

Akashi College		Year	2022		Course Title	Mathematical Concepts
Course Information						
Course Code		4409		Course Category	General / Elective	
Class Format		Lecture		Credits	School Credit: 1	
Department		Architecture		Student Grade	4th	
Term		Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials						
Instructor		OMODA Yasuhiro				
Course Objectives						
(1) Understand the concepts of linear algebra and can solve various problems by acquiring calculation skills on matrices and vectors. (2) Understand the concepts of calculus, can solve various questions by acquiring calculation skills. (3) Acquire the ability to apply an abstract framework to specific issues. (4) Learn how to write exams appropriately.						
Students' level of achievement on each objective above will be examined through tests and the final exam.						
Rubric						
		Ideal Level		Standard Level		Unacceptable Level
Achievement 1		Fully understand the various concepts of linear algebra, and can fully solve various questions by acquiring sufficient calculation skills on matrices and vectors.		Understand the various concepts of linear algebra, and can solve various questions by acquiring sufficient calculation skills on matrices and vectors.		Do not understand the various concepts of linear algebra, and cannot solve various questions by acquiring sufficient calculation skills on matrices and vectors.
Achievement 2		Fully understand the concepts of calculus, can fully solve various questions by acquiring sufficient calculation skills.		Understand the concepts of calculus, and can solve various questions by acquiring calculation skills.		Do not understand the concepts of calculus, and cannot solve various questions as calculation skills is not acquired.
Achievement 3		Fully have the ability to apply an abstract framework to specific issues.		Have the ability to apply an abstract framework to specific issues.		Do not have the ability to apply an abstract framework to specific issues.
Assigned Department Objectives						
Teaching Method						
Outline		This course will review and do exercises on the mathematics learned at KOSEN. The goal of this course is to develop mathematical abilities by solving numerous of questions and to develop more advanced mathematics skills. In addition, it should be a revision for students who is preparing for the university entrance exam.				
Style		Classes will mainly involve lectures and practices.				
Notice		Students should identify themselves the areas of the subject they are going to need, research them, and advance their learning on their own outside of the class. Be aware that passive attitude towards the class will not be beneficial as preparation for a transfer examination. Students who miss 1/3 or more of classes will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning						
<input checked="" type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
2nd Semester	3rd Quarter	1st	Linear algebra 1		Can compute using elementary transformation.	
		2nd	Linear algebra 2		Can compute eigenvalues and eigenvectors.	
		3rd	Linear algebra 3		Understand and can determine primary independence.	
		4th	Linear algebra 4		Understand and can compute basis.	
		5th	Linear algebra 5		Can compute matrix representation.	
		6th	Linear algebra 6		Understand the concepts of linear algebra and can compute linear algebra.	
		7th	Various questions		Learn how to write exams appropriately.	
		8th	Midterm exam		Learn how to write exams appropriately.	
	4th Quarter	9th	One-variable calculus		Understand the integration of one-variable functions.	
		10th	Calculus of multivariable functions 1		Understand the differential of multivariable functions.	
		11th	Calculus of multivariable functions 2		Understand the integration of multivariable functions.	
		12th	Calculus of multivariable functions 3		Can solve questions with the calculus of multivariable functions.	
		13th	Calculus of multivariable functions 4		Can solve questions with the calculus of multivariable functions.	
		14th	Differential equations		Can solve simple first order linear differential equations. Can solve second order homogeneous linear differential equations with constant coefficients.	
		15th	Various questions		Learn how to write exams appropriately.	

		16th	Final exam	
Evaluation Method and Weight (%)				
	Examination			Total
Subtotal	100			100
Basic Proficiency	100			100
Specialized Proficiency	0			0
Cross Area Proficiency	0			0