Course Syllabus

Code - Course Title	**CAM310 - Applications of Glass Technology II**
Course Type	VI. SEMESTER
Laboratory + Practice	2+2
ECTS	**4.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	DOÇ. DR. GÖKTUĞ GÜNKAYA

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	Shelby, J. E. (1997) Introduction to Glass Science and Technology. UK: The Royal Society of Chemistry.Stone, G. (1996) Firing Schedules for Glass. Melbourne: Halem, H. (1996) Glass Notes. Kent: Franklin Mills Press.
Work Placement	N/A

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Introduction; glass, glass age, kiln-working purpose, how to use the standard schedules, basis of the schedules	
Week - 2		History of Glass	
Week - 3		Kilns; Gas/electric, brick/fibre, frontloader/”top hat”, size/shape, fast/slow	
Week - 4		Controllers; ramp rate or actual time, number of stages, features, some consequences of digital control	
Week - 5		Basic Principles of Glass Firing; up phases, top temperature, crash cooling phase, annealing phase, down phases, typical firing schedule graph, sequence of events during firing	
Week - 6		Basic Principles of Glass Firing; up phases, top temperature, crash cooling phase, annealing phase, down phases, typical firing schedule graph, sequence of events during firing	
Week - 7		Firing Varibales; thickness of glass, form of glass, type of glass (annealing temperatures, down phase temperature settings),	
Week - 8		Firing Varibales; type of kiln (heating from one side or both sides), uneven heating and thermal mass, mould materials and their limitations, avoiding and inducing devitrification, advantages of reduced speed, advantages of maximum speed, the importance of records	
Week - 9		Physical and chemical properties of glass	

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 10		Optical properties of glass, chemical durability of glass	
Week - 11		Glass formation techniques	
Week - 12		Glass formation techniques	
Week - 13		Technical Considerations; nature of glass, colour in glass, surface tension, co-efficient of thermal expansion, viscosity, viscosity ranges.	
Week - 14		Technical Considerations; Annealing, toughening, low temperature fusing, span/temperature ratio, useful refractories, thermal shock, termal mass, float glass specifications.	

Learning Outcomes

#	Learning Outcome
1	Recognizes applied processes before and after glass melting process.
2	Determines furnace schedules oriented to relation between glass structure and thermal expansion in glasses.
3	Arranges thermal process according to thermal expansion by thermal shock resistance of glass.
4	Describes probable problems about thermal expansion, after glass melting and shaping.
5	explain relation between physical properties of glass and glass composition.
6	Interprets changes in density of glass according to glass compounds.
7	define chemical durability of glass according to compound.

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

AKTS Workload

Activity	Duration (Hour)	Count	Workload
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.