

阿南工業高等専門学校		開講年度	令和04年度 (2022年度)		授業科目	建設材料学
科目基礎情報						
科目番号	1555402			科目区分	専門 / 選択	
授業形態	講義			単位の種別と単位数	学修単位: 2	
開設学科	専門共通科目 (本科)			対象学年	5	
開設期	後期			週時間数	2	
教科書/教材						
担当教員	角野 拓真,吉村 洋					
到達目標						
1. Understand the classification, basic properties and standards of construction materials in general. And be able to explain these basic matters. 2. Understand the types, basic properties and characteristics of concrete. And be able to explain these basic matters. 3. Understand the classification, basic properties and standards of iron and steel, asphalt, polymer and timber. And be able to explain these basic matters.						
ルーブリック						
	Idea level of Attainment		Standard level of attainment		Minmum level of attainment	
Attainment Target 1	Understand and accurately describe the classification, standards and basic properties of construction materials		Understand and describe the classification, standards and basic properties of construction materials		Describe the classification, standards and basic properties of construction materials	
Attainment Target 2	Understand and describe the types and characteristics of concrete (cement, aggregates, admixture materials, etc.). And to be able to raise issues and propose applications.		Understand and describe the types and characteristics of concrete (cement, aggregates, admixture materials, etc.).		Describe the types and characteristics of concrete (cement, aggregates, admixture materials, etc.).	
Attainment Target 3	Understand and describe the types and characteristics of iron and steel, asphalt, polymer and timber. And to be able to raise issues and propose applications.		Understand and describe the types and characteristics of iron and steel, asphalt, polymer and timber.		Describe the types and characteristics of iron and steel, asphalt, polymer and timber.	
学科の到達目標項目との関係						
教育方法等						
概要	Engineers who design, construct and maintain structures that require the safety, serviceability and restorability need to acquire knowledge of construction materials. In the practice, it is needed to use construction materials according to the social demand, and consider the functionality and economically. This course is lecture-based classroom learning. The goal of this course is to obtain basic knowledge on main materials that is used construction projects, and enhance study habits.					
授業の進め方・方法	【Course hours 30hours+Final Exam+Self-study hours 60hours】 Reports are required as pre-study and post-study, because this course is an academic credit course.					
注意点	This course that is established as sub-major course of common to the department is important course of civil engineering that is obtained fundamental knowledge of construction materials. In order to learn about the wide variety of construction materials used in the infrastructure, it is important not to memorize individual items in isolation, but to relate them to the infrastructures that are around us. In addition, many of the matters are related to mechanics, electricity and chemistry, which will hopefully lead to the future.					
授業の属性・履修上の区分						
<input type="checkbox"/> アクティブラーニング		<input type="checkbox"/> ICT 利用		<input type="checkbox"/> 遠隔授業対応		<input type="checkbox"/> 実務経験のある教員による授業
授業計画						
		週	授業内容		週ごとの到達目標	
後期	3rdQ	1週	Guidance Civil Engineering Structures and Construction Materials		Understand the classification and basic properties of construction materials, and their relation to the civil engineering structures. And, the goal of this week is to be able to explain these basic matters.	
		2週	Civil Engineering Structures and Construction Materials		Understand the classification and basic properties of construction materials, and their relation to the civil engineering structures. And, the goal of this week is to be able to explain these basic matters.	
		3週	Basic Properties of Concrete		Understand the basic properties of concrete, and the goal of this week is to be able to explain these basic matters.	
		4週	Mechanical Properties of Concrete and its Characteristics		Understand mechanical properties of concrete and its characteristics, and the goal of this week is to be able to explain these basic matters.	
		5週	Mechanical Properties of Concrete and its Characteristics		Understand mechanical properties of concrete and its characteristics, and the goal of this week is to be able to explain these basic matters.	
		6週	Performance of Concrete and Mix Design		Understand the performance of concrete and method of mix design. And the goal of this week is to be able to explain these basic matters.	
		7週	Performance of Concrete and Mix Design		Understand the performance of concrete and method of mix design. And the goal of this week is to be able to explain these basic matters.	
		8週	Midterm Exam			
	4thQ	9週	Review of Midterm Exam Properties of Iron and Steel, and its characteristics		Understand the types, the chrematistics and the standard of iron and steel. And the goal of this week is to be able to explain these basic matters.	

		10週	Properties of Iron and Steel, and its characteristics	Understand the types, the chrematistics and the standard of iron and steel. And the goal of this week is to be able to explain these basic matters.
		11週	Properties of Asphalt, and its characteristics	Understand the types, the chrematistics and the standard of asphalt. And the goal of this week is to be able to explain these basic matters.
		12週	Properties of Asphalt, and its characteristics	Understand the types, the chrematistics and the standard of asphalt. And the goal of this week is to be able to explain these basic matters.
		13週	Properties of Porymer Materials, and its characteristics	Understand the types, the chrematistics and the standard of porymer materials. And the goal of this week is to be able to explain these basic matters.
		14週	Properties of Porymer Materials, and its characteristics	Understand the types, the chrematistics and the standard of porymer materials. And the goal of this week is to be able to explain these basic matters.
		15週	Properties of Timber and Stone, and its characteristics	Understand the types, the chrematistics and the standard of timber and stone. And the goal of this week is to be able to explain these basic matters.
		16週	(Final Exam) Review of Final Exam	

モデルコアカリキュラムの学習内容と到達目標

分類	分野	学習内容	学習内容の到達目標	到達レベル	授業週
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評価割合

	Regular Exam	Short Test	Portfolio	Presentation and Enthusiasm	Others	合計
総合評価割合	70	0	30	0	0	100
Basic competence	20	0	10	0	0	30
Profeesional competence	30	0	10	0	0	40
Cross-sectoral competence	20	0	10	0	0	30
	0	0	0	0	0	0