

基本情報

時間割コード/Course Code	
開講区分(開講学期)/Semester	Fall and Winter Term
曜日・時間/Day and Period	Wed3
開講科目名/Course Name (Japanese)	ロボット機構学への招待
開講科目名(英)/Course Name	Introduction to robot mechanisms
教室/Room	
定員/Capacity	
ナンバリング/Course Numbering Code	
必修・選択/Required/Optional	
授業形態/Type of Class	講義科目
単位数/Credits	2
年次/Student Year	
分野/Field	
担当教員/Instructor	多田 隼 建二郎, 渡辺 将広
メディア授業科目/Course of Media Class	

※メディア授業科目について

授業回数半数以上を、多様なメディアを高度に利用して教室等以外の場所で行う授業を「メディア授業科目」としています。

学部学生が「メディア授業科目」を卒業要件に算入できるのは60単位が上限です。

なお、非該当の場合であっても、メディアを利用した授業を実施する場合があります。

詳細情報

授業サブタイトル/Course Subtitle	Introduction to robot mechanisms
開講言語/Language of the Course	日本語・英語/Japanese, English
学習方法/Learning Method	聴講・視聴
授業の目的と概要/Course Objective	∕The course will explain the process of creating the basic principles of robot mechanisms and the process of realizing them in actual machines, using examples, and will also cover the method of generating ideas.
履修条件・受講条件/Requirement / Prerequisite	特に無し/Nothing in particular
出欠席及び受講に関するルール/Attendance and Student Conduct Policy	特に無し/Nothing in particular
教科書・指定教材/Textbooks	特に無し/Nothing in particular
参考図書・参考教材/Reference	実用メカニズム事典, 実際の設計, など
成績評価に関する補足情報/Additional Information on Grading	レポート内容のオリジナル性を重視する。∕Emphasis is placed on the originality of the report content.
合理的配慮/Reasonable Accommodation	
特記事項/Special Note	特に無し/Nothing in particular
オフィスアワー/Office Hour	特に無し/Nothing in particular
実務経験のある教員による授業科目/Course conducted by instructors with practical experience	

成績評価詳細情報

学習目標(1)/Learning Goal(1)	To be able to learn how to design robot mechanisms from basic to application.
学習目標(2)/Learning Goal(2)	To learn how to design the actual robot mechanism from basic to detail.
学習目標(3)/Learning Goal(3)	To be able to learn about the process of parts and assembly of the actual robot mechanism.
学習目標(4)/Learning Goal(4)	Students can empirically understand the systematization of science through discussions and presentations on how to add adaptability.
学習目標(5)/Learning Goal(5)	Synthesize the above to learn about mechanisms and their adaptation methods.

学習目標/Learning Goal	評価方法			
	レポート・論文	発表	学習への参加度	その他(最終レポート)
学習目標(1)/Learning Goal(1)	○		○	○
学習目標(2)/Learning Goal(2)	○		○	○
学習目標(3)/Learning Goal(3)	○	○	○	○
学習目標(4)/Learning Goal(4)		○	○	○
学習目標(5)/Learning Goal(5)			○	○
評価割合(%)/Grade Breakdown	15%	15%	10%	60%

授業計画

回/Time	題目/Title	内容/Content	授業時間外学習/Independent Study Outside of Class
第1回	Introduction	Overview of the class and how to proceed, Self-introduction of students	Read the references to be introduced in the class.
第2回	Fundamentals of Robot Mechanisms	Explanation and Demonstration of Fundamentals of Robot Mechanisms	Read the references to be introduced in the class.
第3回	Mobile Robot Mechanisms	Explanation and Demonstration of Mobile Robot Mechanisms	Read the references to be introduced in the class.
第4回	Wheeled Robot Mechanisms	Explanation and Demonstration of Wheeled Robot Mechanisms	Read the references to be introduced in the class.
第5回	Crawler type moving Mechanisms	Explanation and Demonstration of Crawler type moving Mechanisms	Read the references to be introduced in the class.
第6回	Power Transmission Mechanisms for robots	Explanation and Demonstration of Power Transmission Mechanisms for robots	Read the references to be introduced in the class.

第7回	Robot Hand Mechanisms	Explanation and Demonstration of Robot Hand Mechanisms	Read the references to be introduced in the class.
第8回	Soft Robot Mechanisms	Explanation and Demonstration of Soft Robot Mechanisms	Read the references to be introduced in the class.
第9回	Edible and Biodegradable Robotic Mechanisms	Explanation and Demonstration of Edible and Biodegradable Robotic Mechanisms	Read the references to be introduced in the class.
第10回	Robotic Mechanisms for Medical Devices	Explanation and Demonstration of Robotic Mechanisms for Medical Devices	Read the references to be introduced in the class.
第11回	Biological Robotic Mechanisms	Explanation and Demonstration of Biological Robotic Mechanisms	Read the references to be introduced in the class.
第12回	Intelligence-containing robotic systems	Explanation and Demonstration of Intelligence-containing robotic systems	Read the references to be introduced in the class.
第13回	Environmental Robot System	Explanation and Demonstration of Environmental Robot System	Read the references to be introduced in the class.
第14回	Summary and supplemental explanation	Explanation and Demonstration of Summary and supplemental explanation	Read the references to be introduced in the class.
第15回	Final Discussion	Final Discussion for the Future Robotics	Read the references to be introduced in the class.

**授業担当教員**

教員氏名 / Instructor Name	ふりがな / Name (hiragana)	所属・職名・講座名 / Affiliation, Title, Course	居室 / Office	内線 / Extension	e-mail / E-mail
多田 隈 建二郎	ただくま けんじろう	基礎工学研究科	D 4 4 2	6355	kenjiro.tadakuma@pumech.sys
渡辺 将広	わたなべ まさひろ	基礎工学研究科	D 4 4 1	6355	watanabe.masahiro.es@osaka-u.ac.jp