Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Spectrometry	FZK467.3	7. Semester	2 + 2	3.0	7.0

Prerequisites	None

Language of Instruction	Turkish
Course Level	Bacheclor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Faruk SOYDUGAN
Instructors	
Assistants	
Course Objectives	This course will give light-matter interaction, support the theorical background for spectrum formation and its analyses, and usage various wavelength of spectrum in industry, medical science and astrophysics
Course Content	Electromagnetic radiation and its characteristics,Matter-radiation interaction,Atom spectrum, its formation and properties,Properties of atom spectrums,Molecule spectrum, its formation and properties,Rotation and vibration spectrum,Obtaining spectrum and spectrometers Infrared spectra,Raman spectra,X-ray spectra,Spectrum of electron,Laser spectra,Application in Medical Science and Industry,Application in Astrophysics
Course Learning Outcomes	1) Explain characteristic of electromagnetic radiation and consequences of matter-light interaction. 2) Interpret the main aim of the spectroscopy and also correlate in different areas 3) Recognize atom and molecul spectrum and tell differences of them. 4) Interpret characteristic of various type spectra.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Electromagnetic radiation and its characteristics	Lecture, aplications, homework	
2. Week	Matter-radiation interaction	Lecture, aplications, homework	
3. Week	Atom spectrum, its formation and properties	Lecture, aplications, homework	
4. Week	Properties of atom spectrums	Lecture, aplications,	

Quick Access

Physics
- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information
- Course Information
- Weekly Course Content
- Resources
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

		homework	
5. Week	Molecule spectrum, its formation and properties	Lecture, aplications	
6. Week	Rotation and vibration spectrum	Lecture, aplications	
7. Week	Obtaining spectrum and spectrometers	Lecture, Application	
8. Week	Midterm exam	Exam	
9. Week	Infrared spectra	Lecture, Applications	
10. Week	Raman spectra	Lecture	
11. Week	X-ray spectra	Lecture, application	
12. Week	Spectrum of electron	Lecture, applications	
13. Week	Laser spectra	Lecture, Homework	
14. Week	Application in Medical Science and Industry	Lecture, applications	
15. Week	Application in Astrophysics	Lecture, applications	
16. Week	Final exam	Exam	

RESOURCES

Recommended Sources
Modern Spectroscopy, J.M. Hollas, WILEY, 2004
Gökdoğan, N., Spektroskopiye Giriş, Fen Fakültesi Basımevi, İstanbul, 1978
Introduction to Spectroscopy, D.L. Pavia, G.M. Lampman, G.S. Kriz, J.A. By yawn, Brooks Cole, 2008

ASSESSMENT

Measurement and Evaluation Methods and Techniques
Mid-term exam (40 percent) and final exam (60 percent).

COURSE CATEGORY

Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4
PY1	5	5	5	5	5
PY2	5	5	5	5	5
PY3	3	3	3	3	3
PY4	5	5	5	5	5
PY5	4	4	4	4	4
PY6	4	4	4	4	4
PY7	2	2	2	2	2
PY8	2	2	2	2	2
PY9	4	4	4	4	4
PY10	4	4	4	4	4

PY11	2	2	2	2	2
PY12	4	4	4	4	4
PY13	4	4	4	4	4
PY14	5	5	5	5	5
PY15	4	4	4	4	4

*DK = Course's Contrubution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

.

ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Class Hours (14 weeks)	14	4	56
Final Exam Preparation	1	40	40
Mid Term Exam Preparation	1	37	37
Further Study	14	2	28
Preliminary Study	14	1	14
Mid Term Exam 1	1	2	2
Final Exam	1	2	2
		Total Workload	179
		Total Workload / 25.5 (s)	7.02
		ECTS Credit of the Course	7