RISK ANALYSIS AND EVALUATION FOR ENVIRONMENTAL ENGINEERS

1	Course Title:	RISK ANALYSIS AND EVALUATION FOR ENVIRONMENTAL ENGINEERS	
2	Course Code:	CEV2106	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	4	
7	ECTS Credits Allocated:	2.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. FATMA OLCAY TOPAÇ	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Prof.Dr. F. Olcay Topaç olcaytopac@uludag.edu.tr 224 2942109 Bursa Uludağ Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü.	
17	Website:		
18	Objective of the Course:	-To teach the place and importance of risk analysis and assessment in occupational health and safety management system. -To give main principles related with sources of hazards and risks in work environments. -To teach the main risk assessment methods.	
19	Contribution of the Course to Professional Development:	The course raises awareness of the risks that environmental engineers may encounter in their work environments and provides understanding of the risk assessment approach.	
20	Learning Outcomes:		
		1	Know the significance of occupational health and safety.
		2	Know the concepts of hazard and risk.
		3	Have basic knowledge on risk assessment methodologies and related parameters.
		4	Have theoretical knowledge in order to make risk analysis
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21	Course Content:		

	Course Content:	
Week	Theoretical	Practice
1	Risk analysis in work health and safety management system, the role of an environmental engineer in the system	
2	The concept of hazard and risk, sources of hazard in working areas of environmental engineers, chemicak hazards	
3	The relationship between source of hazard-hazard-risk-risk control	
4	The steps of risk assessment, the scale of probability-likelihood in risk assessment, matrixes, risk scores, risk levels, creating action tables, principles of risk control	
5	Risk assessment methods, Qualitative, quantitative and mixed methods	
6	Check List method, primary risk assessment, application areas, sample analysis	
7	Fine Kinnet method, scale of probability and frequency, decision and action according to risk level	
8	Failure mode and effects analysis-FMEA, System FMEA, Design FMEA, Process FMEA, Service FMEA, probability-severity and dedectability, calculation of risk priority number	
11	Hazard and Operability- HAZOP analysis method, process flowchart symbols according analysis	
12	Event tree analysis- ETA, analysis of	
13	Homework presentation	
23	Assesment	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	1	9.00	9.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Textbooks, References and/or Other	1 İş Sağlığı ve Güvenliği Yönetim Sistemleri ve Risk		
Others	0	0.00	0.00
Final Exams	İşveren Sendikaları Konfederasyonu TİSK yayınları, 2005. 2. Risk Yönetimi ve Değerlendirmesi İş sağlığı ve	15.00	15.00
Total Work Load			62.00
Total work load/ 30 hr	3- Çimento Müstahsilleri Risk değerlendirmesi ve OHSAS 18001, Serdar Sardan, Ankara, 2005		2.07
ECTS Credit of the Course			2.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	20.00
Quiz	1	10.00
Home work-project	1	10.00
Final Exam	1	60.00
Total	4	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00

Measurement and Evaluation Techniques Used in the Course	Midterm exam, 1 quiz, 1 homework and final exam

24	**ECTS / WORK LOAD TABLE**

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**				**4 High**			**5 Very High**			