

Toyama College		Year	2020	Course Title	力学 I
Course Information					
Course Code	0052		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Department of Maritime Technology		Student Grade	2nd	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	Homae Tomotaka				
Course Objectives					
1. Can explain unit system, significant figure, and scientific notation. 2. Can composite and decompose forces. 3. Can explain and determine moment of force. 4. Can explain moment of a couple. Can shift a point of action using a couple. 5. Can explain equilibrium. Can determine forces in equilibrium. 6. Can explain forces acting on a contact point. Can determine these forces in equilibrium. 7. Can determine forces acting on a simple truss. 8. Can explain center of gravity. Can determine position of center of gravity. 9. Can explain stability depending on position of center of gravity. 10. Can translate important technical terms in this area to English.					
Rubric					
	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)		Unacceptable Level of Achievement (Fail)	
Evaluation 1	Can explain unit system, significant figure, and scientific notation perfectly.	Can explain unit system, significant figure, and scientific notation.		Cannot explain unit system, significant figure, and scientific notation.	
Evaluation 2	Can composite and decompose forces quickly and accurately.	Can composite and decompose forces.		Cannot composite and decompose forces.	
Evaluation 3	Can explain and determine moment of force quickly and accurately.	Can explain and determine moment of force.		Cannot explain and determine moment of force.	
Evaluation 4	Can explain moment of a couple perfectly. Can shift a point of action using a couple quickly and accurately.	Can explain moment of a couple. Can shift a point of action using a couple.		Cannot explain moment of a couple. Cannot shift a point of action using a couple.	
Evaluation 5	Can explain equilibrium perfectly. Can determine forces in equilibrium quickly and accurately.	Can explain equilibrium. Can determine forces in equilibrium.		Cannot explain equilibrium. Cannot determine forces in equilibrium.	
Evaluation 6	Can explain forces acting on a contact point perfectly. Can determine these forces in equilibrium quickly and accurately.	Can explain forces acting on a contact point. Can determine these forces in equilibrium.		Cannot explain forces acting on a contact point. Cannot determine these forces in equilibrium.	
Evaluation 7	Can determine forces acting on a simple truss quickly and accurately.	Can determine forces acting on a simple truss.		Cannot determine forces acting on a simple truss.	
Evaluation 8	Can explain center of gravity perfectly. Can determine position of center of gravity quickly and accurately.	Can explain center of gravity. Can determine position of center of gravity.		Cannot explain center of gravity. Cannot determine position of center of gravity.	
Evaluation 9	Can explain stability depending on position of center of gravity perfectly.	Can explain stability depending on position of center of gravity.		Cannot explain stability depending on position of center of gravity.	
Evaluation 10	Can translate important technical terms to English and utilize it.	Can translate important technical terms in this area to English.		Cannot translate important technical terms in this area to English.	
Assigned Department Objectives					
MCCコア科目					
Teaching Method					
Outline	Lectures by the instructor.				
Style	Students are required to take notes of the contents on the white board in the class. A sheet of printed learning materials is distributed in every class. The object is clearly shown on the material. Some exercises, related to the lecture, will also be printed. Students are required to submit the answer before the deadline as homework. The answer is evaluated and discussed in the beginning of the following class for review.				
Notice	Required subject (training institution of ship officer) for licensed mariner of 3rd grade (engine) 3. Subjects related to engine (No.3) 3. Mechanics and fluid dynamics (3) Kinds of stress generated in materials and relation between stress and strain The recognition of credit requires 60 points or more rating. If obtained evaluation points are less than 60, the student can take an additional exam upon request. The final point is 60, if the student is permitted to acquire the credit by the result of the additional exam.				
Course Plan					
		Theme		Goals	

1st Semester r	1st Quarter	1st	Orientation. SI unit system and gravitational unit system. Significant figures, and scientific notation.	Understanding of the evaluation. Can explain SI unit system and gravitational unit system. Can convert values between them. Can express values in accordance with significant figures, and scientific notation.
		2nd	Three elements of force, vector, and scalar. Coposition of forces by drawing a figure. Composition of forces on a rectangular coordinate system.	Can explain three elements of force, vector, and scalar. Can composite forces by drawing a figure. Can composition of forces on a rectangular coordinate system.
		3rd	Decomposigion of a force by drawing a figure. Decomposition of a force on a rectangular coordinate system.	Can decomposite a force by drawing a figure. Can decomposition a force on a rectangular coordinate system.
		4th	Moment of force.	Can explain and determine a momen of force.
		5th	Moment of a couple Shift of a point of action using a couple.	Can explain and determine a moment of a couple. Can shift a point of action using a couple.
		6th	Coposition of forces having different points of action, part 1.	Can Coposit parallel forces having different points of action.
		7th	Coposition of forces having different points of action, part 2.	Can Coposit unparallel forces having different points of action.
		8th	Midterm exam	Examination of contents in 1st - 7th week.
	2nd Quarter	9th	Return of marked exam papers and comments. Equilibrium of forces.	Receive the marked exam papers. Can solve unsolved problems. Can explain equilibrium. Can determine forces in equilibrium.
		10th	Forces acting on contact point, part 1.	Can explain forces acting on a contact point. Can determine these forces in equilibrium.
		11th	Forces acting on contact point, part 2.	Can determine forces acting on a complicated contact point in equilibrium.
		12th	Truss.	Can determine forces acting on a simple truss.
		13th	Center of gravity. Position of center of gravity in a simple geometry.	Can explain center of gravity. Can determine position of center of gravity in a simple geometry.
		14th	Position of center of gravity in a complicated geometry.	Can determine position of center of gravity in a complicaed geometry, which can be divided into simple geometries.
		15th	Final exam	Examination of contents in 9th - 14th week.
		16th	Return of marked exam papers and comments. Class evaluation questionnaire.	Receive the marked exam papers. Can solve unsolved problems. Answer the class evaluation questionnaire.
Evaluation Method and Weight (%)				
	Examination	Homework	Total	
Subtotal	70	30	100	
Basic ability	0	0	0	
Technical ability	70	30	100	