Course Syllabus

Code - Course Title	**FEL319 - Philosophy of Science**
Course Type	V. SEMESTER
Laboratory + Practice	3+0
ECTS	**7.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	DOÇ. DR. HÜSEYİN FIRAT ŞENOL

Mode of Delivery	The mode of delivery of this course is face to face.
Prerequisites	There is no prerequisite or co-requisite for this course.
Courses Recomended	It is suggested for students to take TAR 228 History of Science, FEL 314 Philosophy of Social Sciences, and FEL 412 Philosophy of History courses.
Recommended Resources	* Alan F. Chalmers, Bilim Dedikleri, trans. Hüsamettin Arslan, İstanbul: Paradigma, 2008.* Doğan Özlem, Bilim Felsefesi, İstanbul: Notos Kitap, 2010.* Cemal Güzel (Ed.), Sağduyu Filozofu: Karl R. Popper, Ankara: Bilim ve Sanat Yayınları, 1996.* Cemal Güzel (Ed.), Bir Bilgi Anarşisti: Feyerabend, Ankara: Bilim ve Sanat Yayınları, 1996.* Cemal Güzel (Ed.), Çoğulculuğun Kuramcısı: Lakatos, Ankara: Bilim ve Sanat Yayınları, 1999.* Cemal Yıldırım, Bilim Felsefesi, Ankara: Remzi Kitabevi Yayınları (3. Baskı), 2000.
Work Placement	N/A

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		What is science? What is philosophy of sciences and what is the philosophy of science? What is the problem of scientificity? The Problem of scientificity as a problem of knowledge. / Positivism in the 19th century. Techniques, theories and methodology of science.	
Week - 2		Bacon and Novum Organum. Do Aristoteles' and Bacon's epagoge mean the same?/Hume and the problem of epagoge/The logic behind using epagoge in science.	
Week - 3		The usage of model in scientific explanation. The mutual way in the philosophy of Logical Positivism: Deductive-nomological model (T-Y in Turkish abbreviation) or suitable law model. Hempel's model in scientific explanation. Popper-Hempel model of explanation. What is an explanative natural law? What is the use of an explanative law in the history and historical sciences?	
Week - 4		Neo-positivism and its scientific aproach to philosophy. Rudolf Carnap and his “Elimination of Metaphysics through logical analysis of language”. The ideal of the Vienna Circle: unified science and progress in sciences. Theory-testing through probabilistic verification.	
Week - 5		Theories of probability, various perspectives on probability, probability in science-scientific research	

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 6		Epistemological holism and Quine-Duhem thesis: “Two Dogmas of Empiricism”. Duhem’s criticism. Is it possible to confirm a scientific proposition as isolated from other theories related with itself? Can a single scientific theory be tested in isolation, or does a test of one theory always depend on other theories and hypotheses?	
Week - 7		Karl R. Popper and his criterion: Theory-testing through falsification. The Logic of Scientific Discovery. Popper’s solution for the problem of induction.	
Week - 8		A new approach for the History of Science: Alexandre Koyré and his studies on the history of science. Reading some of Alexandre Koyré’s articles: Galileo and his Pisa Experiment; Galileo and Plato; Is Galilean Science Platonic Science? Galileo and Modern scientific understanding: Mathematical idea of nature. Difference between the Aristotelian concept of kinesis and Galilean concept of motion.	
Week - 9		Thomas Kuhn and his The Structure of Scientific Revolutions. Normal science and its solving puzzle. Reading some divisions of The Structure of Scientific Revolutions.	
Week - 10		Revolutionary science. Crisis and the necessity of scientific revolutions. Progress through revolutions in the sciences. Reading some divisions of The Structure of Scientific Revolution. Some criticisms to Kuhn’s view and his reply.	
Week - 11		Paul K. Feyerabend and his anarchist theory of science. The principle “Anything goes”. Reading some divisions of Farewell to Reason, Three Dialogs on Knowledge, and Against Method	
Week - 12		“How to be a good empiricist?”. Feyerabend’s criticism on two conditions of contemporary empricism.	
Week - 13		Imre Lakatos and his criticism of Feyerabend. Imre Lakatos’ criticism of Popper’s falcificationism and his sophisticated falsificationism. Progressive and degenerative research programmes. Reading some divisions of The Methodology of Research Programmes.	
Week - 14		Evaluation.	

Learning Outcomes

#	Learning Outcome
1	critically analyse and evaluate the various perspectives in the philosophy of science.
2	summarise the perspectives on the nature of science and on models of scientific explanation.
3	compare and relate the methods of theory testing.
4	formulate examples from the history of science for models of scientific explanation, and for the methods in science.
5	evaluate the alternative perspectives to philosophy of science.

Sustainable Development Goals

No content has been provided.

Course Theme

No content has been provided.

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	0	0	0
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	0	0	0
Ödevler	0	0	0
Proje - Rapor - Sunum Hazırlama	0	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	0	0	0
Final Sınavı Hazırlığı (sınav süresi dahil)	0	0	0
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	0	0	0
Staj Uygulaması	0	0	0
		Calculated ECTS	**0**

Assessment Method and Passing Requirements

No content has been provided.

Assessment Method and Passing Requirements	Quamtity	Percentage (%)
1.Midterm Exam	1	50
Final Exam	1	50
	Sum (%)	**100**