Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Intoduction To Cosmology I	FZ5015		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	Assist. Prof. Dr. Sezgin AYGÜN
Instructors	Assist. Prof. Dr. Sezgin AYGÜN Prof. Dr. İhsan YILMAZ Prof. Dr. İsmail TARHAN Assist. Prof. Dr. Melis ULU DOĞRU
Assistants	
Course Objectives	To gain basic knowledge of cosmology.
Course Content	The course includes the knowledge about formation and evolution of the universe, determine the age of the universe, formation of galaxies, inflation era, symmetry properties of the universe, the cosmic particles, during the evolution of the universe, and various cosmological models.
Course Learning Outcomes	1) to gain professional perspective about creation and evaluation of the universe. 2) to be able to understand models and scenario about the universe 3) to have a professional perspective about the popular scientific topics such as the big bang, age of the universe, formation of the galaxies 4) to describe the main events of the universe's history 5) to interpret physical processes in the early universe.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	The bing bang theory	Oral lectures with interactive discussions, Applications	
2. Week	Formation and evolution of the Universe	Oral lectures with interactive discussions, Applications	

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
- Assessment
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

3. Week	Planck Era, Symmetry breaking, formation of fundamental forces	Oral lectures with interactive discussions, Applications	
4. Week	Formation of matter, cosmic particles, Nucleosynthesis, hadrons and quarks	Oral lectures with interactive discussions, Applications	
5. Week	Galaxy formations	Oral lectures with interactive discussions, Applications	
6. Week	The size and age of the universe	Oral lectures with interactive discussions, Applications	
7. Week	Relics of big bang and problems in big bang theory	Oral lectures with interactive discussions, Applications	
8. Week	cosmological models I	Oral lectures with interactive discussions, Applications	
9. Week	Cosmological models II	Oral lectures with interactive discussions, Applications	
10. Week	Thermodynamic of the universe	Oral lectures with interactive discussions, Applications	
11. Week	Expanding universe	Oral lectures with interactive discussions, Applications	
12. Week	Observational parameters	Oral lectures with interactive discussions, Applications	
13. Week	Density of universe	Oral lectures with interactive discussions, Applications	
14. Week	Dark matter and dark energy	Oral lectures with interactive discussions, Applications	
15. Week	general review	Oral lectures with interactive discussions, Applications	
16. Week	general review	Oral lectures with interactive discussions, Applications	

RESOURCES

Recommended Sources
1) Introduction to cosmology, M.Roos, Wiley, Chichester, 1997.
2) Gravitation and Cosmology, S. Weinberg, Wiley, Chichester, 1972
3)An Introduction to Modern Cosmology, Ansrew Liddle, Wiley, Chichester, 1998

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
1 mid term exam 1 final exam 2 homeworks		
In-Term Studies	**Quantity**	**Percentage**
Mid Term Exam 1	1	40
Total	1	40
End-Term Studies	**Quantity**	**Percentage**
Final Exam	1	60
Total	1	60
Contribution Of In-Term Studies To Overall Grade		40
End-Term Studies		60
Total		100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4	DK5
PY1	5	5	5	5	0	0
PY2	5	5	5	5	0	0
PY3	5	5	5	5	0	0
PY4	5	5	5	5	0	0
PY5	5	5	5	5	0	0
PY6	5	5	5	5	5	5
PY7	5	5	5	5	5	5
PY8	5	5	5	5	5	5
PY9	5	5	5	5	5	5
PY10	5	5	5	5	5	5
PY11	5	5	5	5	5	5
PY12	5	5	5	5	5	5
PY13	5	5	5	5	5	5
PY14	5	5	5	5	5	5
PY15	5	5	5	5	5	5

*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)
Assignment 1	16	2	32
Class Hours (14 weeks)	14	3	42
Final Exam Preparation	1	28	28
Mid Term Exam Preparation	1	28	28

Further Study	18	3	54
Research&Project	4	1	4
Mid Term Exam 1	1	2	2
Final Exam	1	2	2
		Total Workload	192
		Total Workload / 25.5 (s)	7.53
		ECTS Credit of the Course	8