COURSE DESCRIPTION FORM	
Course Code and Title	**KMP563-WORKING SAFELY WITH CHEMICALS**
Course Semester	1
Catalog Content	Chemical information systems. Classification of chemicals. Regulations on the use of chemicals. Safe-working approaches with chemicals. Risk assessment of process chemicals. Effects of possible changes in production parameters. Evaluation of parameters causing loss of containment.
Main Textbook	• Carson, P., Mumford, C., Hazardous Chemicals Handbook, 2nd ed., 2002.
Supplementary Textbooks	• Safety in the Use of Chemicals at Work, Geneva, ILO, 1993. • Dikshith, T.S.S., Safe Use of Chemicals: A Practical Guide, CRC Press, 2008.
Course Credits (ECTS)	6
Pre-Requisites And Co-Requisites	-
Type of the Course	Compulsory
Language of Instruction	Turkish
Object and Target of the Course	• To provide information to determine the danger of chemicals and the possible risks that they may cause. • To provide information about taking necessary precautions for the control of chemical risks. • To provide information to make safety plans with chemicals.
Course Learning Outcomes	• Defines the dangers and risks of process chemicals. Suggests appropriate risk assessment approach/methods for taking precautions. • Evaluates the risks caused by possible design deviations.
Mode of Delivery	Lecture, Question & Answer, Demonstration
Weekly Schedule	1st Week **Definitions** - Process definitions - Chemical definitions 2nd Week **Chemical Information Systems** - CAS No., EC No., UN No., NFPA, GBF 3rd Week **Safety Data Sheet** 4th Week **Hazard Classification of Chemicals** 5th Week **Hazard Classification of Chemicals** 6th Week **Management of Chemicals (Regulations)** 7th Week **Working with Chemicals-Midterm** -Chemical exposure - Regulations

	8th Week **Working with Chemicals** -Collective protection precautions (Substitution, Cleaning, Dilution, Mitigation) - Personal precautions 9th Week **Use of Chemicals in Process** -Purchase, Transportation, Storage, In-process transportation, Usage in process, Disposal 10th Week **Use of Chemicals in Process** -Purchase, Transportation, Storage, In-process transportation, Usage in process, Disposal 11th Week **Evaluation of Changes in Production Parameters** -Causes and effects of possible changes in production parameters. 12th Week **Evaluation of Changes in Production Parameters** -Causes and effects of possible changes in production parameters. 13th Week **Accident Investigations (Evaluation of the parameters that cause the loss of containment) - Midterm** 14th Week **Accident Investigations (Evaluation of the parameters that cause the loss of containment)** 15th Week **Final Exam**
Educative Activities	Theoretical Study Hours of Course Per Week : 3 Practical Study Hours of Course Per Week : - Reading : - Searching in Internet and Library : 3 Material Design and Application : 3 Preparing Reports : 2 Preparing Presentations : 2 Presentations : 1 Midterms and Studying for Midterms : 3 Final and Studying for Final : 2
Assesment Criteria	

	Quantity	**Total Contribution (%)**
Midterms	2	40
Assignments	1	10
Applications	-	-

	Projects	1	10
	Practices	-	-
	Quizzes	-	-
	Contribution of In-term Studies to Overall Grade		60
	Contribution of Final Examination to Overall Grade	1	40
	Attendance	-	

Workload of the Course

Activity	**Total Number of Weeks**	**Duration (Weekly Hour)**	**Total Period Workload**
Weekly Theoretical Course Hours	14	3	42
Weekly Practical Course Hours	-	-	-
Reading Tasks	-	-	-
Searching in Internet and Library	14	3	42
Material Design and Application	3	3	9
Preparing Reports	2	2	4
Preparing Presentations	2	2	4
Presentations	1	1	1
Midterms and Studying for Midterms	12	3	36
Final and Studying for Final	2	2	4
Other	-	-	-
Total Workload			142
Total Workload / 25			5.68
Course Credits (ECTS)			6

Course's Contribution to Program

No	**Program Learning Outcomes**	**1**	**2**	**3**	**4**	**5**
1	Developing undergraduate level competencies and deepening their knowledge to apply in the field of			X		

	process safety					
2	Understanding the undergraduate competencies and the interaction between the competencies gained in this program and the disciplines related to process safety	X				
3	Using the expert level theoretical and applied knowledge acquired in the field of process safety			X		
4	Developing the competencies gained at the undergraduate level and integrating the information gained in the field of process safety with the information from the relevant disciplines and creating new knowledge	X				
5	Solving process safety problems using scientific research methods	X				
6	Independently conducting studies that require expertise in the field of process safety	X				
7	Developing new approaches to complex problems encountered in applications in the field of process safety	X				
8	Taking responsibility and generating solutions for complex problems encountered in applications in the field of process safety	X				
9	Taking initiative in environments that require resolution of problems related to process safety	X				
10	Critically evaluating the information acquired about process safety and directing learning		X			
11	Ability to systematically transfer the developments and own studies in the field of process safety in written, oral and visual forms					X
12	Developing social relations and the set of values that direct these relationships with a critical approach and transforming	X				

		them when necessary					
	13	Establishes oral and written communication using a foreign language (European Language Portfolio B2 level)	X				
	14	Uses computer software at the level required by the process safety field				X	
	15	Uses advanced information and communication technologies at the level required by the field of process safety				X	
	16	Collecting, interpreting, finalizing the data on process safety, applying and sharing them with respect to ethical values				X	
	17	Developing different perspectives on process safety issues, setting policies, making plans and evaluating the results within the framework of quality		X			
	18	Internalizing the knowledge gained in the field of process safety with the competencies gained at the undergraduate level, turning it into skills and using it in interdisciplinary studies	X				
Name of Lecturer(s) and Contact Information	Faculty Members of the Chemical Engineering Department						