

1. Course Description

COURSE DESCRIPTION FORM		
Course Code and Title	KM104Computer Programming	
Course Semester	2	
Catalog Description (Content) of the Course	Computer systems, Operating systems, Problem solving, Algorithm development and flow diagrams, Basic concepts of programming, Data types, Mathematical operations and functions, Program control commands, Cycle structures, Input-output operations, Subprograms, Pointers.	
Main Textbook	Nyhoff, L., Leestma, S., FORTRAN90 for Engineers and Scientists, Prentice Hall, 1997.	
Supporting Textbooks	<ul style="list-style-type: none"> Uysal, M., Uysal, S.A., FORTRAN90&95&2000, Beta Basım Yayım Dağıtım A.Ş, 2004. Deitel, H.M. & Deitel, P.J. (2010). C++ How to Program, 7/e, Pearson. Chapra, Steven C., Raymond P.Canale, “Numerical Methods for Engineers: with software and programming applications”, 4th Edition, McGraw Hill, 2003. William J Palm, Introduction to MATLAB for Engineers, 3rd Edition, McGraw Hill, 2010. 	
Course Credit (ECTS)	3	
Prerequisites of the Course (Compulsory attendance should be indicated here.)	There is no prerequisite or co-requisite for this course.	
Type of the Course	Compulsory	
Instruction Language of the Course	Turkish	
Object and Target of the Course	To introduce the basic concepts of programming language, to gain the logic of algorithm and programming and to write programs using the programming development environment and to be able to use the programming languages to solve the problems of chemical engineering effectively.	
Learning Outcomes of the Course	<p>To teach an effective way to solve engineering problems by using computer programming language.</p> <p>After successfully completing the course, the student is able to decide whether an engineering problem should be solved manually or by programming; an</p> <p>The student can analyze the problem with sufficient clarity to design an algorithm.</p> <p>Can test and debug the program. Writes the program with sufficient clarity and structure so that others can understand and use the program.</p>	
Mode of Delivery	The mode of delivery of this course is Face to face	
Weekly Schedule of the Course	Week	Subject
	1-2	Programming languages, machine language, high level languages. Compiler, “source”, “object”, “link” concepts.
	3-4	Basic data types, mathematical operations and functions, constants, variables, structure of the programs.
	5-8	Program control statements; Loop structures

	<table><tr><td>9-11</td><td>Data input-output , formatted output, formatted input, read and write statements, file operations</td></tr><tr><td>12-14</td><td>Arrays, subroutines, pointers</td></tr></table>	9-11	Data input-output , formatted output, formatted input, read and write statements, file operations	12-14	Arrays, subroutines, pointers																																																								
9-11	Data input-output , formatted output, formatted input, read and write statements, file operations																																																												
12-14	Arrays, subroutines, pointers																																																												
Educative Activities <i>(Credit will be determined based on the time given for these activities. Should be filled carefully.)</i>	Theoretical Study Hours of Course Per Week Practicing Hours of Course Per Week Searching in Internet and Library Mid-Term and Studying for Mid-Term Final and Studying for Final																																																												
Assessment Criteria	<table><tr><td></td><td>Quantity</td><td>Total Contribution (%)</td></tr><tr><td>Midterm</td><td>2</td><td>40</td></tr><tr><td>Homework</td><td>3</td><td>10</td></tr><tr><td>Assignment</td><td>1</td><td>5</td></tr><tr><td>Projects</td><td>0</td><td>0</td></tr><tr><td>Practice</td><td>0</td><td>0</td></tr><tr><td>Quiz</td><td>2</td><td>5</td></tr><tr><td>Contribution of In-term Studies to Overall Grade</td><td></td><td>60</td></tr><tr><td>Contribution of Final Examination to Overall Grade</td><td></td><td>40</td></tr><tr><td>Attendance</td><td></td><td></td></tr></table>		Quantity	Total Contribution (%)	Midterm	2	40	Homework	3	10	Assignment	1	5	Projects	0	0	Practice	0	0	Quiz	2	5	Contribution of In-term Studies to Overall Grade		60	Contribution of Final Examination to Overall Grade		40	Attendance																																
		Quantity	Total Contribution (%)																																																										
	Midterm	2	40																																																										
	Homework	3	10																																																										
	Assignment	1	5																																																										
	Projects	0	0																																																										
	Practice	0	0																																																										
	Quiz	2	5																																																										
	Contribution of In-term Studies to Overall Grade		60																																																										
Contribution of Final Examination to Overall Grade		40																																																											
Attendance																																																													
Workload of the Course	<table><tr><td>Activity</td><td>Total Week Count</td><td>Weekly Duration (in hour)</td><td>Total Workload in Semester</td></tr><tr><td>Theoretical Study Hours of Course Per Week</td><td>14</td><td>2</td><td>28</td></tr><tr><td>Practicing Hours of Course Per Week</td><td>14</td><td>2</td><td>28</td></tr><tr><td>Reading</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Searching in Internet and Library</td><td>2</td><td>4</td><td>8</td></tr><tr><td>Designing and Applying Materials</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Preparing Reports</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Preparing Presentation</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Presentation</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Mid-Term and Studying for Mid-Term</td><td>2</td><td>5</td><td>10</td></tr><tr><td>Final and Studying for Final</td><td>2</td><td>5</td><td>10</td></tr><tr><td>Other</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Total work load</td><td></td><td></td><td>84</td></tr><tr><td>Total work load/25</td><td></td><td></td><td>3,36</td></tr><tr><td>ECTS of the course</td><td></td><td></td><td>3</td></tr></table>	Activity	Total Week Count	Weekly Duration (in hour)	Total Workload in Semester	Theoretical Study Hours of Course Per Week	14	2	28	Practicing Hours of Course Per Week	14	2	28	Reading	0	0	0	Searching in Internet and Library	2	4	8	Designing and Applying Materials	0	0	0	Preparing Reports	0	0	0	Preparing Presentation	0	0	0	Presentation	0	0	0	Mid-Term and Studying for Mid-Term	2	5	10	Final and Studying for Final	2	5	10	Other	0	0	0	Total work load			84	Total work load/25			3,36	ECTS of the course			3
	Activity	Total Week Count	Weekly Duration (in hour)	Total Workload in Semester																																																									
	Theoretical Study Hours of Course Per Week	14	2	28																																																									
	Practicing Hours of Course Per Week	14	2	28																																																									
	Reading	0	0	0																																																									
	Searching in Internet and Library	2	4	8																																																									
	Designing and Applying Materials	0	0	0																																																									
	Preparing Reports	0	0	0																																																									
	Preparing Presentation	0	0	0																																																									
	Presentation	0	0	0																																																									
	Mid-Term and Studying for Mid-Term	2	5	10																																																									
	Final and Studying for Final	2	5	10																																																									
	Other	0	0	0																																																									
	Total work load			84																																																									
	Total work load/25			3,36																																																									
ECTS of the course			3																																																										

Course's Contribution To Program	No	Program Learning Outcomes	1	2	3	4	5
	1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.		x			
	2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.		x			
	3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.	x				
	4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.				x	
	5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.		x			
	6	Ability to work efficiently in intra-disciplinary teams.		x			
	7	Ability to work efficiently in multi-disciplinary teams;	x				
	8	Ability to work individually.		x			
	9	Ability to communicate effectively in Turkish/English, both orally and in writing; Ability to write effective reports and comprehend written reports, make effective presentations, prepare design and production reports, give and receive clear and intelligible instructions.	x				
	10		x				
	11	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.			x		
	12	Awareness of professional and ethical responsibility.	x				
	13	Information about business life practices such as project management, risk management, and change management.	x				
	14	Information about awareness of entrepreneurship, innovation, and sustainable development.	x				
	15	Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety.	x				
	16	Knowledge about awareness of the legal consequences of engineering solutions.	x				

	17	Knowledge on standards used in engineering practice.	x				
Name of Lecturer(s) and Contact Information	<div>1. Prof.Dr. Kırali MÜRTEZAOĞLU kirali@gazi.edu.tr</div> <div>2. Prof.Dr. Ayla ALTINTEN altinten@gazi.edu.tr</div>						