Course Syllabus

Code - Course Title	**FTK510 - In Vitro Toxicological Methods I**
Course Type	II. SEMESTER
Laboratory + Practice	3+0
ECTS	**6.0**
Language of Instruction	Türkçe
Course Type	Elective Courses
Course Instructor(s)	PROF. DR. AYŞE TANSU KOPARAL

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	There is no recommended optional programme component for this course.
Recommended Resources	High-Throughput Screening Methods in Toxicity Testing, Steinberg Pablo, John Wiley Sons, 2013Handbook of Nanotoxicology, Nanomedicine and Stem Cell Use in Toxicology, Saura C. Sahuand Daniel A. Casciano, John Wiley & Sons, Incorporated, 2014
Work Placement	N/A

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Cultivation of Culture Cells to be Used in Toxicity Tests	
Week - 2		Obtaining and cultivation of primary culture cells	
Week - 3		Cultivation of cell lines	
Week - 4		Obtaining and cultivation of stem cells from different sources	
Week - 5		Cytotoxicity and Cell Proliferation Methods: MTT, MTS, XTT, WST assays	
Week - 6		ATP, Trypan blue, LDH assays	
Week - 7		Neutral red, Sulforodamine B, Alamar blue assays	
Week - 8		BrdU, Glucose-6 phosphate dehydrogenase, Resasurine, Picogreen assays	
Week - 9		Clonogenic assays; Genotoxicity Methods: Chromosome aberration assay	
Week - 10		Micronucleus assay	
Week - 11		COMET assay	
Week - 12		Sister chromatid exchange assay, γ-H2AX focus assay	
Week - 13		In Vitro Epithelial Barrier Models in Toxicity	

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 14		Use of Stem Cells in Toxicological Studies	

Learning Outcomes

#	Learning Outcome
1	Define cultivation of culture cells to be used in toxicity tests. Define obtaining and cultivation of primary culture Define cultivation of cell lines Define obtaining and cultivation of stem cells from different sources
2	Define cytotoxicity and cell proliferation methods. Define MTT, MTS, XTT, WST assays. Define ATP, Tyrpan Blue, LDH assays. Define Neutral red, Sulforodamine B, Alamar blue assays. Define BrdU, Glucose-6 phosphate dehydrogenase, Resasurine, Picogreen assays. Define chlonogenicity assay.
3	Define genotoxicity methods Define chromosome aberasion and Micronucleus assays. Define COMET, Sister chromatitis exchange, γ-H2AX focus assays.
4	Define in vitro epithelial barrier models in toxicity.
5	Define use of stem cells in toxicological studies.

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.