

<<Last Updated:2022/01/01>>

## Course Schedule Information

Course Code	881266
Semester	Fall and Winter Term
Day and Period	Mon2
Course Name (Japanese)	応用理工学入門
Room	
Course Name	Introduction of Mechanical, Materials and Manufacturing Science
Capacity	0
Course Numbering Code	88INES9U100
Required/Optional	
Credits	2.0
Student Year	1,2,3,4,5,6
Field	
Instructor	OSUKA Koichi
Course of Media Class	Not Applicable

※About Course of Media Class

"Course of Media Class" are classes in which more than half of the classes are held in places other than classrooms by making advanced use of various media.

Undergraduate students can include up to 60 credits in media class course as requirements for graduation.

Even if this is not the case, we may hold classes using the media.

## Detailed Syllabus Information

Course Name	Introduction of Mechanical, Materials and Manufacturing Science	
Language of the Course	English	
Type of Class	Lecture Subject	
Course Objective	The aim of this course is to provide foreign students with the overview of the Division of Mechanical, Materials and Manufacturing Science from various representative topics.	
Learning Goals	Students can master the overview of the Division of Mechanical, Materials and Manufacturing Science.	
Requirement / Prerequisite		
Class Plan	Week 1 Explanation of this lecture Week 2 Introduction of Design Engineering Week 3 Introduction to Nonlinear Control and Robotics(1) Week 4 Introduction to Nonlinear Control and Robotics(2) Week 5 Introduction to Computational Imaging Week 6 Introduction to LiVEMechX Week 7 Fundamentals of electrical energy conversion devices for sustainable society and future directions on R&Ds Week 8 Computer simulation of multiphase flows with particles (1) Week 9 Computer simulation of multiphase flows with particles (2) Week 10 Materials engineering as a means of solving environmental problems Week 11 Thermoelectric conversion materials Week 12 Materials and Manufacturing Processes Week 13 Systems Engineering for Manufacturing Week 14 Content Materials in our Life and their Production Processes Week 15 Content Creation of New Materials by Additive Manufacturing (3D Printing)	
	1st	Title:Introduction
		Explanation of this lecture

		Instructor : Prof. Osuka
	<b>2nd</b>	Title:Design Engineering
		Introduction of Design Engineering
		Instructor : Assoc. Prof. Nomaguchi
	<b>3rd</b>	Title:Control Engineering
		Introduction to Nonlinear Control and Robotics(1)
		Instructor : Prof. Ishikawa
	<b>4th</b>	Title:Robot Engineering
		Introduction to Nonlinear Control and Robotics(2)
		Instructor : Prof. Ishikawa
	<b>5th</b>	Title:Imaging Engineering
		Introduction to Computational Imaging
		Instructor : Assoc.Prof. Mizutani
	<b>6th</b>	Title:Bio-MEMS
		Introduction to LiVEMechX
		Instructor : Proc. Morishima
	<b>7th</b>	Title:Energy Engineering
		Fundamentals of electrical energy conversion devices for sustainable society and future directions on R&Ds
		Instructor : Prof. Tsushima
	<b>8th</b>	Title:Multi Physics
		Computer simulation of multiphase flows with particles (1)
		Instructor : Senior Lecturer Washino
	<b>9th</b>	Title:Multi Physics
		Computer simulation of multiphase flows with particles (2)
		Instructor : Senior Lecturer Washino
	<b>10th</b>	Title:Materials engineering
		Materials engineering as a means of solving environmental problems
		Instructor : Assoc.Prof. Katsuyama
	<b>11th</b>	Title:Materials engineering
		Thermoelectric conversion materials
		Instructor : Assoc.Prof. Katsuyama
	<b>12th</b>	Title:Materials and Manufacturing
		Materials and Manufacturing Processes
		Instructor : Assoc. Prof. Tstsumi
	<b>13th</b>	Title:Systems Engineering
		Systems Engineering for Manufacturing
		Instructor : Assoc. Prof. Iwata
	<b>14th</b>	Title:Materials Design and Processing
		Content Materials in our Life and their Production Processes
		Instructor : Prof. Koizumi
	<b>15th</b>	Title:Materials Design and Processing
		Creation of New Materials by Additive Manufacturing (3D Printing)
		Instructor : Prof. Koizumi
<b>Independent Study Outside of Class</b>	Sufficient reviews are expected every lesson.	
<b>Textbooks</b>	To be distributed from each instructor.	
<b>Reference</b>		

<b>Grading Policy</b>	Participation and attitude in the class: 40%   Report paper and final examination: 60%
<b>Other Remarks</b>	
<b>Special Note</b>	Professors for each lecture ask you to submit a report paper. The subject of the report paper will be announced in each lecture. The deadline of the submission of the report paper is at the beginning of the next lecture. The report is to be submitted to Collaboration and Learning Environment (CLE) system.
<b>Office Hour</b>	
<b>Keywords</b>	
<b>Messages to Prospective Students</b>	

## Instructor(s)

<b>Instructor Name</b>	<b>Name (hiragana)</b>	<b>Affiliation, Title, Course</b>	<b>Office</b>	<b>Extension</b>	<b>Fax</b>	<b>E-mail</b>
Koichi Osuka	おおすか こ ういち	Mechanical Engineering/Professor	06-6879-4878	4878	06-6879-4878	osuka@mech.eng.osaka-u.ac.jp

## Cautions for Students

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