



İSTANBUL
ŞEHİR
UNIVERSITY

İSTANBUL ŞEHİR UNIVERSITY
COLLEGE OF ENGINEERING and NATURAL SCIENCES
2019 - 2020 / SPRING SEMESTER
ENGR 102 – PROGRAMMING PRACTICE
SYLLABUS

Course Title	Code	Semester	Hour (T+P)	Credit	ECTS
Programming Practice	ENGR 102	Spring	4 (2+2)	3	5
Prerequisites	ENGR 101				
Language of Instruction	English				
Course Type (Required /elective)	Required for Engineering Majors / Elective for Others				
Course Coordinator	Ali Çakmak				
Instructor/e-mail / Office Hour	Ali Çakmak / alicakmak@sehir.edu.tr / Tue 14-16 (AB 4009)				
Teaching Assistants and Office Hours	Mehmet Isgoren <mehmetisgoren@std.sehir.edu.tr>			Wed	11-13
	Asem Okby <asemokby@std.sehir.edu.tr>			Fri	11-13
	Ali Reza Ibrahimzada <aliibrahimzada@std.sehir.edu.tr>			Fri	9-11
	Hakan Yurtluk <hakanyurtluk@std.sehir.edu.tr>			Mon	16-18
<i>The office hours of TAs will be held in Lab Building #201.</i>					
Goals	The main goal of this course is to make students practice the programming skills that they acquired in ENGR 101 – Intro. to Programming course. In particular, the course aims to teach widely used problem solving methodologies on real life examples.				
Learning Outcomes	1. Learn GUI programming in Python with Tkinter 2. Learn interacting with file-based structures in a program 3. Learn practical data mining techniques including collaborative filtering, classification, clustering.				
Course Content	From filtering spam to recommending movies, books and music to end-users, the course content is mainly based on practical applications. All students are required to complete a set of mini projects which will allow students to practice what they learn in the classroom by building practical applications.				
Assessment Criteria For a mini project, your grade cannot exceed 2*ExamGrade where ExamGrade is the average of your midterm and final exam grade.	Assessment Components			Weight	
	Mini Project 1			12%	
	Mini Project 2			12%	
	Mini Project 3			12%	
	Mini Project 4			12%	
	Mini Project 5			12%	
	Midterm Exam			20%	
	Final Exam			20%	
WEEKLY TOPICS AND PREPARATIONS					
Weeks	Topics			Reading	
Week 1	Introduction, Files			Think Py – Ch 14	

Week 2	Databases, Pickling, Exceptions	Think Py – Ch 14
Week 3	GUI Programming – Widgets	Class Material
Week 4 - MP1 posted	GUI Programming – Layout Managers	Class Material
Week 5	GUI Programming – Events	Class Material
Week 6 - MP1 due	Introduction to Collective Intelligence, Making Recommendations	Ch 1, 2
Week 7 - MP2 posted	Collaborative Filtering	Ch 2
Week 8 – MT	Discovering Groups	Ch 3
Week 9 - MP2 due, MP3 posted	Discovering Groups - Hierarchical Clustering	Ch 3
Week 10	Searching and Ranking - Crawling	Ch 4
Week 11 – MP3 due, MP4 posted	Searching and Ranking – Indexing and Querying	Ch 4
Week 12	Searching and Ranking – Ranking	Ch 4
Week 13 – MP4 due, MP5 posted	Document Filtering	Ch 6
Week 14 -	Classification with Naïve Bayes, Lambda Functions	Ch 6
Week 15 – MP5 due	Final Exam	

REFERENCES	
Main Textbook	Programming Collective Intelligence by Toby Segaran. O'Reilly Press (2007, 1st edition).

ECTS / WORKING HOUR TABLE			
Activities	Number of Weeks	Duration (Hour)	Working Hours
Duration of the Course (Including Exams: 14 x Total Weekly Course Hour)	14	4	56
Extracurricular Working Hour (Preparatory Work, Review)	14	2	28
Assignments, Presentations, Internet Studies, etc.	10	7	70
Working Hours in Total			154
Working Hours in Total / 30			5.1
ECTS Credit of the Course			5