

Course Description

UEC Exchange program
Japanese University Studies in Science
and Technology (JUSST)

Fall Semester, 2026

International Education Center
The University of Electro-Communications



国立大学法人

電気通信大学



UEC JUSST Program Course Description

Japanese University Studies in Science and Technology (JUSST)

International Educational Center (IEC)

The University of Electro-Communications

1-5-1 Chofugaoka, Chofu-shi, 182-8585

Tokyo, Japan

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JUSST Program Course Requirements

	Subject	1 st Semester	2 nd Semester
CORE SUBJECTS	LAB WORK Research / Project (Required for JUSST student)	[UNDERGRADUATE STUDENTS] Individual Study Project under the supervision of UEC faculty member. Minimum 8 hours/week 5 Credits/one academic year (2 Credits/one semester)	
		[GRADUATE STUDENTS] Independent Research Project under the supervision of UEC Faculty member. Minimum 8 hours/week 6 Credits/one academic year (3 Credits/one semester)	
	Academic Skills I	2 hours/week (2 Credits)	–
	Academic Skills II		
	Academic Skills III	–	2 hours/week (2 Credits)
	Japanese Language	Elementary / Intermediate / Advanced * 4 - 14 hours/week (2 - 7 Credits)	
	Science and Engineering Subjects (ELECTIVE)	[UNDERGRADUATE STUDENTS]	
		Need to pass 3 subjects at minimum **	Need to pass 2 subjects at minimum **
		[GRADUATE STUDENTS] Need to pass 3 subjects at minimum ** in <i>One Academic Year</i>	
		Electronic Experiment Lab. 4 hours/week (2 Credits) Required for all Undergraduate Students Only offered in the FALL Semester	
FREE ELECTIVE	Preparation for Oversea Study	2 hours/week (2 Credits) Offered in the SPRING Semester only	
	English for Intercultural Communication		
	Preparation for Graduate School	2 hours/week (2 Credits) Offered in the FALL Semester only	
	Innovative and Global Leadership Skills (IGLS)		
	Sports Classes	–	2 hours/week (1 Credit)

*) Japanese language classes may be exempted in the 2nd semester.

**) Students are highly recommended to take scientific & Engineering courses, at least one subject more than the minimum requirement in order to ensure your successful completion of JUSST program. (Form D)

***) “Electronic Experiment Lab” is considered as one of the Science and Engineering Subjects.

2026 FALL SEMESTER CALENDAR

	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	
OCT					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
					New Students Arrival	2nd-5th Orientation			Classes Begin Entrance Ceremony		Weekly Meeting 16:20 - 17:30					Health & Sports Day Class as Usual				Univ. Sports Day (Japanese Classes as Usual)	12th to 16th Course registration													5th period no class				
NOV	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
			Culture Day																	19th - 23rd (No Classes) University Festival and open campus day							26th to 27th Medical Checkup (1st semester students)											
DEC			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
																											Japanese Classes as Usual	26th Dec to 3rd Jan Winter Break										
JAN						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
			Winter Break			New Year's Day			Classes Resume							Coming-of-Age Day																					Preparing for The mini-Conference (Presentation)	
FEB		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28									
	Preparing for The mini-Conference (Presentation)							8th to 12th Examination Period				National Foundation Day Class as Usual	JUSST mini-Conference and Closing Ceremony All JUSST students have to attend (to be Determined)											Emperor's Birthday														
MAR		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
	13th Feb to 31st Mar Spring Break for the regular student (no class day)																						Spring Equinox Day	Substitute holiday			JUSST Graduates Vacate Deadline							Spring Break End				
APR					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
	2nd semester Course Guidance All students have to attend																																	Showa Day				

National holiday
 University center exam and UEC entrance exams

@ JUSST students Weekly Meeting on every Wed (start from 16:20)

Time-Table for Fall Semester, 2026
令和8年度秋学期（後期） 短期留学プログラム時間割

Day 曜日	Period 授業時間	Subject 授業名	Department 学科等	Lecturer 教員名	Classroom 教室	Note 備考
Mon 月	1	Advanced Topics in Data Analysis Optimization (1/2)	I	LIU Zhi (劉 志)	W10-113	*
	2	Topics in Informatics I (Evolutionary Computation)	J	SATO Hiroyuki (佐藤 寛之)	W9-115	
	3					
	4					
	5	Innovative and Global Leadership Skills (IGLS)	HLSS	SHI Jie (史 傑) Suwako UEHARA (上原 寿和子)	C-401	Old C building
Tue 火	1	UEC Academic Skills I (Computer Literacy)	IEC	CHOO	C-401	Old C building Bring a laptop PC to class
	2	UEC Academic Skills II (Information literacy and Research)	IEC	CHOO	C-401	
		Life Long Learning Sports	SPORTS	ANDO Soichi (安藤 創一)		For 2nd-semester students only
	3	Japanese Language (日本語)	IEC			
	4	Japanese Language (日本語)	IEC			
Wed 水	5	Preparation for Graduate School	HLSS	Atsuko Marie JEFFREYS	C-402	Old C building
	1					
	2	Japanese Language (日本語)	IEC			
	3	Japanese Language (日本語)	IEC			
	4	Japanese Language (日本語)	IEC			
Thu 木	5					
	1	UEC Academic Skills III (Publishing Literacy and Research)	IEC	CHOO	E3-1st floor Computer room	For 2nd-semester students only Bring a laptop PC to class
		Advanced Topics in Data Analysis Optimization (2/2)	I	LIU Zhi (劉 志)	W10-113	*
	2					
	3					
Fri 金	4	Experimental Electronics Laboratory	S	KISHIMOTO Tetsuo (岸本 哲夫) NAYAK Kali Prasanna		Compulsory for undergraduates
	5	Topics in Mechanical and Intelligent Systems Engineering II (The Human Brain as Intelligent Machines)	M	MIYAWAKI Yoichi (宮脇 陽一)	E4-222	
	1	Japanese Language (日本語)	IEC			
	2	Japanese Language (日本語)	IEC			
		Selected Topics on Quantum Degenerate Systems	S	SAITO Hiroki (斎藤 弘樹) KISHIMOTO Tetsuo (岸本 哲夫)	E4-222	*
Intensive Course	3	Advanced Communication Engineering and Informatics IV (Computer Algorithms)	I	KOBAYASHI Satoshi (小林 聡)	W10-115	
	4					
	5	International Communication for Science and Technology	I	TAKAHASHI Hiroki (高橋 裕樹) MATSUURA Motoharu (松浦 基晴)	C-403	* New C building
		Topics in Mechanical and Intelligent Systems Engineering I (Advanced Robotics and Mechatronics Engineering)	M	KOIZUMI Norihiro (小泉 憲裕), et al.	E4-315	* The start date is set for mid-November for two weeks, but this is subject to change



Informatics, Science, and Engineering Courses

1/2, 2/2

For courses meeting twice a week, students must attend both weekly sessions (1/2 and 2/2) to earn credit. This is an 8-week course.

* Joint classes with regular graduate students

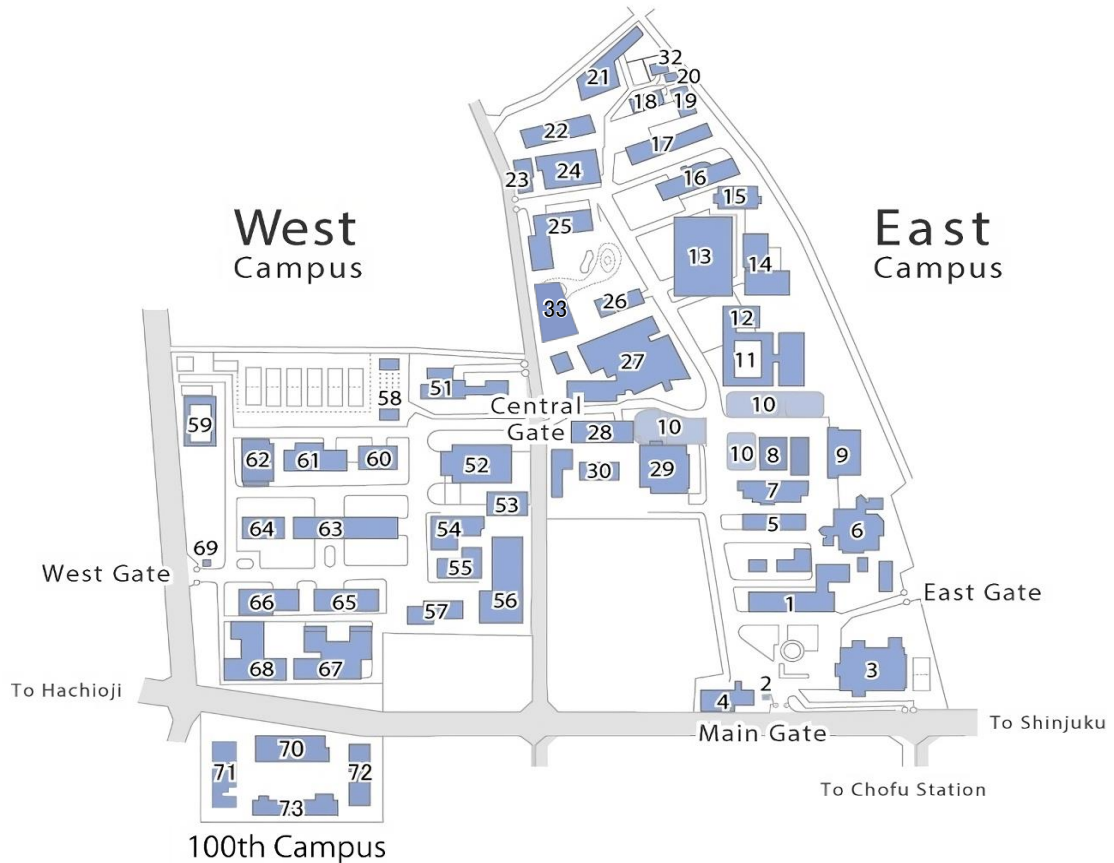
Department 学科等

J: Department of Informatics (情報学専攻)
I: Department of Computer and Network Engineering (情報・ネットワーク工学専攻)
M: Department of Mechanical and Intelligent Systems Engineering (機械知能システム学専攻)
S: Department of Engineering Science (基盤理工学専攻)
IEC: International Education Center (国際教育センター)
SPORTS: UEC Physical Education Division (健康・スポーツ科学部会)
HLSS: The Division of Humanities Languages and Social Sciences (総合文化部会)

Period 授業時間 (JST)

1: 9:00-10:30
2: 10:40-12:10
3: 13:00-14:30
4: 14:40-16:10
5: 16:15-17:45
6: 17:50-19:20
7: 19:30-21:00

UEC CAMPUS MAP



- Main Building (1)
- Auditorium (3)
- 80th Anniversary Memorial Hall (4)
- Building E-1 (7)
- Building E-2 (28)
- Building E-3 (27)
- Building E-4 (11)
- Building E-5 (12)
- Building E-6 (13)
- Building E-7 (14)
- Building E-8 (15)
- Building E-9 (16)
- Building E-10 (17)
- Building E-11 (33)
- Building A (5)
- Building B (6)
- Building C (8)
- Building D (9)
- Communication Park (10)
- University Center (29)
- Health Care Center (26)
- International House (21)
- Facilities for Extracurricular Activities (22)
- Personnel Clubhouse (20)
- Child-Care Facility (32)
- Building E-31 (18)
- Building E-32 (19)
- Building E-33 (23)
- Building E-34 (24)
- Building E-35 (25)
- Building E-36 (30)
- Security Office of the Main Gate (2)
- Alliance Center (70)
- Student Dormitory – tomodachi (71)
- Student Dormitory – kizuna (72)
- Staff Housing (73)
- Building W-1 (65)
- Building W-2 (63)
- Building W-3 (66)
- Building W-4 (64)
- Building W-5 (54)
- Building W-6 (60)
- Building W-7 (61)
- Building W-8 (67)
- Building W-9 (68)
- Building W-10 (56)
- Building W-11 (62)
- Gymnasium (52)
- Gymnasium II (53)
- Archery Facility (58)
- Swimming Pool (59)
- West Cafeteria (55)
- Student Dormitory – goshiryō (51)
- Building W-31 (57)
- Security Office of West Gate (69)
- Center for International Programs and Exchange (28)
- University Library (27)
- Information Technology Center (27)
- Coordinated Center for UEC Research Facilities (13)
- Center for Industrial and Governmental Relations (14)
- Advanced Wireless Communication Research Center (17)
- UEC Museum of Communication (17)
- Center for Developing e-Learning (66)
- Institute for Laser Science (61)
- Center for Community Relations (1)
- Innovation Research Center for Fuel Cells (16)
- Center for Photonic Innovation (62)
- Research Center for Ubiquitous Networking and Computing (66)
- Advanced Ultrafast Laser Research Center (62)

Innovative and Global Leadership Skills (IGLS)

General Information

Course title (Japanese)	Innovative and Global Leadership Skills (IGLS)		
Course title (English)	Innovative and Global Leadership Skills (IGLS)		
Course Code	ENG603z INT602z		
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	2.0
Day, Period	Mon 5		
Essential Subjects			
Category	General culture subjects		
Cluster/Department	School of Informatics and Engineering		
Lecturer(s)	Shi, Uehara		
Office	East 1-609 (Shi), East 1-803 (Uehara)		
e-mail	shi.jie@uec.ac.jp, uehara.suwako@uec.ac.jp		
Course website	Join Google Classroom before the first class: TBD. If student selection is required due to too many applicants, priority is given to students who apply or are planning to apply for the Minor in English for Science and Technology.		
LMS info	NIL		
Last updated	2026/03/23 11:34:17	Status	Released /now open to public

Course Description

Topic and goals	This course is designed for the 3rd- and 4th-year students and covers the elements of contemporary technological innovation and leadership knowledge as well as concepts that science and engineering students need to acquire as future internationally competent professionals and leaders. This course delivers these elements in English, aiming to enhance both the understanding of the course content and English language skills. The primary pedagogical approach of this course includes active and cooperative learning, as well as cognitive development strategies. Given that this course is designed to bolster our university students' international competence in English, it is a compulsory English Advanced Course for the English Minor program.
Prerequisites	All compulsory English courses in the first and second years.
Recommended prerequisites and preparation	All compulsory English courses in the first and second years.
Course textbooks and materials	NIL
Course outline and weekly schedule	This course covers both basic global innovative concept and skills as well as specific ones for science and engineering students such as 21 century global leadership skills, project leader skills, multicultural competencies, and English communication skills. This course is a student-centered course that offers numerous hands-on opportunities for students to apply English, including research, oral reports, discussions, and various types of presentations. Given that this course is designed to bolster our university students' international competence in English. Week 1: Course orientation. Ice-breaking. Short oral speech on self-introduction. Pre-course survey Week 2: Understanding innovation and leadership skills; Group discussions Week 3: Understanding global issues, problem-solving skills, Forming presentation groups; Group project preparation Week 4: Understanding multiculturalism, conflict resolution, and critical thinking. Group project preparation Week 5: Understanding foundational Business English and interpersonal communication; Mid-term group presentations; Peer review

	Week 6: Mid-term group presentations; Peer review Week 7: Understanding project leadership and the craft of influencing through language; Preparation for individual project presentation Week 8: Understanding World Englishes and varied communication patterns globally; Preparation for individual project presentation Week 9: Understanding the craft of English language for professional communication; Preparation for individual project presentation Week 10: Understanding the craft of English language for professional communication; Preparation for individual project presentations; Verbal and non-verbal communication for formal presentations Week 11: Individual presentation rehearsals: Week 12: Individual project presentations Day1; Peer evaluation Week 13: Individual project presentations Day 2; Peer evaluation Week 14: Possible Individual project presentations Day3; Peer evaluation; Presentation summaries; Sharing peer evaluation; Selection of the best projects and presentation Week 15: Last day of classes. Course review. Make-up presentations. Post-course survey
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	Demonstrated high performance in language proficiency exams (TOEIC, TOEFL, IELTS) and extensive experience utilizing English in a professional environment.
Distance learning information	This course is face-to-face in principle. Should unavailable situations occur, some classes may be conducted online. The information of such classes will be provided by the class teachers directly. Google Classroom: TBD
Preparation and review outside class	This course requires students to work outside of the classes for preparation for projects, presentations and other homework.
Evaluation and grading	Homework assignments: 10% Mid-term project:20% Final presentation: 40% Peer evaluation: 10% In-class performance: 20%
Office hours	Students can talk to the teachers before or after the classes directly, and/or make appointments with the teachers by email.
Message for students	Your participation in class is one of the most important elements of your overall achievement in this course. You must try to use English in class and participate actively in class activities required by the teachers. Inappropriate use of Japanese in class will be considered unacceptable behaviors and could lead to lower final grades. In addition, you are expected to make contributions to group activities and collaborate with your peers for research, presentations or any other collaborative tasks.
Others	This course is offered to all students as one of the elective Advanced Courses. However, it is a compulsory English Advanced Course for those students who apply for the Minor in English for Science and Technology.
Keyword(s)	Global leadership, cross-cultural and interpersonal communication, language user strategies, practical skills

Preparation for Graduate School

General Information

Course title (Japanese)	Preparation for Graduate School		
Course title (English)	Preparation for Graduate School		
Course Code	ENG604z		
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	2.0
Day, Period	Tue 5		
Essential Subjects			
Category	General culture subjects		
Cluster/Department	School of Informatics and Engineering		
Lecturer(s)	Atsuko Marie Jeffreys		
Office	East 1-807		
e-mail	ajeffreys@uec.ac.jp		
Course website	Google Classroom class code: 2ye4hpzc		
LMS info	NIL		
Last updated	2026/03/24 17:29:51	Status	Released /now open to public

Course Description

Topic and goals	This course, "Preparation for Graduate School," is specifically designed for undergraduates planning to pursue higher education in science and engineering fields. It bridges the gap between undergraduate studies and the rigorous demands of graduate-level education, with a focus on enhancing English language proficiency and academic skills critical for success in a global academic environment. Through a blend of practical assignments, interactive sessions, and research projects, students will gain insights into effective communication with a diverse academic audience, understand the nuances of academic English in both spoken and written forms, and develop strategies for presenting research findings effectively. The course aims to equip students with the tools necessary for academic success, including understanding the publication process, preparing for graduate school interviews, and setting realistic academic and language learning goals. By the end of this course, students will have a comprehensive portfolio demonstrating their readiness for graduate studies.
Prerequisites	The following are prerequisite to registering for this course: Academic Written English I & II Academic Spoken English I & II Academic English for the Second Year I & II
Recommended prerequisites and preparation	English seminar
Course textbooks and materials	No textbooks are assigned. Materials to be used in class will be provided electronically by the instructor. The materials for individual research are the responsibilities of the students themselves.
Course outline and weekly schedule	Week 1: Introduction to Graduate Studies and Course Overview Week 2: Enhancing Academic English Skills Week 3: Effective Communication in Graduate School Week 4: Reading and Analysis of Academic Texts Week 5: Developing Academic Presentation Skills Week 6: Workshop on Writing Academic Papers Week 7: Constructing and Delivering Effective Presentations Week 8: Academic English: Writing vs Speaking Week 9: Preparation for Graduate School Interviews Week 10: Strategies for Successful Research Proposals

	Week 11: Understanding the Publication Process Week 12: Peer Review and Feedback Mechanisms Week 13: Setting Academic and Language Learning Goals Week 14: Graduate School Application Process Week 15: Portfolio Presentation and Course Wrap-up (Schedule subject to change)
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	Google Classroom class code: 2ye4hpzc The following Zoom room will be used only in an emergency. The class will normally be conducted face-to-face. Join Zoom Meeting https://uec-tokyo.zoom.us/j/95083129711?pwd=6VONMbwOi0tnfYoVCyGBJRICzMeAgL.1 Meeting ID: 950 8312 9711 Passcode: 0001595820
Preparation and review outside class	Reading and writing assignments, presentation preparation, lab visits and interviews, etc.
Evaluation and grading	1. Portfolio Presentation and Final Project (30%): 2. Academic Presentations (20%) 3. Written Assignments (20%) 4. Participation and Engagement (15%) 5. Quizzes and Tests (10%) 6. Goal Setting and Self-Assessment (5%)
Office hours	Email me to set up an appointment to meet for consultation.
Message for students	• Embark on this transformative journey to sharpen your academic and English language skills, ensuring you are thoroughly prepared, confident, and excited for the challenges and opportunities of graduate studies. • "What does not kill you makes you stronger." -- it is true.
Others	• The contents of this syllabus are subject to change as deemed necessary. • Students should explore their interests in graduate studies and come prepared with questions.
Keyword(s)	Graduate School Transition / Academic Preparedness / English Proficiency

Japanese Language (日本語)

General Information

Course title (Japanese)	日本語		
Course title (English)	Japanese Language		
Course Code			
Academic year	All year	Year offered	All school year
Semester(s) offered	Spring/Fall	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	Based on the seated time
Day, Period			
Essential Subjects			
Category	General culture subjects		
Cluster/Department	School of Informatics and Engineering and JUSST Program		
Lecturer(s)	内藤 真理子、胡 芸群 and et. al.		
Office	East 2-213 (内藤), East 2-217 (胡)		
e-mail	内藤 真理子<naito-m@uec.ac.jp>, 胡 芸群<ko.ichun.hyq@uec.ac.jp>		
Course website	The URL, class code, and password etc. will be sent via email.		
LMS info			
Last updated	2026/03/09	Status	Released /now open to public

Course Description

Topic and goals	Students will learn the basic grammar, daily use vocabulary and comprehensive in an intensive manner (自分の考えや情報が的確に伝えられるを習得する).
Prerequisites	NIL
Recommended prerequisites and preparation	NIL
Course textbooks and materials	The textbook will be specified in class
Course outline and weekly schedule	A placement test will be taken before courses begin and students will be assigned to a class, as shown below, based on their Japanese language level. Introductory Level Japanese Japanese Language Elementary I Japanese Language Elementary II Japanese Language Elementary III Japanese Language Intermediate I Japanese Language Intermediate II Japanese Language Intermediate III Japanese Language Advanced The course content, schedule and other information will be provided after the class assigning.
Face-to-face or remote classes	Face to face
Course content utilizing practical experience	
Distance learning information	
Preparation and review outside class	
Evaluation and grading	Evaluation method 90% < S, 80% < A, 70% < B, 60% < C, 60% > D (fail)
Office hours	Comments and questions could be submitted by email
Message for students	
Others	Lecture style: Real me Tools to be used: ZOOM, Google Classroom, Google Drive and else
Keyword(s)	Japanese Language

Advanced Topics in Data Analysis Optimization

General Information

Course title (Japanese)	データ解析最適化論		
Course title (English)	Advanced Topics in Data Analysis Optimization		
Course Code			
Academic year	2026	Year offered	All school year
Semester(s) offered	Fall Term	Faculty offering the course	Master's Program, Doctoral Program
Teaching method	Lecture	Credits	2.0
Day, Period	Mon 1 , Thu 1		
Essential Subjects			
Category	Graduate School Specialized Education Courses - Specialized subjectII		
Cluster/Department	Department of Computer and Network Engineering		
Lecturer(s)	LIU Zhi (劉 志)		
Office	East 2-611		
e-mail	liuzhi@uec.ac.jp		
Course website	https://webclass.cdel.uec.ac.jp/webclass/ (Webclass)		
LMS info	Webclass https://webclass.cdel.uec.ac.jp/webclass/login.php?auth_mode=SHIB&group_id=2625232240016		
Last updated	2026/03/26 16:34:50	Status	Released /now open to public

Course Description

Topic and goals	This lecture addresses the fundamentals and algorithms of optimization theory which is one of core technologies of machine learning and many other IT research areas. Especially, non-linear programming and convex optimization are focused.
Prerequisites	Linear algebra 線形代数
Recommended prerequisites and preparation	Linear algebra 線形代数
Course textbooks and materials	None LectureContents/讲义web (https://webclass.cdel.uec.ac.jp/webclass/) The PPTs will be available online. Please register for this lecture in Webclass (https://webclass.cdel.uec.ac.jp/webclass/)
Course outline and weekly schedule	The class is held in English. This lecture is offered twice a week in October and November in a "four-semester" lecture format. The contents will be adjusted according to the students' level of understanding. 1. Introduction : 2. Convex sets 3. Convex function 4. Convex optimization problems I : basic concepts 5. Convex optimization problems II: examples 6. Convex optimization problems III: solutions 7. Duality 8. KKT conditions 9. CVX: introduction and programming 10. Approximation and fitting 11. Use case of optimization

	12. Markov decision process 13. Applications of Markov decision process 14. Network Flow: Basic Concepts and Optimization Methods 15. Paper Presentation by Students
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	- This course is conducted in the classroom, but some classes may be conducted via online tools (such as zoom or MS Teams). Details will be announced in the WebClass (https://webclass.cdel.uec.ac.jp/webclass/). - This lecture is offered twice a week in October and November in a "four-semester" lecture format. Liu : liuzhi@uec.ac.jp
Preparation and review outside class	Understand literature and research papers related to optimization theory.
Evaluation and grading	Evaluation method: Small tests in each class (40%), reports (60%) and final presentation (10%). Evaluation basis: Understanding of each class is evaluated by small test. Reports are evaluated by understanding, initiative, and contents.
Office hours	It is recommended to contact me by e-mail if you have any questions.
Message for students	The topics in the class are closely related with "big-data" analysis, network management, signal processing, optimization and machine learning techniques.
Others	- Students who are interested in machine learning, network management, optimization, pattern recognition, and big data analysis are welcome. - It is recommended to contact the lecturer by e-mail if you have any questions. - The spoken language is English - Python simulation tasks are provided to students for their deeper understandings. - This course is conducted in the classroom, but some classes may be conducted via online tool (using zoom or other tools). Details will be announced in the WebClass (https://webclass.cdel.uec.ac.jp/webclass/). - This lecture is offered twice a week in October and November in a "four-semester" lecture format
Keyword(s)	Optimization problem, Non-linear programming, Convex set/function, Optimality conditions, KKT conditions, Duality, convex optimization, Markov decision process

Experimental Electronics Laboratory

General Information

Course title (Japanese)	Experimental Electronics Laboratory		
Course title (English)	Experimental Electronics Laboratory		
Course Code	INT401m INT401n INT401p INT401r		
Academic year	2026	Year offered	2/3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Experiment	Credits	2.0
Day, Period	Thu 3 and 4		
Essential Subjects			
Category	Specialized subject		
Cluster/Department	Cluster III		
Lecturer(s)	KISHIMOTO Tetsuo (岸本 哲夫), Kali P. Nayak		
Office	Building East 6, Room 628		
e-mail	kishi (@pc.uec.ac.jp), kalipnayak (@uec.ac.jp)		
Course website	none		
LMS info	NIL		
Last updated	2026/03/03 10:56:40	Status	Released /now open to public

Course Description

Topic and goals	This course aims for providing the students, who may have no practical knowledge of electrical circuits, with the basics of analog and digital electronics through hands-on experience.
Prerequisites	Basic Electronics
Recommended prerequisites and preparation	Analysis, especially complex numbers.
Course textbooks and materials	Instruction manual in text materials or a pdf file will be provided at the class.
Course outline and weekly schedule	A student builds the following electrical circuits on the solderless breadboard. He or she then measures and analyzes various properties. The experiments are carried out every other week, and classroom discussion is held online in between. 1) Guidance. 2) Measurement of resistance. 3) Classroom discussion. 4) Measurement of complex impedance for C and L. 5) Classroom discussion. 6) Resonant behavior of LC-circuits. 7) Classroom discussion. 8) Transmit radio signals and receive them using LC-circuits. 9) Classroom discussion. 10) Transistor and LED. 11) Classroom discussion. 12) Operation amplifier and its applications.(transmit and receive sound signal using LEDs). 13) Classroom discussion. 14) Logic gates. 15) Classroom discussion.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	

Distance learning information	
Preparation and review outside class	Please study on the basic technical terms of the IC you will work on each week.
Evaluation and grading	Students should be able to build the actual circuits to understand and explain the principle of operation. It is mandatory to attend and finish all the projects and all reports must be submitted for each one listed above in order to acquire the credit. The score rate is 80%, where the attitude toward the experiment is also taken into account. The student must submit a report on the project within a week, which is subject to either quick, oral examination with the lecturer or open discussion in which every student is to participate. This post-laboratory step will be assessed at a rate of 15%. The pre-laboratory test will also be assessed (5%).
Office hours	Please make an appointment before coming to my office. Contact: Bldg-E6, room 628, Ext:5449, kishi(at)pc.uec.ac.jp
Message for students	Electronic circuits are fun to play with.
Others	The course has originally been designed for JUSST students, but regular students can take it. If you have any questions regarding taking this class or other things related to this class, please send us an email.
Keyword(s)	complex impedance, inductor, capacitor, logic gate, operational amplifier, bipolar junction transistor.

Topics in Mechanical and Intelligent Systems Engineering II (The human brain as intelligent machines)

General Information

Course title (Japanese)	Topics in Mechanical and Intelligent Systems Engineering II (The human brain as intelligent machines)		
Course title (English)	Topics in Mechanical and Intelligent Systems Engineering II (The human brain as intelligent machines)		
Course Code			
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	2.0
Day, Period	Thu 5		
Essential Subjects			
Category	Specialized subject		
Cluster/Department	Cluster II/Cluster III		
Lecturer(s)	MIYAWAKI Yoichi (MIYAWAKI Yoichi (宮脇 陽一))		
Office	East 4-620		
e-mail	yoichi.miyawaki@uec.ac.jp		
Course website	None		
LMS info	NIL		
Last updated	2026/03/18 15:18:28	Status	Released /now open to public

Course Description

Topic and goals	The human brain is considered as one of the most intelligent "machines." In this lecture, we explore how the human brain is receiving, processing, and producing signals that are used to sense, perceive, feel, and make actions. In particular, we will focus on the visual information processing systems in the human brain (the visual cortex) and learn how the visual cortex works from the basic viewpoints. We would also focus on methodological aspects of analysis of the human brain function, particularly on the topics of non-invasive signal acquisition of human brain activity using electroencephalography (EEG), magnetoencephalography (MEG), and functional magnetic resonance imaging (fMRI), together with computational analysis of these signals and computational modeling of neural signal processing. We might refer and ask students to read and introduce (in the form of presentation) the recent literature to achieve the goal.
Prerequisites	None
Recommended prerequisites and preparation	None
Course textbooks and materials	None, but the following textbook might help students to understand the topics: [1] Jeremy M. Wolfe, Keith R. Kluender, Dennis M. Levi, Linda M. Bartoshuk, Rachel S. Herz, Roberta L. Klatzky and Daniel M. Merfeld, "Sensation & Perception (5th edition)," Sinauer Associates (2017) [2] Peter Dayan and Laurence F. Abbott, "Theoretical Neuroscience: Computational and Mathematical Modeling of Neural Systems," The MIT Press (2005) [3] Scott A. Huettel, Allen W. Song, Gregory McCarthy, "Functional Magnetic Resonance Imaging," Sinauer Associates (2008)
Course outline and weekly schedule	The following contents may vary depending on progress of students: [1] Introduction [2] Basics of our visual perception [3] Evaluation of our subjective sensation/perception (1): metrics [4] Evaluation of our subjective sensation/perception (2): psychophysical procedures [5] Exercise of psychophysical experiment (1): survey of visual illusions

	[6] Exercise of psychophysical experiment (2): introduction of Psychtoolbox and/or PsychoPy [7] Exercise of psychophysical experiment (3): performing test experiments [8] Student presentation of psychophysical experiment [9] Basics of the human brain [10] Basics of the visual cortex [11] Basics of neural signal acquisition: invasive method [12] Basics of neural signal acquisition: non-invasive method [13] Basics of neural information encoding and decoding [14] Overview of recent topics about visual information representation in the neural systems [15] Student presentation about recent topics in visual information representation in the neural systems *The contents and order will change according to students understandings.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	The class will be conducted in person. Class materials and other important information will be provided via Google Classroom. The classroom code is: yxjla6fm.
Preparation and review outside class	None, but maybe preferable to get used to computer programming using matlab and/or python
Evaluation and grading	(a) Evaluation: based on the overall score of exam(s), report(s), and/or presentation(s). (b) Criteria: above 60% of a total score (c) Expected level to achieve: Correctly perform calculations related to the topics and correctly explain related knowledge.
Office hours	14:40 - 16:10, every Thursday. An e-mail contact prior to your visit is preferable.
Message for students	Active contribution for the course will enhance your understanding. Explore the attractiveness of this field by yourself, too.
Others	NA
Keyword(s)	human brain, neural information processing, brain activity measurement, neuroscience, visual perception, visual illusion, computer graphics, visual psychophysics

Selected Topics on Quantum Degenerate Systems

General Information

Course title (Japanese)	凝縮体量子工学特論		
Course title (English)	Selected Topics on Quantum Degenerate Systems		
Course Code			
Academic year	2026	Year offered	All school year
Semester(s) offered	Fall semester	Faculty offering the course	Master's Program, Doctoral Program
Teaching method	Lecture	Credits	2.0
Day, Period	Fri 2		
Essential Subjects			
Category	Graduate School Specialized Education Courses - Specialized subject II		
Cluster/Department	Department of Engineering Science		
Lecturer(s)	SAITO Hiroki (斎藤 弘樹), KISHIMOTO Tetsuo (岸本 哲夫)		
Office	East 6-428 (Saito) , East 6-628 (Kishimoto)		
e-mail	hiroki.saito@UEC, kishi@pc.UEC (UEC=uec.ac.jp)		
Course website	NIL		
LMS info	NIL		
Last updated	2026/02/27 14:13:15	Status	Released /now open to public

Course Description

Topic and goals	A Bose-Einstein condensate is a macroscopic wave function, which exhibits quantum phenomena in macroscopic scale. In this lecture, we study fundamental properties (trapping and cooling, quantized vortex, etc.) and recent topics of Bose-Einstein condensates of ultracold atoms.
Prerequisites	基礎量子物理工学 Advanced Quantum Mechanics
Recommended prerequisites and preparation	数学および物理の科目の他に、簡単な英語の読み・書き Mathematics, physics, English
Course textbooks and materials	NIL Not assigned
Course outline and weekly schedule	English type Aa or Ba depending on the students in the class Language is mainly Japanese. English is used complementally. 1. Introduction 2. Noninteracting systems 3. Atomic properties 4. Trapping and cooling of atoms 5. Atomic interactions 6. Mean field theory 7. Mean field dynamics 8. Vortex 9. Attractive interaction 10. Feshbach resonance 11. Spinor condensate 12. Optical lattice 13. Fermions 14. Various experiments 15. Summary 1-5, 11,12 : Saito 6-10, 13-15 : Kishimoto

Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	Please see the google classroom (class code TBA).
Preparation and review outside class	Please carry out a review of the lecture.
Evaluation and grading	Evaluation is based on the reports.
Office hours	Always
Message for students	Macroscopic quantum phenomena are fascinating.
Others	NIL
Keyword(s)	Ultracold atoms, Bose-Einstein condensation, laser cooling, superfluidity

Advanced Communication Engineering and Informatics IV (Computer Algorithms)

General Information

Course title (Japanese)	Advanced Communication Engineering and Informatics IV (Computer Algorithms)		
Course title (English)	Advanced Communication Engineering and Informatics IV (Computer Algorithms)		
Course Code	INT004c INT004d INT004g INT004h		
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics
Teaching method	Lecture	Credits	2.0
Day, Period	Fri, 3rd period		
Essential Subjects			
Category	Specialized subject		
Cluster/Department	Cluster I/Cluster II		
Lecturer(s)	KOBAYASHI Satoshi (小林 聡)		
Office	W9-735		
e-mail	kobayashi.satoshi@uec.ac.jp		
Course website	Go to the google classroom: puxjodsu		
LMS info	NIL		
Last updated	2026/03/10 23:51:32	Status	Released /now open to public

Course Description

Topic and goals	The purpose of this lecture is provide the theory and technique to design efficient algorithms for various fundamental problems. The goals of the students are to achieve the following points: (1) to understand the behavior, correctness, and time complexity analysis of the algorithms discussed in the lecture, (2) to understand the principles of design methodologies of algorithms, such as dynamic programming, greedy method, etc.
Prerequisites	Registered students should have ability to write C programs. Furthermore, the knowledge about some basic data structures (list, binary tree, heap, etc.) and basic algorithms (sorting, etc.) are required.
Recommended prerequisites and preparation	None
Course textbooks and materials	Some handouts are provided at the lecture.
Course outline and weekly schedule	(a) Contents of the lecture [1] Minimum spanning tree problem and greedy algorithms [2] General approach to minimum spanning problem [3] Correctness of Prim's and Kruskal's algorithm

	[4] Greedy algorithms for other problems [5] DP Method (1) --- Approximate String Matching Problem [6] DP Method (2) --- Longest Increasing Subsequence Problem [7] DP Method (3) --- Shortest path problem [8] DP Method (4) --- Transform DFAs to regular expressions [9] DP Method (5) --- Context-free grammar and its recognition problem [10] DP Method (6) --- Bottom up understanding of CKY algorithm for CFC [11] DP Method (7) --- Top down understanding of CKY algorithm [12] DP Method (8) --- Hidden Markov Models (HMM) [13] DP Method (9) --- Recognition problem of HMM [14] DP Method (10) --- HMM recognition algorithm [15] Other algorithms and Summary (b) How does this lecture proceed? For each problem, we first discuss on its background and motivation, and then give an algorithm for the problem. The correctness and time complexity analysis of the given algorithm will be discussed in details. Example runs will be used to enrich the understanding.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	Lecture information will be provided at Google classroom:puxjodsu Please access to the class if you are interested in this lecture.
Preparation and review outside class	Implement algorithms given in the the lecture, if possible.
Evaluation and grading	Academic performance is evaluated by problems given to the students on the The lowest standard is 60%.
Office hours	Any time, but appointments by e-mails are necessary.
Message for students	None
Others	None
Keyword(s)	Dynamic programming, greedy algorithms, context free grammars, HMM, s

International Communication for Science and Technology

General Information

Course title (Japanese)	国際科学技術コミュニケーション論		
Course title (English)	International Communication for Science and Technology		
Course Code			
Academic year	2026	Year offered	All school year
Semester(s) offered	Fall semester	Faculty offering the course	Master's Program, Doctoral Program
Teaching method	Lecture	Credits	2.0
Day, Period	Fri 5		
Essential Subjects			
Category	Graduate School Practical Education Subjects		
Cluster/Department	For all departments		
Lecturer(s)	TAKAHASHI Hiroki (高橋 裕樹), MATSUURA Motoharu (松浦 基晴)		
Office	West 6-509 (Takahashi), East 3-1028 (Matsuura)		
e-mail	rocky@inf.uec.ac.jp, m.matsuura@uec.ac.jp		
Course website	BHN桑原基金寄付講座/ BHN Kuwabara Foundation Donation Course https://www.uec.ac.jp/news/announcement/2019/20190529_1862.html		
LMS info	NIL		
Last updated	2026/03/19 10:43:28	Status	Released /now open to public

Course Description

Topic and goals	Topic In the age when sciences and technologies are deeply involved in social life, engineers and researchers need not only the ability to make presentations and negotiations in their specialized fields, but also various communication skills. In addition, in order to achieve the SDGs (Sustainable Development Goals) adopted by the United Nations, it is necessary to show leadership and work with experts from different fields and/or people from different cultures. Moreover, as science and technology tend to become deeper and more complex, it is important to have the ability to explain to general public so that they can properly understand their expertise. In this course, students will understand the international activities such as international standardization, international conferences, international projects, press releases, etc., and acquire the communication skills required in those situations, through lectures and presentations. Goals ① Understand the standardization system of science and technology that contributes to SDGs, the academic society system, the international joint research activities, and the form of press release on science and technology. ② Understand international customs and different cultures of activities at international organizations and conferences. ③ Acquire the writing and presentation skills necessary for explanations to engineers in different fields and general public by picking up science and technology articles.
Prerequisites	None
Recommended prerequisites and preparation	None
Course textbooks and materials	Reference materials • Erin Meyer, "The Culture Map -- Breaking Through the Invisible Boundaries of Global Business," Public Affairs Books, New York City, 2014. • エリン・メイヤー著?樋口武志訳「異文化理解力」, 英治出版, 1,800 円 • 情報通信技術委員会編「使える会議英語～国際会議参加者の表現・事例集」, https://www.ttc.or.jp/activities/sdt_text/english_text • 山本佳世子著「研究費が増やせるメディア活用術」, 丸善出版, 1,950 円

Course outline and weekly schedule	In this course, all lectures will be given mainly in English. The following is a tentative schedule at March in 2026. #1 Oct. 2 (Fri), 5th period “Introduction, and About SDGs including BHN activities” Prof. TAKAHASHI Hiroki and Mr. TOMINO Takeshi (BHN) #2 Oct. 9 (Fri), 5th period “International communication for science and technology contributing to SDGs” (Emer. Prof. MIKI Tetsuya) #3 Oct. 16 (Fri), 5th period “Presentation at international academic conferences and paper submission to the academic journal” Prof. MATSUURA Motoharu #4 Oct. 23 (Fri), 5th period “International business negotiations involving science and technology” Dr. HIROSE Yayoi (Prof. of Toyo University) #5 Oct. 30 (Fri), 5th period “Science and technology articles and press releases in the media” Dr. YAMAMOTO Kayoko (Institute of Science Tokyo) #6 Nov. 6 (Fri), 5th period “Activities for international technical cooperation and technical support” Mr. YAMASHITA Makoto (BHN) #7 Nov. 13 (Fri), 5th period “International standardization in electric and electronics (IEC) and management (ISO) fields” TBD (Ministry of Economy, Trade, and Industry) #8 Nov. 27 (Fri), 5th period “International standardization in the field of networks” Dr. UEDA Hiromi (Emer. Prof. of Tokyo Univ. of Technology) #9 Dec. 4 (Fri), 5th period “International standardization in the field of radio communications” Dr. ATARASHI Hiroyuki (NTT Docomo) #10 Dec. 11 (Fri), 5th period “International R&D Project Activities” Dr. IGUCHI Satoshi (National Astronomical Observatory of Japan) #11 Dec. 18 (Fri), 5th period “Discussion at international meetings” Ms. KURISAKI Yoshiko (Europe-Japan Dynamics) #12, #13 Jan 8 (Fri), 5th and 6th period (Note) “Exercise: Presentation and discussion on the exercise theme (part 1)” Prof. TAKAHASHI, Prof. MATSUURA, Prof. YURA and Mr. YAMASHITA #14, #15 Jan. 22 (Fri), 5th and 6th period (Note) “Exercise: Presentation and discussion on the exercise theme (part 2)” Prof. TAKAHASHI, Prof. MATSUURA, Prof. YURA and Mr. YAMASHITA (Note) Exercise theme: Make a presentation to evaluators from research funding agencies in order to obtain funding for your research topic. Your presentation should include purpose, impact and far-reaching effect. “Technical tour” will be held (The schedule is undetermined).
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	UEC’s faculty members in charge of this subject are actively engaged in research activities internationally. And, part-time lecturers have extensive international experience in the subject matter. This course is given by these lecturers in an omnibus method, providing knowledge and experiences on diverse international science and technology communication.
Distance learning information	• Classroom: East New C-Bldg. 403 (4th Floor) • If you cannot attend the classroom due to unavoidable circumstances, you can attend online. On-demand class is also available. • To take online classes, please connect to the e-learning site at URL below and login with following ID / Password. The "e-learning user manual" is also available there. URL: http://www.super-program.jp/bhn_moodle/ ID:uec-bhn2026 Password:Uec-Bhn2026
Preparation and review outside class	Read the lecture materials provided in advance so that you can ask questions during class.

Evaluation and grading	Evaluation method The contents of the presentations and discussions at the exercise and the reports on the final assignments will be evaluated comprehensively. Evaluation criteria The level of understanding of learning goals ① and ②, and the presentation ability of goal ③ based on the following evaluation criteria; A (80-100 points): It is recognized that goals ① and ② are sufficiently achieved, and goal ③ is excellent. B (70-79 points): It is recognized most of goals ① and ② are achieved, and goal ③ is good. C (60-69 points): It is recognized most of goals ① and ② are achieved fairly, and goal ③ is not sufficient but acceptable. D (59 points or less, rejected): Goals ① and ② are not fully achieved and goal ③ is not acceptable.
Office hours	Take appointments by email in advance
Message for students	This course holds technical tours related to SDG. But, it depends on the status of COVID-19.
Others	This subject is offered by the BHN Kuwahara Foundation Donation Course. It is also a subject for Joint Innovative PhD Program, and is offered online to students of other universities. https://www.bhn.or.jp/project_detail/kuwabara-human/ https://www.uec.ac.jp/department/super-daigakuin/
Keyword(s)	SDGs, information and communications, international standardization, international R&D project, academic presentation, academic journal paper, different culture, science and technology communication

Advanced Robotics and Mechatronics Engineering

General Information

Course title (Japanese)	Advanced Robotics and Mechatronics Engineering		
Course title (English)	Advanced Robotics and Mechatronics Engineering		
Course Code			
Academic year	2026	Year offered	All school year
Semester(s) offered	Fall semester	Faculty offering the course	Master's Program, Doctoral Program
Teaching method	Lecture	Credits	2.0
Day, Period	Intensive Course		
Essential Subjects			
Category	Graduate School Specialized Education Courses - Specialized subjectII		
Cluster/Department	Department of Mechanical and Intelligent Systems Engineering		
Lecturer(s)	KOIZUMI Norihiro (小泉 憲裕), KAN Tetsuo (菅 哲朗), SATO Ryuki (佐藤 隆紀), JIANG Yinlai (姜 銀来), KUDOH Shunsuke (工藤 俊亮), TANAKA Motoyasu (田中 基康), NAKATA Yoshihiro (仲田 佳弘)		
Office	East4-624 (Koizumi)		
e-mail	nkoizumi@uec.ac.jp		
Course website	Google Classroom (Class code: c47ck5xu)		
LMS info	NIL		
Last updated	2026/03/13 13:47:50	Status	Released /now open to public

Course Description

Topic and goals	This program aims to produce talented people who will be well versed in advanced specialized fields in the field of advanced robotics and who will be able to play an active role in the international community in the future. Lectures will be given in English on the fundamentals and applications of each field of advanced robotics, and students will be given interdisciplinary insight and knowledge in this field through English reports and/or other materials submitted during each course.
Prerequisites	Mechanical and Electrical Engineering, Control Engineering, Robotics Engineering
Recommended prerequisites and preparation	Mechanical and Electrical Engineering, Control Engineering, Robotics Engineering
Course textbooks and materials	Fundamental Robotics and Applications. In 2025, all of lecture materials are distributed on UEC Google Classroom with the class code: ksqlyoo.
Course outline and weekly schedule	[1] November 9th (Mon) Guidance and Lecture 1: Prof. Norihiro Koizumi, Medical Robotics: The fundamental topics with Medical Robotics are given and such the typical function and the unique structure are discussed. As the application of Medical Robotics, the diagnostic technique with ultrasound imaging for motion control is discussed. [2] November 10th (Tue) Lecture 2: Prof. kazuo Tanaka, Nonlinear Control Systems Design and Analysis: This lecture covers fuzzy control within nonlinear control theory, with a focus on unmanned aerial vehicles (UAVs), a platform where safety is critical and performance demands are high. It bridges recent research and future directions in the field. [3] November 11th (Wed) Lecture 3: Prof. Jun Shintake, Environmentally Harmonized Robotics: Discuss how robots can coexist with their surrounding environments by providing an overview of soft robotics, biodegradable robots, edible robotics, and plant robotics. [4] November 12th (Thu) Lecture 4: Prof. Shunta Togo, Humanization Robotics: Humanization robotics, i.e., robotics that aims to understand and reconstruct human bodily functions by mimicking or drawing inspiration from human body structures, will be introduced. The current state and challenges of anthropomorphic robots and powered upper-limb prostheses will then be discussed. [5] November 13th (Fri) Lecture 5: Prof. Masao Sugi, Robotic assistant in manufacturing: For achieving variable-mix variable-volume production, integration of human workers and intelligent

	systems are necessary. This lecture deals with intelligent systems supporting human workers in manufacturing sites. Examples of collaborative robots, autonomous mobile robots, decision-making supports, and planning supports are presented. [6] November 16th (Mon) Lecture 6: Prof. Ayato Kanada, Mechanical Design in Robotics: The fundamental topics of mechanical and hardware design in robotics are given, and how mechanical design enables robots to achieve high performance and advanced motions is discussed. The role of mechanical design in enhancing robotic capabilities is explained, and recent research examples are introduced. [7] November 17th (Tue) Lecture 7: Prof. Tomoaki Nakamura, Symbol Emergence in Robotics: This lecture introduces symbol emergence in robotics, exploring how robots autonomously form symbols through interaction with the physical and social world. It covers grounding, perception, language acquisition, and learning frameworks that enable robots to develop shared meanings with humans and other agents. November 18th (Wed) (backup day) November 19th (Thu) (backup day) November 20st (Fri) (backup day) November 22rd (Sun) Open Campus (Visiting laboratories) (All of lectures are given by English. lectures will be primarily face-to-face (Lecture Room: E4-315, Time: 5th period: 16:15-17:45 6th period: 17:50-19:20), but may be online or on-demand.) Lecture 4: Prof. Shunta Togo is now planning to give his lecture on 4th: 14:40-16:10 and 5th: 16:15-17:45 period.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	Lectures will be primarily face-to-face (Lecture Room: E4-315, Time: 5th period: 16:15-17:45 6th period: 17:50-19:20), but may be online or on-demand. Each teacher will inform you of the lecture format via Google Classroom the day before the lecture, so please follow the instructions. All of lecture materials are distributed on UEC Google Classroom. Instructions regarding report assignments will be given during each lecture or in Google Classroom.
Preparation and review outside class	Before course work, it is required to check the background of the topics by such the internet. After course works, some homework should be given to improve the knowledge about the topics.
Evaluation and grading	There will be some report requirements on the topics mentioned above during the semester. Assessment in this class will take account of (1) these reports, (2) attendance-rate with the score proportion of 50%, 50%, respectively.
Office hours	Contact to each professor by email
Message for students	This course is aimed at producing talented people who will be well versed in advanced specialized fields in the field of advanced robotics and who will be able to play an active role in the international community in the future.
Others	Lectures will be given in English on the fundamentals and applications of various fields of advanced robotics, and students will be required to write reports in English for each class, providing students with interdisciplinary knowledge and insight in this field.
Keyword(s)	Robotics, Mechatronics, Medical Robotics, Mechanical Design, Mechanics, Robotics, Mechatronics, Medical Robotics, Fuzzy Control, Nonlinear Control, Unmanned Aerial Vehicles (UAVs), Exotic Materials, Bio-Mimetic Robot, Bio-Inspired Robot, Variable-Mix Variable-Volume Production, Assembly Support, Mechanical Design, Mechanics, Symbol Emergence, Language Acquisition.

UEC Academic Skills I (Computer Literacy)

General Information

Course title (Japanese)	UEC Academic Skills I (Computer Literacy) (上級科目)		
Course title (English)	UEC Academic Skills I (Computer Literacy)		
Course Code	INT001z		
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	2.0
Day, Period	Tue 1		
Essential Subjects			
Category	General culture subjects		
Cluster/Department	School of Informatics and Engineering		
Lecturer(s)	Choo Cheow Keong		
Office	E2-305		
e-mail	uec-as1@fedu.uec.ac.jp		
Course website	http://www.fedu.uec.ac.jp/skills		
LMS info	Moodle UEC Academic SkillsI AS1 http://www.fedu.uec.ac.jp/skills		
Last updated	2026/03/09 21:33:49	Status	Released /now open to public

Course Description

Topic and goals	This course provides students with fundamental to advanced knowledge of computer systems and networks in a typical academic environment. The lectures emphasize essential tools and techniques applicable to a broad range of systems, focusing on the use of powerful tools such as the UNIX shell, HTML, LaTeX, and Git/GitHub. [Important Notes] - As international courses are scheduled to coincide with the arrival of exchange students, this course may start one week later than the standard university calendar. Please confirm the start date with the instructor. - Please bring a laptop or tablet with Wi-Fi capability to every class.
Prerequisites	NIL
Recommended prerequisites and preparation	コンピューターリテラシー Computer literacy
Course textbooks and materials	NIL
Course outline and weekly schedule	[Course Schedule and Topics] The following is an overview of the weekly topics. While the curriculum covers general computer literacy, it focuses primarily on LaTeX for academic writing and includes group work and presentations. This is a hands-on course where the instructor introduces the topics, and students complete assignments during lab sessions or as homework. The course follows a "learn, practice, implement, and apply" approach, combining theoretical lectures with practical exercises to cover the basic usage of UNIX systems, Git/GitHub, LaTeX, and HTML. 1. Introduction (Usage of the Information Technology Center (ITC), UEC campus network policies) 2. Computer Operating Systems and Tools (Fundamentals) 3. Unix Operating System (Fundamentals) 4. Unix Operating System (The Internet and Computer Networks) 5. Word Processing and LaTeX (Basic Unix Editor and LaTeX) 6. LaTeX (Environments and layout; Commands, Structure, Packages, Classes, and Text)

	typesetting) 7. LaTeX (Mathematical Formulas) 8. LaTeX (Lists, Tabulators, and Tables) 9. LaTeX (Graphics and Drawing) 10. LaTeX (Labels, Cross-referencing, Citations, and Bibliography) 11. Introduction to Git and GitHub (Git Basics, Website project) 12. HTML (Basics; Structure, Tags, Colors, and Typesetting) 13. HTML (Links and Multimedia; Images, Sound, and Video) 14. HTML (Lists, Tables, Interactivity, and Cascading Style Sheets (CSS)) 15. HTML (Website Project Work) Note: The lecture schedule is subject to revision throughout the course. Remember to bring a laptop PC with UECwireless connectivity to every class.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	While this course is primarily designed for in-person classroom instruction, it may be delivered remotely if necessary.
Preparation and review outside class	As a final project, students are required to design and create their own homepages and present them in class at the end of the semester. Please note that additional time outside of regular class hours may be required to complete the website.
Evaluation and grading	The final grade will be determined based on the following: - Weekly Assignments: 50% - Mid-semester Presentation: 30% - Final Presentation: 20% As this course emphasizes hands-on experience, regular attendance and active participation are mandatory. To be eligible for credit, students must satisfy all of the following requirements: 1. Maintain an attendance rate of at least 70%. 2. Submit all assignments. 3. Complete both the mid-semester and final presentations.
Office hours	12:00-13:00. To ensure availability, please schedule an appointment before walking in.
Message for students	Students are expected to be an active part of the learning process. We highly encourage participation in class discussions, asking questions, and interacting with others. If you have any comments or insights on the topics covered, please feel free to share them with the class.
Others	Students are expected to arrive at class on time. Absences may be excused in cases of emergency, illness, or attendance at academic conferences. In such instances, please ensure that you contact the instructor as soon as possible (either in advance or immediately after the absence).
Keyword(s)	Unix, HTML, Latex, Website, Git/GitHub

UEC Academic Skills II (Information Literacy and Research)

General Information

Course title (Japanese)	UEC Academic Skills II (Information Literacy and Research) (上級科目)		
Course title (English)	UEC Academic Skills II (Information Literacy and Research)		
Course Code	INT002z		
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	2.0
Day, Period	Tue 2		
Essential Subjects			
Category	General culture subjects		
Cluster/Department	School of Informatics and Engineering		
Lecturer(s)	Choo Cheow Keong		
Office	E2-305		
e-mail	uec-as2@fedu.uec.ac.jp		
Course website	http://www.fedu.uec.ac.jp/skills		
LMS info	Moodle UEC Academic Skills II AS2 http://www.fedu.uec.ac.jp/skills		
Last updated	2026/03/09 21:37:36	Status	Released /now open to public

Course Description

Topic and goals	This course is designed to foster students' ability to identify, evaluate, and utilize diverse information sources effectively in science and engineering studies. Students will learn how to search for academic papers and technical materials using databases such as Web of Science. The practical exercises focus on mastering information technology tools (open-source freeware) to create mind maps, diagrams, and posters for effective communication. At the end of the semester, students are required to deliver a poster presentation on their major field of study or research. (Target students: 2nd-year undergraduates and above, and graduate students. No prior English proficiency is required. Since this is an international course taught alongside exchange students, all students are welcome to join.) Important Notes - Course Schedule: Please note that international courses may start one week later than the standard university calendar to coincide with the arrival of exchange students. Please confirm the exact start date with the instructor. - Preparation: Please bring a laptop or tablet with Wi-Fi capability to every class.
Prerequisites	UEC Academic Skills I (Computer Literacy) or コンピュータリテラシー
Recommended prerequisites and preparation	NIL
Course textbooks and materials	NIL
Course outline and weekly schedule	[Course Schedule and Topics] The following is an overview of the weekly topics. This course covers the fundamental methods of searching, collecting, and managing academic resources using the university library collection, scholarly databases, e-journals, and various search engines essential for research. Additionally, students will gain practical skills in scientific drawing, spreadsheet management, graphing, and poster production. The course introduces powerful tools for scientific research and engineering. The lectures include hands-on learning and practical exercises designed for students without prior experience or specialized training. The initial focus is on the basic usage of scientific software and standard research procedures.

	1. Introduction (Usage of the Information Technology Center (ITC), etc.) 2. Scientific Literature and Resource Retrieval (UEC Library) 3. Mind Mapping and Brainstorming 4. Academic Integrity (Referencing, citing, and creating bibliographies) 5. Managing and Sharing Resources 6. Writing a Research Proposal 7. Scientific Drawing, Charts, Diagrams, and Timelines (Inkscape, GIMP) 8. Tables and Graphs (SciDAVis) 9. Desktop Publishing for Scientific Posters (Scribus) 10. Creating Effective Scientific Posters 11. Formula Editors and Word Processing 12. Writing a Research Abstract 13. Preparation for Presentations 14. Poster Presentation (Part 1) 15. Poster Presentation (Part 2) [Note] - Please bring a laptop PC with Wi-Fi capability to access course materials and participate in exercises. - The lecture schedule is subject to revision throughout the course.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	While this course is primarily designed for in-person classroom instruction, it may be delivered remotely if necessary.
Preparation and review outside class	Students are required to read one to three academic articles related to their current research or a topic of interest. Based on these articles, students are expected to summarize the key points and deliver a poster presentation at the end of the semester.
Evaluation and grading	The final grade will be determined based on the following: - Weekly Assignments: 50% - Mid-term Presentation: 20% - Poster Presentation: 30% As this is a practical, hands-on course, regular attendance and active participation are mandatory. To be eligible for credit, students must satisfy all of the following requirements: 1. Maintain an attendance rate of at least 70%. 2. Submit all assignments. 3. Complete the mid-term presentation, the final poster presentation, and the poster presentation self-evaluation report.
Office hours	12:00-13:00. To ensure availability, please schedule an appointment before visiting.
Message for students	Students are expected to be an active part of the learning process. We highly encourage participation in class discussions, asking questions, and interacting with others. If you have any comments or insights on the topics covered, please feel free to share them with the class.
Others	Students are expected to arrive at class on time. Absences may be excused in cases of emergency, illness, or attendance at academic conferences. In such instances, please ensure that you contact the instructor as soon as possible (either in advance or immediately following the absence).
Keyword(s)	Research Methodology, Information Retrieval, University Library, Desktop Publishing (DTP), Poster Presentation, Scientific Communication

UEC Academic Skills III (Publishing Literacy and Research)

General Information

Course title (Japanese)	UEC Academic Skills III (Publishing Literacy and Research)		
Course title (English)	UEC Academic Skills III (Publishing Literacy and Research)		
Course Code	INT003z		
Academic year	2026	Year offered	3/4
Semester(s) offered	Fall semester	Faculty offering the course	School of Informatics and Engineering
Teaching method	Lecture	Credits	2.0
Day, Period	Thu 1		
Essential Subjects			
Category	General culture subjects		
Cluster/Department	School of Informatics and Engineering		
Lecturer(s)	Choo Cheow Keong		
Office	E2-305		
e-mail	uec-as3@fedu.uec.ac.jp		
Course website	http://www.fedu.uec.ac.jp/skills		
LMS info	Moodle UEC Academic Skills AS3 http://www.fedu.uec.ac.jp/skills III		
Last updated	2026/03/09 21:38:28	Status	Released /now open to public

Course Description

Topic and goals	This course provides students with the fundamental skills for research and presentation through the practical execution of a strategic research project. Guided by their own research themes, students will experience the entire academic process: from drafting a research proposal and collecting information to conducting the study and preparing a manuscript for publication. Furthermore, the course covers the essential ethics and morals that scientists and engineers must uphold in their professional conduct. At the end of the semester, students will participate in an international mini-conference to deliver their oral presentations. (Target students: 3rd-year undergraduates and above, and graduate students. No prior research experience or English proficiency is required. As this is an international course taught alongside exchange students, everyone is welcome to join.) [Important Notes] - Course Schedule: Please note that international courses may start one week later than the standard university calendar to coincide with the arrival of exchange students. Please confirm the exact start date with the instructor. - Preparation: Please bring a laptop or tablet with Wi-Fi capability to every class.
Prerequisites	UEC Academic Skills I (Computer Literacy) or コンピュータリテラシー
Recommended prerequisites and preparation	UEC Academic Skills II (Information Literacy and Research)
Course textbooks and materials	NIL
Course outline and weekly schedule	The following is an overview of the weekly topics. This course is designed to support the pursuit of writing research papers and to share the skills required for high-quality academic publishing. All lectures are integrated with practical activities. By the end of the course, students are required to write a paper and deliver a presentation based on their individual research projects. 1. Introduction (Usage of the Information Technology Center (ITC), etc.) 2. Academic Integrity (Scientific misconduct, originality, and ethics) 3. Researcher's Outputs (The why, how, and where of disseminating research) 4. Planning Research & Protocols (LaTeX editors, mind mapping, brainstorming, etc.) 5. Proposing and Reporting on Research 6. Constructing Scientific Presentations

	7. Midterm Presentation (Part 1) 8. Midterm Presentation (Part 2) 9. Brushing Up Your Skills (Strategies for handling Q&A sessions) 10. Communication and Correspondence (Interacting with peers, researchers, and editors) 11. Academic Publishing I (Overview: Dissertations, monographs, and scientific papers) 12. Academic Publishing II (Submission procedures, peer-review processes, and standards) 13. Assessment and Evaluation (Peer review and self-assessment) 14. Oral Presentation (Part 1) 15. Oral Presentation (Part 2) [Note] - Please bring a laptop PC with Wi-Fi capability to access course materials and participate in exercises. - Note: The lecture schedule is subject to constant revision throughout the course.
Face-to-face or remote classes	in-person class
Course content utilizing practical experience	
Distance learning information	While this course is primarily designed for in-person classroom instruction, it may be delivered remotely if necessary.
Preparation and review outside class	Students are required to read two to three academic articles related to their research or a topic of interest. Based on these articles, students are expected to summarize the key findings and deliver oral presentations at both the mid-semester and the end of the semester. For students already assigned to a laboratory, the essential project hours are estimated to be more than eight hours per week. This aligns with the standard expectations for a graduation thesis project, and students are expected to engage deeply with their research.
Evaluation and grading	The final grade will be determined based on the following: - Weekly Assignments: 40% - Research Paper Writing: 30% - Oral Presentations (Mid-term and Final): 30% As this is a hands-on course, regular attendance and active participation are mandatory. To be eligible for credit, students must satisfy all of the following requirements: 1. Maintain an attendance rate of at least 70%. 2. Submit all assignments. 3. Complete all required presentations.
Office hours	12:00-13:00. To ensure availability, please schedule an appointment before visiting.
Message for students	Students are expected to take an active role in their own learning process. We highly encourage participation in class discussions, asking questions, and interacting with peers. If you have any comments or insights on the topics covered, please feel free to share them with the class.
Others	Students are expected to arrive at class on time. Absences may be excused in cases of emergency, illness, or attendance at academic conferences. In such instances, please ensure that you contact the instructor as soon as possible (either in advance or immediately following the absence).
Keyword(s)	Research Methodology, Paper Writing and Submission, Oral Presentation, Academic Publishing, Research Integrity, Scientific Communication

