following the rules = 0 (No objections)
  - Submitting after the allowed time = 0 (No objections)
  - Submitting in the wrong lab = 0 (No objections)
- Department initials are CEE, CoE, BME, EEE, IE
- Half-an-hour before the submission, stop your work and make sure you are compliant with the submission guidelines.

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Quizzes

- During the lecture, usually at the end.
- Short question(s) with short duration (15 mins).
- No submission after the specified time.

  - If PLAGIARISM: grade = 0 (No objections)
  - Not following the rules = 0 (No objections)
  - Submitting after the allowed time = 0 (No objections)

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Mini Projects (MPs)

- Mini-projects simulating real-world scenarios.
- Hands-on experience allows you to act as developers.
- Understanding software development lifecycle in controlled environment.
- You tasked with addressing customer requirements.
- Software tools for the similarity detection.

  - If PLAGIARISM: grade = 0 (No objections)
  - Not following the rules = 0 (No objections)
  - Submitting after the allowed time = 0 (No objections)

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Mini Projects (MPs) Evaluation

Your mini project grade <= 2 * ExamGrade

ExamGrade:
Midterm Grade for MP1
Avg. of Midterm and Final for MP2

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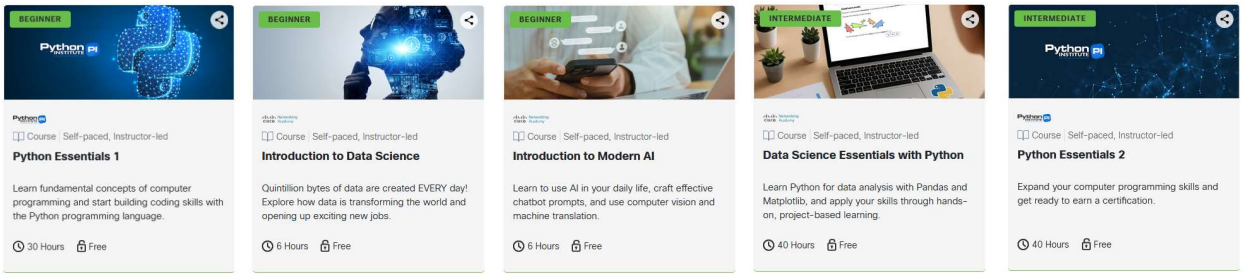
Cisco NetAcad (out of %100)

Self-based

*Only links/QR codes provided in lectures or slides are valid. Any other registration will receive **ZERO**.



#1 (15%)	#2 (5%)	#3 (10%)	#4 (30%)	#5 (40%)
W1-2	W3-4	W4-5	W7-10	W11-15

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Overall Marking

Activity	Count	Each	Total %
Assignments	2	2.5%	5
Mini-Projects	2	7.5%	15
Cisco	5	Check Slide 20 (not divided equally)	15
Labs and attendance	10 + 1	1%	10
In-Class Quizzes	~10	~0.5%	5
Midterm	1	20%	20
Final	1	30%	30
		TOTAL	**100 %**

- **Exam are FACE-to-FACE**
- **Not joining 2 Labs = FAIL**

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Approx. Dates

Date	WEEK	Activity				
13.02.2026	1	Lecture	-	-	Cisco-1	-
20.02.2026	2	Lecture	-	-	Cisco-1	-
27.02.2026	3	Lecture	Lab	-	Cisco-2	Lec.Quiz
06.03.2026	4	Lecture	Lab	MP1	Cisco-2	Lec.Quiz
13.03.2026	5	Lecture	Lab	-	Cisco-3	Lec.Quiz
20.03.2026	6	Lecture	Lab	A1	Cisco-3	Lec.Quiz
27.03.2026	7	Lecture	Lab	-	Cisco-4	Lec.Quiz
03.04.2026	8	Midterm				
10.04.2026	9	Lecture	Lab	-	Cisco-4	Lec.Quiz
17.04.2026	10	Lecture	Lab	-	Cisco-4	Lec.Quiz
24.04.2026	11	Lecture	Lab	-	Cisco-5	Lec.Quiz
01.05.2026	12	Lecture	Lab	MP2	Cisco-5	Lec.Quiz
08.05.2026	13	Lecture	Lab	-	Cisco-5	Lec.Quiz
15.05.2026	14	Lecture	Lab	A2	Cisco-5	Lec.Quiz
22.05.2026	15	Lecture	-	-	Cisco-5	-
29.05.2026	16	Final				

- Dates are **approximately** and may change.

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Couple Points

- Follow the course from the beginning and try not to miss even a single class.
- In case you miss classes,
  - Make up the missing class through similar topics on YouTube.
- Make sure you follow the class during online delivery. Do not let Internet to disrupt your education and hence your future career.
- Medical reports are NOT alone sufficient for the exam make-up. The prof needs to be convinced too.
- **No make-up for**
  - **Assignments**
  - **Mini-Projects**
  - **Labs**
  - **Quizzes**
- There will be objection period for each activity, after the deadline **NO** objections will be accepted

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Budgeting Your Time

- Time is like money – invest it wisely
- Education is an expensive investment – requires responsible management
- Learning is a lot of work at the beginning, and it's not much fun
- Often, after even a short period of time, learning will become a joy and raise your self-esteem
- Learning and understanding new things can be downright exciting

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Daily Studying and Preparation (cont.)

- Prepare for your exams
  - There is no substitution for daily studying.
  - Don’t wait till the night before the exam to study.
  - The night before the exam, spend a few hours reviewing your notes and sample problems.
  - Ask your instructor ahead of time what type of exam it will be; how many questions there will be; and so on.
  - Ask your instructor for suggestions to help you prepare better for the exam.
  - Benefit from TA help.