Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Introduction To Photometry	FZ5053		3 + 0	3.0	7.5

Prerequisites	None
Language of Instruction	Turkish
Course Level	Second Cycle
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Prof. Dr. Ahmet ERDEM Prof. Dr. Caner ÇİÇEK
Instructors	Prof. Dr. Ahmet ERDEM Prof. Dr. Caner ÇİÇEK Prof. Dr. Osman DEMİRCAN Assoc. Prof. Dr. Faruk SOYDUGAN Assoc. Prof. Dr. Esin SOYDUGAN
Assistants	
Course Objectives	The objective of this course is to help the students comprehend the structures of dedectors, magnitude systems, energy distribution in stellar spectra, characteristic physical parameters of continuous energy distribution, photoelectric photometries, photomultipliers and photometric filter. The students will also explore relationships between two similar photometric systems, two-dimensional photometric classification of stars, and atmospheric and interstellar extinction.
Course Content	History of photometry, electromagnetic spectrum, energy distrubitions of the stars, photomultiplier tubes and their features, CCD cameras and their features, monochromatic extinction, interstellar extinction.
Course Learning Outcomes	1) Define structures of detectors and "noise" as a term. 2) Describe the definition of brightness and color index. 3) Evaluate energy distributions in stellar spectra 4) Recognize photoelectric photometers, photomultipliers. 5) Identify basic properties of photometric fliters and fliter types 6) Interpret atmospheric extinction. 7) Explain interstellar extinction. 8) Apply methods of photometric photometry

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	The history of the photometry, electromagnetic spectrum, noise	Oral lectures with	

Quick Access

Physics (Master)
- 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

	description	interactive discussions, Assignment, Applications, Practice	
2. Week	Detectors and their properties, types of noise	Oral lectures with interactive discussions, Assignment, Applications, Practice	
3. Week	Definition of the brightness and color indices	Oral lectures with interactive discussions, Assignment, Applications, Practice Lecture Lecture	
4. Week	Stars	Oral lectures with interactive discussions, Oral lectures with interactive discussions, Assigment	
5. Week	Energy distribution of the stars.	Oral lectures with interactive discussions,assignment , Applications, Practice	
6. Week	Continuous energy distribution and The Balmer Discontinuity.	Oral lectures with interactive discussions,assignment , Applications, Practice	
7. Week	Discussing some related papers	Oral lectures with interactive discussions, assignment , Applications, Practice Lecture Lecture	
8. Week	Midterm exam	Writing and Oral Exam	
9. Week	Photomultipliers tube and properties.	Oral lectures with interactive discussions, assignment , Applications, Practice	
10. Week	CCD cameras and properties	Oral lectures with interactive discussions, assignment , Applications, Practice	
11. Week	Fundamental charactaristics of photometric filters and their properties and kinds.	Oral lectures with interactive discussions, assignment , Applications, Practice	
12. Week	Absorption, scattering and dispersion of light in earth atmosphere; atmospheric reduction of a star	Oral lectures with interactive discussions, assignment , Applications, Practice	
13. Week	Interstellar extinction and reddening-free indices	Oral lectures with interactive discussions, assignment , Applications, Practice	
14. Week	Applications	Oral lectures with interactive discussions, assignment , Applications, Practice	
15. Week	Final exam	Written, oral exam	
16. Week	Final Exam	Written, oral exam	

RESOURCES

Recommended Sources
Introduction to Astronomical Photometry, E. Budding, Osman Demircan, Cambridge University Press, 2007
Astronomical Photometry -A Guide; Sterken,Chr. and Manfroid,J., Kluwer Academic Publishers,1992.

ASSESSMENT

Measurement and Evaluation Methods and Techniques
Midterm Exam (%40) , Final Exam (%60)

COURSE CATEGORY

Course Category	Percentage
Area of pecialization Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4	DK5	DK6	DK7	DK8
PY1	5	5	5	5	5	5	5	5	5
PY2	5	5	5	5	5	5	5	5	5
PY3	5	5	5	5	5	5	5	5	5
PY4	5	5	5	5	5	5	5	5	5
PY5	5	5	5	5	5	5	5	5	5
PY6	5	5	5	5	5	5	5	5	5
PY7	4	4	4	4	4	4	4	4	4
PY8	3	3	3	3	3	3	3	3	3
PY9	4	4	4	4	4	4	4	4	4
PY10	3	3	3	3	3	3	3	3	3
PY11	4	4	4	4	4	4	4	4	4
PY12	5	5	5	5	5	5	5	5	5
PY13	5	5	5	5	5	5	5	5	5
PY14	4	4	4	4	4	4	4	4	4
PY15	4	4	4	4	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

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ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Final Exam	1	2	2
Mid Term Exam 1	1	2	2
Assignment 1	7	3	21
Class Hours (14 weeks)	14	3	42
Final Exam Preparation	1	10	10
Mid Term Exam Preparation	1	10	10
Preliminary Study	14	4	56
Application/Practice	14	3	42

Assignment 2	7	1	7
		Total Workload	192
		Total Workload / 25.5 (s)	7.53
		ECTS Credit of the Course	8