

[Graduate School of Engineering]

	授業科目名	担当教員名	開講学期 ※プルダウン から選択	開講期間 ※集中講義もしくは学期中に集中して行われる場合のみご記入下さい。	使用言語	開講曜日 ※プルダウン から選択	時限 ※プルダウン から選択	開講曜日及び時限 ※集中講義の場合のみ、この欄にご記入ください。	キャンパス ※プルダウン から選択	単位数 ※プルダウン から選択	授業の形式 ※プルダウン から選択	対象学生 ※所属部局の制限、学年の制限、語学能力等、特記事項がある場合ご記入ください。	その他 特記事項	シラバス公開URL ※URLが無い場合は、貴部局内で周知しているシラバス（電子媒体）を添付してください。
	Course Title	Lecturer	Term	Term *intensive courses only	Language	Course Day	Course Period	Course Day&Course Period *Intensive courses only	Campus	Credits	Course Structure	Course Requirement	Remarks	Syllabus
1	Analytical Physical Chemistry of Polymers	Keiji Tanaka & Hisao Matsuno	First Semester (Apr-Sep)		English	Mon.	Period 3		Ito	2 credits	Lecture(講義)	N/A	N/A	https://ku-portal.kyushu-u.ac.jp/campusweb/slbsskgr.do?clearAccessData=true&conteam=slbsskgr&kjnmnNo=7
2	Organic Electronics and Photonics	Chihaya Adachi	Second Semester (Oct-Mar)		English	Wed.	Period 3		Ito	2 credits	Lecture(講義)			
3	Electrochemical system engineering	Gen Inoue	Second Semester (Oct-Mar)		English	Wed.	Period 1		Ito	2 credits	Lecture(講義)			
4	Advanced Materials Science	Yoshihiro Yamazaki	First semester (Apr-Sep)		English	Mon.	Period 3		Ito	2 credits	Lecture(講義)			
5	Fracture of Materials	Masaki Tanaka	Second semester (Oct-Mar)		English				Ito	2 credits	Lecture(講義)			
6	Design of Concrete Structure	H. Hamada	First Semester (Apr-Sep)		English	Tue.	Period 2		Ito	2 credits	Lecture(講義)	See the website		
7	Advanced Geotechnical Modelling and its Application	N. Yasufuku	Second Semester (Oct-Mar)		English				Ito	2 credits	Lecture(講義)	See the website		
8	Risk Management in Natural Disaster Prevention	G. Chen	First Semester (Apr-Sep)		English	Thu.	Period 2		Ito	2 credits	Lecture(講義)	See the website		
9	Urban Development Project	K. Tsukahara	Second Semester (Oct-Mar)		English				Ito	2 credits	Lecture(講義)	See the website		

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10	Advanced Steel Structure	S. Kainuma	Second Semester (Oct-Mar)	English				Ito	2 credits	Lecture(講義)	See the website		
11	River Engineering	Y. Shimatani	Summer Quarter (second quarter : Jun.-Aug.)	English	Tue.		Period 4-5	Ito	2 credits	Lecture(講義)	See the website		
12	Environmental Planning	H. Nakayama	First Semester (Apr-Sep)	English	Mon.	Period 3		Ito	2 credits	Lecture(講義)	See the website		
13	Groundwater Environmental Systems	Y. Hiroshiro	First Semester (Apr-Sep)	English	Wed.	Period 2		Ito	2 credits	Lecture(講義)	See the website		
14	Advanced Numerical Analysis	M. Asai	First Semester (Apr-Sep)	English	Mon.	Period 1		Ito	2 credits	Lecture(講義)	See the website		
15	Advanced Ocean and Coastal Engineering	N. Hashimoto	Second Semester (Oct-Mar)	English				Ito	2 credits	Lecture(講義)	See the website		
16	Advanced Structural Analysis	Y. Sonoda	First Semester (Apr-Sep)	English	Mon.	Period 2		Ito	2 credits	Lecture(講義)	See the website		
17	Urban Engineering & Economics	S. Managi	Spring Quarter (first quarter : Apr.-Jun.)	English	Tue.		Period 1-2	Ito	2 credits	Lecture(講義)	See the website		
18	Fracture Mechanics	Hiroshi Noguchi	First semester (Apr-Sep)	English	Wed.	Period 5		Ito	2 credits	Lecture(講義)	N/A	N/A	

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19	Reactive Gas Dynamics Toshiaki KITAGAWA Hiroaki WATANABE	First semester (Apr-Sep)		English	Mon.	Period 4		Ito	2 credits	Lecture(講義)	N/A	N/A	
20	Computational Intellitence Kazuo KIGUCHI	First semester (Apr-Sep)		English	Tue.	Period 2		Ito	2 credits	Lecture(講義)	N/A	N/A	
21	Robotics Yamamoto Motoji	Second semester (Oct-Mar)	TBD	English		Period 4		Ito	2 credits	Lecture(講義)	N/A	N/A	
22	Theory of Plasticity SHINAGAWA Kazunari	Second semester (Oct-Mar)	TBD	English				Ito	2 credits	Lecture(講義)	N/A	N/A	
23	Gas Dynamics Hideo Mori (fluids)	Second semester (Oct-Mar)	TBD	English				Ito	2 credits	Lecture(講義)	N/A	N/A	
24	Clean Energy Technologies TBD	Intensive Course	TBD	English			TBD	Ito	2 credits	Lecture(講義)	N/A	N/A	
25	MaterialsStrength Kaneaki TSUZAKI	Second semester (Oct-Mar)		English				Ito	2 credits	Lecture(講義)	N/A	N/A	
26	Heat and Mass Transfer (熱物質移動) Y. Takata, J. Cannon	First semester (Apr-Sep)		English	Mon.	Period 2		Ito	2 credits	Lecture(講義)	N/A	N/A	
27	Fuel Cell Engineering Kohei ITO 等	Second semester (Oct-Mar)	TBD	English				Ito	2 credits	Lecture(講義)	N/A	N/A	

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28	Hydrogen Production and Storage	Hisao MATSUNAGA, Hiroshige MATSUMOTO, Hai-Wen LI	Second semester (Oct-Mar)	TBD	English			Ito	2 credits	Lecture(講義)	N/A	N/A	
29	High-Pressure Gas Safety Engineering	Kohei ITO 等	Intensive Course	TBD	English		TBD	Ito	2 credits	Lecture(講義)	N/A	N/A	
30	Advanced Energy Engineering II	J Sugimura等	Intensive Course	TBD	English		TBD	Ito	2 credits	Lecture(講義)	N/A	N/A	
31	Advanced Energy Engineering I	K. Sasaki等	Intensive Course	TBD	English		TBD	Ito	2 credits	Lecture(講義)	N/A	N/A	
32	Hydrogen Energy Engineering	Kohei ITO 等	Second semester (Oct-Mar)	TBD	English			Ito	2 credits	Lecture(講義)	N/A	N/A	https://ku-portal.kyushu-u.ac.jp/campusweb/slbsskgr.do?clearAccessData=true&conteam=slbsskgr&kjnmnNo=7
33	Reusable Launch Vehicle Engineering	Shigeru ASO	First semester (Apr-Sep)		English	Mon.	2	Ito	2 credits	Lecture(講義)			See the attachment
34	Re-Entry Dynamics	Shigeru ASO	Second semester (Oct-Mar)		English			Ito	2 credits	Lecture(講義)			See the attachment
35	Nuclear Fuel Engineering	Kazuya IDEMITSU	Second semester (Oct-Mar)		English	Thu.	Period 2	Ito	2 credits	Lecture(講義)	for graduate students		https://ku-portal.kyushu-u.ac.jp/campusweb/slbsskgr.do?clearAccessData=true&conteam=slbsskgr&kjnmnNo=7

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36 Practical Environmental Engineering(CL3)	Wei Liu Kazuhiro HARA Hirotaka OKABE Kazuuya IDEMITSU Yoshinari HIROSHIRO Yasuhiro MITANI Takayuki SHIMAOKA Hirofumi NAKAYAMA	Second semester (Oct-Mar)		English	Fri.	Period 2		Ito	2 credits	Lecture(講義)	for graduate students		See the attachment
37 Microscopic Aspects of Energy Science and Engineering(CL5)	Yusuke UOZOMI, Keisuke MAEHATA, Syo MATSUMURA, Kazuhiro YASUDA, Yaohiro INAGAKI, Hideaki MATSUURA, Nozomu FUJIMOTO Koji MORITA, Satoru TANAKA, Tatsuya KAWAE, Anton VISIKOVSKIY, Kazuhiro HARA, Hirotaka OKABE, Yoshiki HIDAHA	First semester (Apr-Sep)		English	Wed.	Period 2		Ito	2 credits	Lecture(講義)	for graduate students		See the attachment

Course Title 授業科目名	Reusable Launch Vehicle Engineering 宇宙往還機工学
Course Category 授業科目区分	Advanced Subject
Students Admitted 授業対象学生	International Master's Course in Department of Aeronautics and Astronautics
Course Code 授業科目コード	IM 1707
Course Description 講義題目	
Course Type and Schedule 授業方法及び開講学期	Regular Lectures, Spring Semester
Credits 単位数	2
Instructor 担当教員名	Professor Shigeru ASO (3050, aso@aero.kyushu-u.ac.jp)
Prerequisite 履修条件	Undergraduate level of Fluid Dynamics and Thermodynamics
Course Outline 授業の概要	
General Course Objectives 全体の教育目標	Students will gain understanding overview and fundamental articles on Reusable Launch Vehicles
Specific Course Objectives 個別の学習目標	The students will gain understanding in: 1) Background and history of development of Reusable Launch Vehicles 2) Vision for development of Reusable Launch Vehicles 3) Fundamental knowledge for high speed flight
Course Plan 授業計画	1. Background and history of development of Reusable Launch Vehicles 2. Vision for development of Reusable Launch Vehicles 3. Reusable Launch Vehicles of SSTO and TSTO 4. Overview of space shuttle 5. Sub-system of Reusable Launch Vehicles 6. Hypersonic aerodynamics and aerodynamic heating 7. Technical subjects of next generation Reusable Launch Vehicles 8. Several topics of Reusable Launch Vehicles
Keywords キーワード	RLV, hypersonic flow, space plane, space transportation system
Method of Instruction 授業の進め方	Throughout the course the teacher will explain overview and fundamental articles on Reusable Launch Vehicles.
Text and References 教科書及び参考図書	Reference books will be introduced during the course.
Office Hours 学習相談	Office Hours will be announced in the lecture
Grading 試験・成績評価の方法	Assignments 20% Final examination 80%
Notes その他	

Course Title 授業科目名	Re-Entry Dynamics 再突入力学
Course Category 授業科目区分	Advanced Subject
Students Admitted 授業対象学生	International Master's Course in Department of Aeronautics and Astronautics
Course Code 授業科目コード	IM 17078
Course Description 講義題目	
Course Type and Schedule 授業方法及び開講学期	Regular Lectures, Autumn Semester
Credits 単位数	2
Instructor 担当教員名	Professor Shigeru ASO (3050, aso@aero.kyushu-u.ac.jp)
Prerequisite 履修条件	Undergraduate level of Fluid Dynamics and Thermodynamics
Course Outline 授業の概要	
General Course Objectives 全体の教育目標	Students will gain understanding fundamental articles on Hypersonic Aerodynamics and High Temperature Thermodynamics
Specific Course Objectives 個別の学習目標	The students will gain knowledge of: 1) Hypersonic Aerodynamics 2) High Temperature Thermodynamics
Course Plan 授業計画	1. Theory of Aerodynamic Heating 2. Importance of High Temperature Gas 3. Thermodynamics of chemically reacting gas 4. Properties of aerothermodynamics
Keywords キーワード	RLV, hypersonic flow, space plane, re-entry, High Temperature Thermodynamics
Method of Instruction 授業の進め方	Throughout the course the teacher will explain overview and fundamental articles on Hypersonic Aerodynamics and High Temperature Thermodynamics
Text and References 教科書及び参考図書	Reference books will be introduced during the course.
Office Hours 学習相談	Office Hours will be announced in the lecture
Grading 試験・成績評価の方法	Assignments 20% Final examination 80%
Notes その他	

8.3 CL 3: INTERNATIONAL ENVIRONMENTAL SYSTEM ENGINEERING III

-Practical Environmental Engineering-

Class Schedule : Friday, 10:30-12:00

Class : International Special Course

Place : West Zone CE-40 2F (Ito Campus)

Number	Day	Contents
3	Oct 20 (<i>Lecture</i>) Nov 17 (<i>Lecture</i>)	Disposal of Radioactive Wastes and their Risk by Professor Kazuya IDEMITSU
5	Oct 27 Nov 10 (* <i>Lecture & Practice</i>)	Geographic Information System (GIS) by Professor Yasuhiro MITANI * <room: W2-1106>
6	Nov 24 (* <i>Tour</i>) 10:15-17:00	Urban Metabolism: Sewage Treatment and Solid Waste Management in Japan by Professor Takayuki SHIMAOKA and Associate Professor Hirofumi NAKAYAMA * Assembly at rotary under west No.3 building
1	Dec 1 (<i>Lecture</i>) Dec 8 (* <i>Tour</i>)	Nuclear energy in Japan by Associate Professor Wei LIU * The tour bus will leave Ito Campus around 10:30 and return around 17:00.
2	Feb 2 (<i>Lecture</i>) Dec 22 (* <i>Tour</i>)	New Functional Materials and Technologies for Solving Environmental Problems by Professor Kazuhiro HARA and Associate Professor Hirotaka OKABE * The tour bus will leave Ito Campus Rotary around 13:30 and return around 17:00.
4	Jan 15 (Mon.) (<i>Lecture</i>) Jan 19 (* <i>Tour</i>)	Groundwater Environment and Water Resources Management by Associate Professor Yoshinari HIROSHIRO * Tour will be held on Friday afternoon.
	Dec 15, Jan 26, Feb 9	Occasional dates

CL3: INTERNATIONAL ENVIRONMENTAL SYSTEM ENGINEERING III
-PRACTICAL ENVIRONMENTAL ENGINEERING-

Contents

1. Nuclear Energy in Japan

Lecturer: Associate Professor Wei LIU

Topic: Current status of nuclear energy and policy in Japan is introduced. Environmental and security aspects of nuclear energy are also presented.

Tour: Genkai Energy Park of Kyushu Electric Power Company

2. New Functional Materials and Technologies for Solving Environmental Problems

Lecturers: Professor Kazuhiro HARA and
Associate Professor Hirotaka OKABE

Topic: Research on new functional materials and technologies for solving environmental problems.

Tour: Saga Light Source

3. Disposal of Radioactive Wastes and their Risk

Lecturer: Professor Kazuya IDEMITSU

Topic: This lecture gives information about classification, treatment and disposal methods of radioactive wastes. Basic knowledge of radiation effects for human being is also included.

4. Groundwater Environment and Water Resources Management

Lecturer: Associate Professor Yoshinari HIROSHIRO

Topic: Overview of groundwater environment and present water resources in Japan are introduced.

Tour: Desalination plant facility (Fukuoka district waterworks agency) or Water distribution control center (Fukuoka waterworks bureau)

5. Geographic Information System (GIS)

Lecturer: Professor Yasuhiro MITANI

Topic: This lecture is to master about the operation method the GIS software (ArcGIS) and to introduce the application of GIS for the environmental problems. The contents of this lecture include introduction of the basic concept of GIS. Some specific GIS applications in civil engineering, mining engineering, and environmental engineering are also introduced.

Practice: Introduction of GIS (ArcGIS) <room: W2-1106>

6. Urban Metabolism: Sewage Treatment and Solid Waste Management in Japan

Lecturers: Professor Takayuki SHIMAOKA and
Associate Professor Hirofumi NAKAYAMA

Topic: History and present situation of sewage treatment and solid waste management in Japan are presented. The most up-to-date technical system of sewage and solid waste management are introduced.

Tour: Sewage treatment plant and landfills site in Fukuoka City

*** Note:** This class includes special 'tours' relevant to topics. Some tours would last until late afternoon. The present schedules are tentative, and new date and time will be announced in advance if changed.

8.5 CL5: INTERNATIONAL ENVIRONMENTAL SYSTEM ENGINEERING V

-Microscopic Aspects of Energy Science and Engineering-

Class Schedule : Wednesday, 10:30-12:00

Course : International Special Course

Place : West Zone CE-40 2F (ITO CAMPUS)

Number	Day	Contents
1	Apr 11	Nuclear Physics and Electromagnetic Instrumentation by Professor Nobuo IKEDA
1	Apr 18	Nuclear Physics and Electromagnetic Instrumentation by Associate Professor Yusuke UOZUMI
2	Apr 25	Radiation Physics and Measurements by Associate Professor Keisuke MAEHATA
2	May 2	Radiation Physics and Measurements by Associate Professor Naoko IYOMOTO
3	May 9	Radiation Induced Phenomena in Condensed Matter by Associate Professor Kazuhiro YASUDA
3	May 16	Radiation Induced Phenomena in Condensed Matter by Associate Professor Kazuhiro YASUDA
4	May 23	Nuclear Fuel Engineering by Associate Professor Yaohiro INAGAKI
5	May 30	Nuclear Reactor Physics and Fusion Energy Science 1: Nuclear Power Reactor Systems by Professor Nozomu FUJIMOTO
5	Jun 6	Nuclear Reactor Physics and Fusion Energy Science 2: Development of Nuclear Fusion Energy by Associate Professor Hideaki MATSUURA
6	Jun 13	Fast Reactor Engineering by Professor Koji MORITA
7	Jun 20	Condensed Matter Physics by Associate Professor Tatsuya KAWAE
8	Jun 27	Applied Physics by Professor Kazuhiro HARA
8	Jul 4	Applied Physics by Professor Hiroataka OKABE and Assistant Professor Yoshiki HIDAKA
	Jul 11,18	Occasional dates

CL5: INTERNATIONAL ENVIRONMENTAL SYSTEM ENGINEERING V

-MICROSCOPIC ASPECTS OF ENERGY SCIENCE AND ENGINEERING-

Contents

1. Applied Nuclear Physics

Lecturers: Professor Nobuo IKEDA, Associate Professor Yusuke UOZUMI

Topic: Concepts of Nuclear Physics are introduced. Experimental techniques of nuclear reaction are explained. Current topics of nuclear reaction data and particle accelerators are described.

2. Radiation Physics and Measurements

Lecturers: Associate Professor Keisuke MAEHATA, Associate Professor Naoko IYOMOTO

Topic: Radiation physics and particle detector are explained. Current topics of high energy particle physics for energy science are described.

3. Radiation Induced Phenomena in Condensed Matter

Lecturer: Associate Professor Kazuhiro YASUDA

Topic: Radiation effects on condensed matter are described in terms of production of lattice defects and their dynamic behavior. The lecture covers also advanced transmission electron microscopy as a relevant experimental technique for this subject.

4. Nuclear Fuel Engineering

Lecturer: Associate Professor Yaohiro INAGAKI

Topic: Concepts of nuclear fuel and nuclear fuel cycle are introduced. Current topics of nuclear fuel improvement and safety are described.

5. Nuclear Reactor Physics and Fusion Energy Science

Lecturers: Professor Nozomu FUJIMOTO, Associate Professor Hideaki MATSUURA

Topic: Concepts of nuclear power reactors and engineered safety systems are introduced. Basic principles of fusion energy utilization and the present status of R&D are explained.

6. Fast Reactor Engineering

Lecturer: Professor Koji MORITA

Topic: Fast reactor engineering is introduced in terms of thermal hydraulics and safety. Some current topics of fast reactor development are also presented.

7. Microscopic View of Condensed Matter

Lecturer: Associate Professor Tatsuya KAWAE

Topic: Some current topics of condensed matter physics are theoretically and/or experimentally explained from a microscopic viewpoint.

8. Applied Physics

Lecturers: Professor Kazuhiro HARA, Associate Professor Hirotaka OKABE,
Assistant Professor Yoshiki HIDAKA

Topic: Current topics of applied physics are explained selected from
physics of some technologies.

Department of Earth Resources Engineering

http://www.mine.kyushu-u.ac.jp/english/info_daigakuin.html