

1. Course Description

COURSE DESCRIPTION FORM																									
Course Code and Title	CHE 330- Laser dyes																								
Course Semester	6																								
Catalog Description (Content) of the Course	Lasertypesandusageareas. Properties of organiclaserdye, laserdyeclassificationandchemicalstructures. Production of finisheddye.																								
Main Textbook	Dyelasers, F.P. Schafer, Springer-Verlag, Berlin, 1977,																								
Supporting Textbooks	Developments in thechemistryandtechnology of organicdyes J. Griffiths (Ed.), CIS, London, 1984 • High technologyapplications of organiccolorants, P. Gregory, PlenumPress, New York, 1988 • Handbook of lasers, R.J. Pressley (Ed.), ChemicalRubberCo., Ohio, 1971																								
Course Credit (ECTS)	3																								
Prerequisites of the Course (Compulsory attendance should be indicated here.)	No																								
Type of the Course	Elective																								
Instruction Language of the Course	English																								
Object and Target of the Course	To examine the syntheses of laser systems and their dyes																								
Learning Outcomes of the Course	Informing about laser systems and dyes																								
Mode of Delivery																									
Weekly Schedule of the Course	<table border="1"> <thead> <tr> <th colspan="2">COURSE CONTENT</th> </tr> </thead> <tbody> <tr> <td>1. week</td> <td>Introduction, lasersystem, general framework</td> </tr> <tr> <td>2. week</td> <td>Lasertypes</td> </tr> <tr> <td>3. week</td> <td>Lasertypes</td> </tr> <tr> <td>4. week</td> <td>Lasertypes</td> </tr> <tr> <td>5. week</td> <td>Laserdyesandapplicationareas</td> </tr> <tr> <td>6. week</td> <td>Laserdyes, chemicalstructuresandproperties.</td> </tr> <tr> <td>7. week</td> <td>Laserdyes, chemicalstructuresandproperties.</td> </tr> <tr> <td>8. week</td> <td>Color andcolorfulness, general definitions.</td> </tr> <tr> <td>9. week</td> <td>Classifications of dyestuffs, structuesandusagedifferences</td> </tr> <tr> <td>10. week</td> <td>Laserdyegroups, coumarine, rhodamine, carbostyryldyesetc.</td> </tr> <tr> <td>11.</td> <td>Synthesis of laserdyes, examples of latesttechniques</td> </tr> </tbody> </table>	COURSE CONTENT		1. week	Introduction, lasersystem, general framework	2. week	Lasertypes	3. week	Lasertypes	4. week	Lasertypes	5. week	Laserdyesandapplicationareas	6. week	Laserdyes, chemicalstructuresandproperties.	7. week	Laserdyes, chemicalstructuresandproperties.	8. week	Color andcolorfulness, general definitions.	9. week	Classifications of dyestuffs, structuesandusagedifferences	10. week	Laserdyegroups, coumarine, rhodamine, carbostyryldyesetc.	11.	Synthesis of laserdyes, examples of latesttechniques
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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 Mid-Term and Studying for Mid-Term Final and Studying for Final				
Assessment Criteria		Quantity	Total Contribution (%)		
	Midterm	2	60		
	Homework		0		
	Assignment		0		
	Projects		0		
	Practice		0		
	Quiz		0		
	Contribution of In-term Studies to Overall Grade		60		
	Contribution of Final Examination to Overall Grade		40		
	Attendance				
Workload of the Course		Activity	Total Week Count	Weekly Duration (in hour)	Total Workload in Semester
		Theoretical Study Hours of Course Per Week	14	3	42
		Practicing Hours of Course Per Week			
		Reading			
		Searching in Internet and Library			
		Designing and Applying Materials			
		Preparing Reports			
		Preparing Presentation			
		Presentation			
		Preparing Homework			
		Mid-Term and Studying for Mid-Term	2	10	20
		Final and Studying for Final	1	10	10
		Other			0
		Total work load			72
		Total work load/25			2,88

		ECTS of the course							3	
Course's Contribution To Program		Number	Program 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		x					

			for investigating engineering problems.						
	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,					x	
	10		prepare design and production reports, give and receive clear and intelligible instructions.		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	x					

			sustainable development.						
	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	1. Prof. Dr. Atilla MURATHAN, murathan@gazi.edu.tr 2. 3.								