Course Description

UEC Exchange program

Japanese University Studies in Science and Technology (JUSST)

Fall Semester, 2015

Center for International Programs and Exchange

The University of Electro-Communications

国立大学法人
電気通信大学
UEC TOKYO

UEC JUSST Program Course Description

Japanese University Studies in Science and Technology (JUSST)
Center for International Programs and Exchange (CIPE)
The University of Electro-Communications
1-5-1 Chofugaoka, Chofu-shi, 182-8585
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Contents

JUSST Program Course Requirements

<table>
<tr><th></th><th>Subject</th><th>1st Semester</th><th>2nd Semester</th></tr>
<tr><td rowspan="7">CORE SUBJECTS</td><td>Japanese Language</td><td colspan="2">Elementary / Intermediate / Advanced *
8 - 14 hours/week (6 - 7 Credits)</td></tr>
<tr><td>Academic Skills I</td><td>2 hours/week (2 Credits)</td><td rowspan="2">–</td></tr>
<tr><td>Academic Skills II</td><td>2 hours/week (2 Credits)</td></tr>
<tr><td>Academic Skills III</td><td>–</td><td>2 hours/week (2 Credits)</td></tr>
<tr><td rowspan="2">Scientific &
Engineering Subjects
(ELECTIVE)</td><td colspan="2">[UNDERGRADUATE STUDENTS]
Need to pass <u>3 subjects</u> at minimum**
in Each Semester. (H-6)
[GRADUATE STUDENTS]
Need to pass <u>3 subjects</u> at minimum**
in One Academic Year. (H-9)</td></tr>
<tr><td colspan="2">Electronic Experiment Lab.
4 hours/week (2 Credits)
All <u>Undergraduate Students</u> are required to take
Only offered in the FALL Semester</td></tr>
<tr><td>LAB WORK
Research / Project
(Required for JUSST student)</td><td colspan="2">[UNDERGRADUATE STUDENTS]
<u>Individual Study Project</u> under the supervision of UEC faculty member. Minimum 8 hours/week
(5 Credits/one academic year) 2 Credits/one semester
[GRADUATE STUDENTS]
<u>Independent Research Project</u> under the supervision of UEC Faculty member. Minimum 8hours/week
(6 Credits/one academic year) 3 Credits/one semester</td></tr>
<tr><td rowspan="4">FREE ELECTIVE</td><td>Preparation for Overseas Study</td><td colspan="2" rowspan="2">2 hours/week (2 Credits)
Offered in the SPRING Semester only</td></tr>
<tr><td>English for Intercultural Communication</td></tr>
<tr><td>Advanced Reading in Academic English</td><td colspan="2" rowspan="2">2 hours/week (2 Credits)
Offered in the FALL Semester only</td></tr>
<tr><td>Research Writing</td></tr>
<tr><td>Sports Classes</td><td>–</td><td>2 hours/week (1 Credit)</td></tr>
</table>

*) Japanese language classes are exempted for Graduate Students in their 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. (H-5, H-7)

2015 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 to 7th Orientation Week				Opening Ceremony		Classes Begin				Health & Sports Day	Classes as usual (Japanese Classes)			16th to 23rd Course registration period						Classes as usual (General Assembly)											
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																21st - 25th No Classess University Festival				Labor Day														
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				
																									Emperor's Birthday			26th Dec to 3th 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	
						New Year's Day	Winter Break		Classes Resume							Coming-of-Age Day				Afternoon no classes																		
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	29							
						Supplementary day				Supplementary day	Supplementary day	National Foundation Day	12th to 18th Examination Period							Preparing for the mini-Conference																	
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				
			JUSST mini-Conference and Closing Ceremony Every JUSST student have to attend (to be announced)																			Spring Equinox Day		Spring Break													
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 Class Guidance All students have to attend																																	

@ JUSST students Weekly Meeting on every Wed (start from 18:00)

13 Oct Classess as usual (for Japanese Language classes)

22 Oct 1st - 4th period Classes as usual (General Assembly)

National holiday

University center exam and UEC entrance exams

Time-Table for Fall Semester, 2015
平成27年度秋学期（後期）　短期留学プログラム時間割

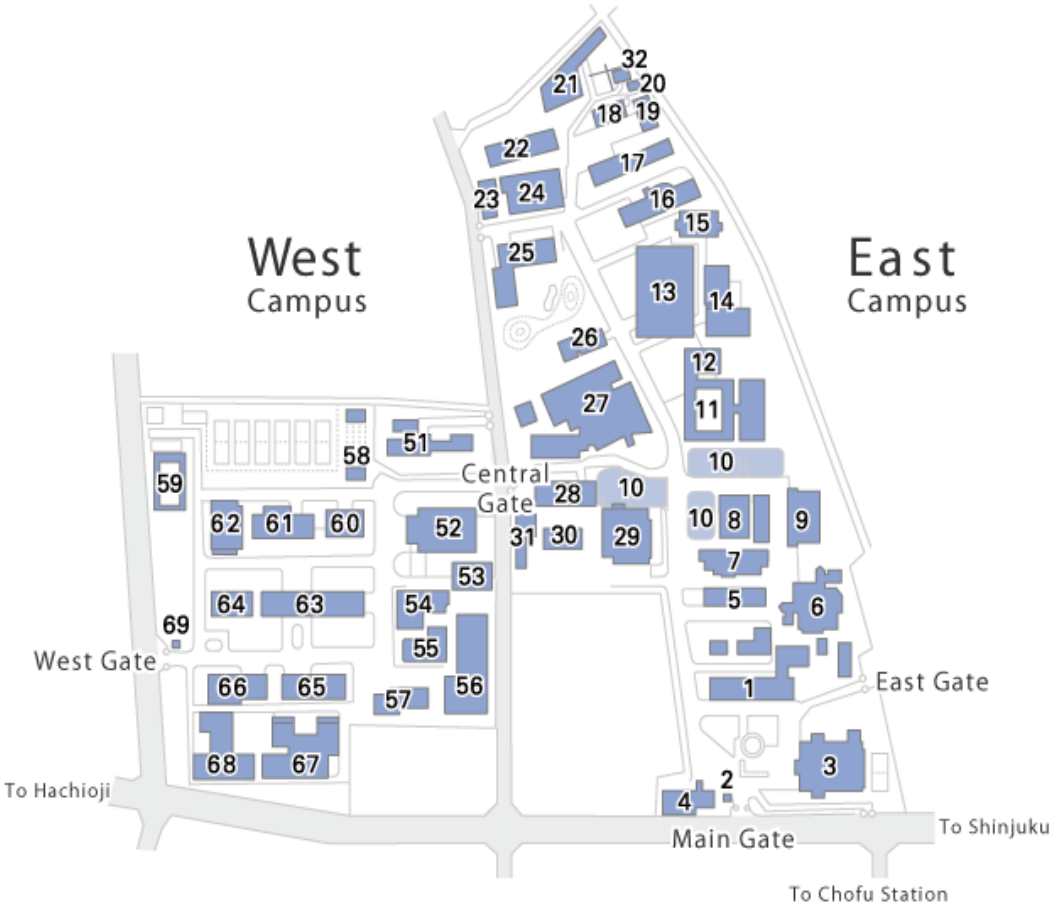
Day 曜日	Period 授業時間	Subject　授業名	Department 学科等	Lecturer 教員名	Classroom 教室	Note 備考
Mon 月	1					
	2					
	3					
	4	Quality and Reliability Engineering	J	SUZUKI Kazuyuki（鈴木 和幸） JIN Lu（金　路）	W5-209	
	5					
Tue 火	1	UEC Academic Skills I (Computer Literacy)	CIPE	CHOO	E3(1F)	Computer Room
	2	UEC Academic Skills II (Information literacy and Research)	CIPE	CHOO	E3(1F)	Computer Room
		Life Long Learning Sports (for Senior student only)	SPORTS	ANDO Soichi（安藤 創一）		*
	3	Japanese Language（日本語）	CIPE			
	4	Japanese Language（日本語）	CIPE			
	5	Semiconductor Materials and Devices	S	NOZAKI Shinji（野崎　眞次）	E6-204	
Wed 水	1					
	2	Japanese Language（日本語）	CIPE			
	3	Japanese Language（日本語）	CIPE			
	4	Japanese Language（日本語）	CIPE			
		Advanced International Academic Skills	HLSS	John Francis Cross	E4-222	
	5	Advanced Reading in Academic English	HLSS	SATOH Miyako（佐藤 美弥子）	A-303	
Thu 木	1	UEC Academic Skills III (Publishing Literacy and Research)	CIPE	CHOO	E3(1F)	* Computer Room
	2	Advanced Communication Engineering and Informatics III	I	TARUI Jun（垂井　淳）	C-301	
	3	Experimental Electronics Laboratory	S	KISHIMOTO Tetsuo（岸本　哲夫）	E6-217	
	4					
	5	Visual Communication	M	KANEKO Masahide（金子　正秀）	W8-132	
Fri 金	1	Japanese Language（日本語）	CIPE			
	2	Japanese Language（日本語）	CIPE			
	3	Advanced Communication Engineering and Informatics IV (Computer Algorithms)	I	NAKANO Keisuke（中野　圭介）	W9-116	
	4					
	5	Research Writing	HLSS	SHI Jie（史　傑）	A-403	
		Fundamental Concepts of Discrete-time Signal Processing	CIPE	HAMANO Nobuo（濱野 亘男）	E2-B117	

Department 学科等
- J: Department of Informatics（総合情報学専攻）
- I: Department of Communication Engineering Informatics(情報通信工学専攻)
- M: Department of Engineering and Intelligent Systems(知能機械工学専攻)
- S: Department of Engineering Science(先進理工学専攻)
- CIPE: Center for International Programs and Exchange(国際交流センター)
- 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
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

* for 2nd semester (senior) students only

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 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）
- Judo Gymnasium（31）
- 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）
- 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（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）

UEC Academic Skills Ⅰ（Computer Literacy）

General Information

Course name	UEC Academic Skills Ⅰ（Computer Literacy）（上級科目）		
English Course name	UEC Academic Skills Ⅰ（Computer Literacy）		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects		
Department	Faculty of Informatics and Engneering		
Lecturer	Choo Cheow Keong		
Office	E2-305		
e-mail	uec-as1@jusst.fedu.uec.ac.jp		
Course's URL	http://www.fedu.uec.ac.jp/uec-as1		
Last updated	2015/03/30 18:20:42	**Status**	Released

Course Description

Topic, goals and objectives	This course gives the students the intermediate-advanced knowledge of computer systems and computer networks in a typical academic environment. The lecture stresses fundamental tools and techniques that are applicable to a broad reach of systems such as the use of primitive, but powerful tools as UNIX shell, HTML, LaTeX.
Prerequisites	NIL
Recommended preparation	コンピューターリテラシー Compter literacy
Course texts and materials	NIL
Course content and procedures	Course schedule and topics that will be covered ========== 1. Introduction (Usage: The Information Technology Center ITC, UEC campus network use policies) 2. Computer operating system and Tools (fundamentals) 3. Unix operating system (fundamentals) 4. Unix operating system (The Internet and computer network) 5. Word Processing (Basic; Desktop publishing, WYSIWYG, and LaTeX) 6. LaTeX (Environments and layout; LaTeX commands, Structure, Package, Class, style, Text typesetting) 7. LaTeX (Mathematical Formulas) 8. LaTeX (Displayed; Lists, Tabulator, Tables) 9. LaTeX (Displayed; Graphics, Drawing) 10. LaTeX (Labels, Cross-referencing, Citations and Bibliography) 11. World Wide Web (Overview; Web systems, applications, HTML) 12. HTML (Basic; Structure, Tag, colour, typesetting) 13. HTML (Links and Multimedia; Images, Sound, and Movies) 14. HTML (Forms, Tables, and Frames) 15. HTML (Interactivity, Cascading Style Sheet; CSS) ========== This course is intended to be a lecture in combination with a practical exercise ("learn, practice, implement and apply") that will cover the usage of the UNIX system, and including how to write in LaTeX and HTML. The lectures will take place in the computer room at the Information Technology Center (E-3 building).

	Note that the lecture schedule is subject to constant revisions throughout the course.
Study time (preparing and reviewing)	Students have to create/design a homepage and present it in class at the end of the semester. Thus, student may need some extra time to create the homepage.
Evaluation method and grading scale（target and standard）	Evaluation is given as follows; (Attendance 20%, Tasks 50%, Mid-Semester presentation 20%, Final presentation 10%) Since this course is a practical course, attendance and participantion in class is obligatory. Only students who have 1)maintained at least 70% of attendance, 2) submitted all the assignments and 3)made their Mid-semester & final presentations can obtain the credits.
Office hours	12:00-13:00, for just-in-case, schedule an appointment before walking in.
A message for students	We expect students to be the active part of the learning process. We encourage the participation of students with questions, discussions, and comments. If you have anything interesting to say about the topics of this course covers please feel free to share with the others in class.
Others	Students are expected to come to class on time and stay for the 1.5 hours. Absences are excused in case of emergency, sickness, and trips to conferences.
Keywords	Unix, HTML, Latex

UEC Academic Skills Ⅱ（Information Literacy and Research）

General Information

Course name	UEC Academic Skills Ⅱ（Information Literacy and Research）（上級科目）		
English Course name	UEC Academic Skills Ⅱ（Information Literacy and Research）		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects		
Department	Faculty of Informatics and Engneering		
Lecturer	Choo Cheow Keong		
Office	E2-305		
e-mail	uec-as2@jusst.fedu.uec.ac.jp		
Course's URL	http://www.fedu.uec.ac.jp/uec-as2		
Last updated	2015/03/30 18:21:28	**Status**	Released

Course Description

Topic, goals and objectives	This course is designed to foster students' ability to identify, evaluate and use diverse information sources effectively in science and engineering studies. It involves the knowledge of information technology tools and their application to research. Students are required to give a poster presentation on their major study or research at the end of the semester.
Prerequisites	UEC Academic Skills I (Computer Literacy) or コンピューターリテラシー
Recommended preparation	NIL
Course texts and materials	NIL
Course content and procedures	Course schedule and topics that will be covered ========== 1. Introduction (Usage: The Information Technology Center etc.) 2. Academic Integrity (Referencing, citing) 3. Mind mapping, brain storming 4. Scientific literatures and resources retrieval 1/2 5. Scientific literatures and resources retrieval 2/2 (UEC Library) 6. Managing resources 7. Managing, accessing and sharing resources, and Create bibliographies 8. Logical and Critical reading (comprehend, examine, evidence, utilize) 9. Graphical information (Inkscape, GIMP) 10. Tables, Graphs, Charts, Diagrams and Timelines (SciDAVis) 11. Formula editor (word processing and computation) 12. Desktop publishing for poster presentation (Scribus) 13. Preparation for presentation 14. Poster presentation 1/2 15. Poster presentation 2/2 ========== The course gives an introduction to the use of some powerful tools for research scientists and engineer, and the lectures include hands-on learning and applicable exercises. The lectures will take place in the computer room at the Information Technology Center (E-3 building). Note that the lecture schedule is subject to constant revisions throughout the course.

Study time (preparing and reviewing)	Students have to read 1 to 3 articles about varied topics and in the final exam, students are expected to make a postal presentation.
Evaluation method and grading scale（target and standard）	Evaluation is given as follows; (Attendance 20%, Assignments 30%, midterm presentation 20%, Poster presentation 30%) Since this course is a practical course, attendance and participantion in class is obligatory. Only students who have 1)maintained at least 70% of attendance, 2) submitted all the assignments and 3)made their poster presentations can obtain the credits.
Office hours	12:00-13:00, for just-in-case, schedule an appointment before walking in.
A message for students	We expect students to be the active part of the learning process. We encourage the participation of students with questions, discussions, and comments. If you have anything interesting to say about the topics of this course covers please feel free to share with the others in the class.
Others	Students are expected to come to class on time and stay for the 1.5 hours. Absences are excused in case of emergency, sickness, and trips to conferences.
Keywords	Research, library, Desktop publishing, poster presentation

UEC Academic Skills Ⅲ（Publishing Literacy and Research）

General Information

Course name	UEC Academic Skills Ⅲ（Publishing Literacy and Research）		
English Course name	UEC Academic Skills Ⅲ（Publishing Literacy and Research）		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects		
Department	Faculty of Informatics and Engneering		
Lecturer	Choo Cheow Keong		
Office	E2-305		
e-mail	uec-as3@jusst.fedu.uec.ac.jp		
Course's URL	http://www.fedu.uec.ac.jp/uec-as3		
Last updated	2015/03/30 18:21:50	**Status**	Released

Course Description

Topic, goals and objectives	This class focuses attention on the exercise of strategic research project. Students are required to carry out a study/research project for more than a half of year with a specific topic. Then, they have to proceed their own project after they choose their own topic and make a monthly plan. At the end of semester, there will be an international mini-conference that has participants of all JUSST Exchange Students and other regular UEC Students. Students are required to give a presentation on their research-based projects.
Prerequisites	UEC Academic Skills I (Computer Literacy) or コンピューターリテラシー
Recommended preparation	UEC Academic Skills II (Information Literacy and Research)
Course texts and materials	NIL
Course content and procedures	Course schedule and topics that will be covered ========== 1. Introduction (Usage: The Information Technology Center etc.) 2. Academic Integrity (interesting and Unpublished, Scientific misconduct) 3. Researcher's outputs (Why, How, Where) 4. Planning the research/research protocol (LaTeX editor, Mind mapping and brainstorming etc.) 5. Proposing and Reporting on Research 6. Making a scientific presentation 7. Midterm Presentation 1/2 8. Midterm Presentation 2/2 9. Brush up on your skills (Handling Q&A) 10. Communication and Correspondence (Peer, Researcher, Editor, etc.) 11. Academic publishing (Overviews; Dissertation, Monograph, Scientific paper) 12. Academic publishing (Procedures, Processes and standards) 13. Assessment and evaluation 14. Oral presentation 1/2 15. Oral presentation 2/2 ========== This course is designed to support the pursuit of writing research paper and share the skills of quality publishing. The lectures are linked with practical activities, and the final assignment requires that each student to publishing and presenting a research paper/article in a mock conference (in class for regular student). The lectures will take place in the computer room at the Information Technology Center (E-3 building).

	Note that the lecture schedule is subject to constant revisions throughout the course.
Study time (preparing and reviewing)	Students have to read 2 to 3 articles about varied topics and at the mid and end of term, students are expected to make an oral presentation. For laboratory assigned students, the essential project hours are estimated for more than 8 hours a week, where this is the same standard of graduate thesis project.
Evaluation method and grading scale（target and standard）	Evaluation is given as follows; (Attendance 20%, Assignments 30%, Writing paper 20%, Oral presentation 30%) Since this course is a practical course, attendance and participantion in class is obligatory. Only students who have 1)maintained at least 70% of attendance, 2) submitted the writting paper and 3)made their final presentations can obtain the credits.
Office hours	12:00-13:00, for just-in-case, schedule an appointment before walking in.
A message for students	We expect students to be the active part of the learning process. We encourage the participation of students with questions, discussions, and comments. If you have anything interesting to say about the topics of this course covers please feel free to share with the others in class.
Others	Students are expected to come to class on time and stay for the 1.5 hours. Absences are excused in case of emergency, sickness, and trips to conferences.
Keywords	Research, Publishing paper, oral presentation

Advanced International Academic Skills

General Information

Course name	Advanced International Academic Skills		
English Course name	Advanced International Academic Skills		
Academic Year	2015	**Offered to year**	All
Semester offered	Fall semester	**Offered for**	undegradute and graduate students
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects for gradute school		
Department	All		
Lecturer	John Francis Cross		
Office	Part-time lecturer office		
e-mail	johnfranciscross@hotmail.co.uk		
Last updated		**Status**	Released

Course Description

Topic, goals and objectives	Advanced level skills workshop-type practice of academic English in an international context; enhancing students'ability to function effectively in international academic environment; focus on skills and strategies especially related to academic scientific English. In assessed tasks, students need to demonstrate skills of listening, reading, writing and speaking, with an academic scientific theme. Response to student needs/ requests.
Prerequisites	Upper intermediate level of English; ability to function in English.
Recommended prep.	-
Course texts and materials	Material prepared by lecturer.
Course outline and schedule	Class 1: Introduction, Academic Writing Workshop, listening practice 1. Class 2: Listening practice 2. Note taking. [Task 1] Class 3: Academic scientific writing style. Class 4: Academic scientific writing common features. Class 5: Reading practice 1. Class 6: Reading practice 2 and summary writing. [Task 2] Class 7: Pronunciation for English public speaking, strategies for improvement. Class 8: Pronunciation in English, North American and British features. Class 9: Research ethics, referencing, integrity. Class 10: Written and spoken communication at work. Class 11: Current affairs and shared cultural knowledge. [Task 3] Class 12: Relativism. Class 13: Error correction practice. Class 14: Discussion skills and tactics. Class 15: Asking questions. Speaking task. [Task 4] Class 16: Course Review.
Grading Criteria	Evaluation: 1. Listening summary/note taking. Class 2. 25% 2. Reading summary. Class 6. 25% 3. Writing task. Class 11. 25% 4. Speaking task. Class 15. 25%
Office hours	Email for appointment.
A message for students	Workshop practice of listening, reading, writing and speaking skills at high level in academic scientific context with native speaker feedback and response to student needs.
Keywords	scientific/academic writing and reading; communication skills; cultural knowledge; international academic context.

Advanced Reading in Academic English

General Information

Course name	Advanced Reading in Academic English		
English Course name	Advanced Reading in Academic English		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects		
Department	Faculty of Informatics and Engneering		
Lecturer	SATOH Miyako (佐藤　美弥子)		
Office	East1-615		
e-mail	satoh.miyako@uec.ac.jp		
Course's URL	NIL		
Last updated	2015/03/15 10:37:36	**Status**	Released

Course Description

Topic, goals and objectives	The purpose of this course is to equip the students to gain the competence and confidence in English reading, in any logical writing included scientific articles regardless of the fields.
Prerequisites	1st and 2nd year's required English subjects
Recommended preparation	English exercise subjects
Course texts and materials	handouts Textbooks in English： "Eye Robot," University of Chicago Magazine, Jan-Feb 2010 "Gathering Asian Sky Stories," Physics Today, September 2009 "Improving the Lives of Those Coping with Aphasia," Breaking Ground > Computer Science, Princeton Alumni Weekly, November 5, 2008 "Predicting a Baseball’s Path," American Scientist, May-June 2005 etc.
Course content and procedures	(a) Course content: 1) Classification; Introduction of reading drill for engineers or scientists 2) to 8) * 9) Midterm exam and the interpretation. 10) to 15) * 16) Final exam *2) to 8) and 10) to 15), by using the materials mentioned above, the classes will proceed as follows: (b) How lesson will proceed: The compilation of UEC comprehension English learning, that is, in addition to the acquired attentive reading skill, we will focus on strengthening the skill necessary for speed readings. While doing an attentive reading or speed reading, sometimes you will need to present i) your answer to the problems arise, ii) your ayes and noes to the author's viewpoints, iii) your own research result, and etc, in spoken or written form. While repeating the act of thinking while reading and read while thinking, at the end of the course, all students will have to present a decipherment with regard to their own chosen article in lecture style.
Study time (preparing and reviewing)	We encourage students to read in English eagerly, as engaged their interest. Concurrently, we want the students to ascertain that they could actually feel the improvement of their "attentive" and "speed" reading skills by taking the class.

Evaluation method and grading scale (target and standard)	(a) Evaluation method: Attendance (disqualified if absence more than one-third of the total classes), the performance including the remarks in class, mid-term and final exam results, are taking into consideration. Briefly, the evalutation weights are as follows: Performence in class 20% Mid-term exam 30% Final exam 50% (b) Assessment Standards: Whether the students have possessed the English comprehension skills required for engineer or scientist, will be the main criteria for the evaluation.
Office hours	The time is not fixed. If after class is not a convenient time, schedule a later time that would work for both.
A message for students	None
Others	None
Keywords	English comprehension, attentive reading, speed reading

Research Writing

General Information

Course name	Research Writing		
English Course name	Research Writing		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects		
Department	Faculty of Informatics and Engneering		
Lecturer	Shi Jie		
Office	E1-609		
e-mail	shi.jie@uec.ac.jp		
Course's URL	Nil		
Last updated	2015/03/18 21:16:41	**Status**	Released

Course Description

Topic, goals and objectives	The transition from undergraduate to graduate study presents many challenges and requires careful preparation in many aspects and substantial effort. This course is designed to help undergraduate students make the difficult transition and gain the basic knowledge and the necessary competencies of what will be required of them at graduate school particularly in the respects of English language and other language-related academic skills. Students in this course will familiarize themselves with the common academic activities/tasks such as group discussion, critical reading and analysis of textbooks and academic articles, informal oral and written report, formal presentation at symposiums and conferences (poster and computer-aided), and basic academic paper writing. This course will also support students in areas of how to communicate with professors and international students orally and through emailing. At the end of the course, students will conduct a field research to survey and interview UEC graduate students and professors on how to succeed in graduate school.
Prerequisites	1st and 2nd year compulsory English courses of UEC
Recommended preparation	Some Advanced English courses focusing on academic English, presentation and writing
Course texts and materials	Teaching materials will be prepared by the teacher and students based on the needs of the syllabus.
Course content and procedures	Week 1: Guidance/Course Orientation Week 2: What is academic English? What kinds of English are needed in your future labs? Week 3: Journal articles and reporting them bilingually Week 4: Research and types of academic writing Week 5: PPT writing Week 6: PPT writing Week 7: Poster writing Week 8: Poster writing Week 9: Definition wriing Week 10: Manual writing Week 11: Manual writing Week 12: Academic abstract writing Week 13: Academic abstract writing Week 14: Academic journal writing Week 15: Academic journal writing (Week 16: Self-evaluation and course evaluation)
Study time (preparing and reviewing)	Group work or research for presentations may take up a lot of time outside of the classes.

Evaluation method and grading scale（target and standard）	Performance and attitude in class: 20% PPT writing: 20% Poster writing: 20% Abstract writing: 20% Definition writing: 10% Manual writing: 10%
Office hours	Based on appointment by email or Tue 3.
A message for students	Never allow English to ride on you; you should ride on it (A Chinese proverb). Logic, logic, logic!
Others	Students interested in independent learning and corpus-analysis of English for Science and Technology are specially welcome.
Keywords	graduate school, academic English, presentation, abstract, journal article, research

Quality and Reliability Engineering

General Information

Course name	Quality and Reliability Engineering		
English Course name	Quality and Reliability Engineering		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Course subject		
Department	Department of Informatics		
Lecturer	SUZUKI Kazuyuki (鈴木　和幸)		
Office	West 5-605		
e-mail	suzuki@se.uec.ac.jp, jinlu@se.uec.ac.jp		
Course's URL	http://www-suzuki.se.uec.ac.jp/		
Last updated	2015/03/11 18:15:48	**Status**	Released

Course Description

Topic, goals and objectives	Lot of Japanese products have been spreading out all over the world. One of these reasons is high quality and reliability of Japanese products. Quality control (QC) in Japan has developed after World War 2, and now the Japanese way of QC is adopted in USA, Europe and Asia. In USA, reliability and quality are categorized in different fields but in Japan they are considered to be closely related each other. This lecture course focuses on the philosophy, ideas and scientific method used to build quality and reliability into products and systems. Also, recent development of information technology has been changing the way of QC and Reliability Engineering. This new aspects is also dealt with.
Prerequisites	None
Recommended preparation	None
Course texts and materials	Handout Print
Course content and procedures	1.World Wide Quality Revolution History of Quality and Quality Control, Origin of "Made in Germany", Japanese TQC and its Spread to the World, Rally of USA. 2.Quality Assurance (QA) and Total Quality Management Meaning of Quality, What is QA? New Product Development and QA, Quality Functional Development, Four leading principles of Japanese TQC. 3.Statistical Quality Control QC seven tools, Statistical Process Control, Design of Experiments
Study time (preparing and reviewing)	None
Evaluation method and grading scale（target and standard）	Based on attendance and group discussion
Office hours	Any question is welcome after the lecture
A message for students	This lecture will be given in English. It is a good chance to improve spoken English and make international freinds.
Others	None
Keywords	Quality control, Reliability Engineering, QC seven tools, Design of Experiments

Semiconductor Materials and Devices

General Information

Course name	Semiconductor Materials and Devices		
English Course name	Semiconductor Materials and Devices		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Course subject		
Department	Department of Engineering Science		
Lecturer	NOZAKI Shinji (野崎　眞次)		
Office	East 31-203		
e-mail	nozaki@ee.uec.ac.jp		
Course's URL	none		
Last updated	2015/02/26 10:40:13	**Status**	Released

Course Description

Topic, goals and objectives	In this course you will receive an introduction to the operation and fabrication of the most important semiconductor devices used in integrated circuit technology together with device design and layout. At the end of the course you will have a basic understanding of pn diodes, bipolar transistors, and MOSFETs as well as some light emitting and light detecting devices such as photodiodes, LEDs and solar cells. You will also receive an introduction to the fundamental concepts of semiconductor physics such as doping, electron and hole transport, and band diagrams.
Prerequisites	none
Recommended preparation	Electronic Circuits
Course texts and materials	Modern Semiconductor Devices for Integrated Circuits (Chenming Calvin Hu)
Course content and procedures	1. General Overview of the course, Electrons and Holes in Semiconductors I 2. Electrons and Holes in Semiconductors II 3. Motion and Recombination of Electrons and Holes 4. Device Fabrication Technology 5. PN Junction I 6. PN Junction II 7. Application to Optoelectronic Devices (Slar Cells, LEDs, Diode Lasers, Photodiodes) 8. Metal-Semiconductor Junction 9. MOS Capacitor I 10. MOS Capacitor II 11. MOS Transistor I 12. MOS transistor II 13. MOSFETs in ICs 14. Bipolasr Transitor I 15. Bipolar Transistor II 16. Final Exam (in class) Take Home Exam in the winter holidays
Study time (preparing and reviewing)	The students are adviseed to buy the text and read the assigned chapter before and after the class. The paperback is available at Amazon Bookstore for a lower price.
Evaluation method and grading scale（target and standard）	Based on the scores of the takehome and inclass exams (50% each)
Office hours	After a class or e-mail for an appointment

A message for students	Semiconductors are a key driver of job growth, productivity and innovation throughout the world. The students are encouraged to take the course if they plan to work as engineers in the electronic industry or researchers in the field of semiconductor electronics in future.
Others	The lectures are in English. The credit can be trasferred to "Introduction to Semiconductor Devices" in the undregraduate program of Engineering Science at IE. The students at Department of Engineering Science who are proficient in English are also encouraged to take the course.
Keywords	semiconductor, MOS, IC, LED, solar cell, transistor

Advanced Communication Engineering and Informatics Ⅲ

General Information

Course name	Advanced Communication Engineering and Informatics Ⅲ (Computational Complexity)		
English Course name	Advanced Communication Engineering and Informatics Ⅲ (Computational Complexity)		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Course subject		
Department	Department of Communication Engineering and Informatics		
Lecturer	TARUI Jun (垂井　淳)		
Office	E3-824		
e-mail	tarui@ice.uec.ac.jp		
Course's URL	www.jtlab.ice.uec.ac.jp		
Last updated	2015/03/04 01:39:56	**Status**	Released

Course Description

Topic, goals and objectives	In the academic year of 2015, the subject of this course will be Computational Complexity, which studies questions such as "Which computational problems have efficieint algorithms?" and "Do quantum computers have more computational power than classical computers?" The course will be an introduction to Computational Complexity, and will cover a wide spectrum of topics.
Prerequisites	none
Recommended preparation	Students should have taken an introductory course on algorithms, and should have written at least one computer program.
Course texts and materials	none
Course content and procedures	In the first half of the course, we will dicuss the following various algorithmic paradigms: (1) learning algorithms (2) randomized algorithms (3) approximation algorithms In the second half, we will discuss the following: (1) complexity classes including important classes P and NP (2) theory of NP-completeness (3) theoretical cryptography More spefic plan of 15 lectures is as follows. 1. overview, review of algorithm analysis 2. review of sorting algorithims and their analysis 3. explanation of programming project 4. learning algorithm (1): learning axis-parallel recangles 5. learning algorithm (2): PAC learing paradigm 6. learning algorithm (3): learning conjunctions and DNFs 7. student presentation of progamming project 8. randomized algorithm 9. approximation algorithm 10. complexity classes P and NP 11. NP-completeness (1): reduction 12. NP-completeness (2): 3SAT 13. NP-completeness (3): 3coloring 14. cryptography 15. P vs NP conjecture
Study time (preparing and reviewing)	at least 1.5 hour/week expected
Evaluation method and grading scale（target and standard）	Grading will be based on biweekly homework reports and one programming project. To pass the course, you have to understand at least two-thirds of the topics in class well enough to the extent

	that you can give simple examples for explanation, and you have to complete well at least two-thirds of your homework.
Office hours	TBA
A message for students	Regular UEC students from all departments are very much welcome.
Others	If you have questions about this course, please feel free to ask me by email.
Keywords	algorithm, computational complexity, learning algorithm, NP-completeness

Experimental Electoronics Laboratory

General Information

Course name	Experimental Electoronics Laboratory		
English Course name	Experimental Electronics Laboratory		
Academic Year	2015	**Offered to year**	2/3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Course subject		
Department	Department of Engineering Science		
Lecturer	KISHIMOTO Tetsuo (岸本　哲夫)		
Office	Building East 6, Room 826		
e-mail	kishi(at)pc.uec.ac.jp		
Course's URL	none		
Last updated	2015/03/02 09:07:28	**Status**	Released

Course Description

Topic, goals and objectives	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 preparation	Analysis, especially complex numbers.
Course texts and materials	Text materials or a pdf file will be provided at the class.
Course content and procedures	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 in between. 1) Measurement of resistance. 2) Measurement of complex impedance for C and L. 3) Resonant behavior of LC-circuits. 4) Transient behavior of LC-circuits. 5) Transistor. 6) Operation amplifier and its applications. 7) Logic gates.
Study time (preparing and reviewing)	Please study on the basic techincal terms of the IC you will work on each week.
Evaluation method and grading scale（target and standard）	It is mandatory to finish all the projects 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
A 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.
Keywords	complex impedance, inductor, capacitor, logic gate, operational amplifier, bipolar junction transistor.

Visual Communication

General Information

Course name	Visual Communication		
English Course name	Visual Communication		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Course subject		
Department	Department of Machanical Engineering and Intellignet Systems		
Lecturer	KANEKO Masahide (金子　正秀)		
Office	West 8-514		
e-mail	kaneko@ee.uec.ac.jp		
Course's URL	None		
Last updated	2015/03/02 18:01:56	**Status**	Released

Course Description

Topic, goals and objectives	As represented by the famous proverb "Seeing is believing", visual information plays a very important role in our daily lives. Nowadays digital cameras and digital videos are widely used by many people. Furthermore we enjoy the digital broadcasting at home every day. So the technologies of visual communications are very popular for us. In this class, the fundamentals of visual communication, especially image coding techniques, are lectured from the viewpoint of efficient transmission and storage of image information, and better communication through visual media. International activities to establish the worldwide common standards of image coding are also introduced.
Prerequisites	NIL
Recommended preparation	NIL
Course texts and materials	Original handouts will be prepared in the class.
Course content and procedures	(Outline of Class and Contents) [1] Visual media Definition of "visual media" Classification of "visual media" Use of visual information in the fields of information and communication [2] Fundamentals to handle digital images Definition of "digital image / digital picture" Digitization : sampling + quantization Amount of information contained in digital images Characteristics of human vision [3] Visual communication and Image / Video Coding Role of visual communication and image / video coding Redundancies contained in images and videos Basic methods of image and video data compression predictive coding, transform coding, interframe coding, motion compensation, coding of facsimile (MH, MR, MMR) [4] International standards of image / video coding JPEG, JPEG2000, JPEG XR, Motion-JPEG2000, JBIG H.261, H.263, H-264 (MPEG-4 / AVC), HEVC/H-265 MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21 ◯ JPEG ==> Digital camera, Pictures used in Web site

	MPEG-2 ==> Digital broadcasting (satellite, terrestrial), DVD MPEG-4 ==> Digital movie camera, Video by mobile phone (One segment broadcasting), and so on HEVC/H-265 ==> QVGA -- 8Kx4K(Super High Vision) : High Efficiency Video Coding [5] Video over Internet and over mobile network Internet as transmission media of video Streaming Mobile network as transmission media of video Error resilience coding
Study time (preparing and reviewing)	Preparation is not required. However the intensive review is required for every lesson.
Evaluation method and grading scale（target and standard）	There will be some report requirements on the topics mentioned above during the semester. One examination will be carried out at the end of semester. Assessment in this class will take account of these reports, examination, attendance-rate and contribution for class discussions at the score proportion of 30%, 30%, 20%, and 20% respectively.
Office hours	Before visiting to the office, please make an appointment by using E-mail.
A message for students	Not only attending lessons but also deliberating upon visual communications and their applications deeply.
Others	NIL
Keywords	visual communication, image coding, video coding, digital image, compression, international standard

Advanced Communication Engineering and Informatics Ⅳ

General Information

Course name	Advanced Communication Engineering and Informatics Ⅳ (Computer Algorithms)		
English Course name	Advanced Communication Engineering and Informatics Ⅳ (Computer Algorithms)		
Academic Year	2015	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Course subject		
Department	Department of Communication Engineering and Informatics		
Lecturer	NAKANO Keisuke (中野　圭介)		
Office	West 9 Bldg. 615		
e-mail	ksk@cs.uec.ac.jp		
Course's URL	http://millsmess.cs.uec.ac.jp/class/15algE		
Last updated	2015/03/04 15:42:28	**Status**	Released

Course Description

Topic, goals and objectives	With rapid progress of the computer and information technologies, the theory of computer algorithms is regarded as one of the most important theories in order to use computers smartly. In this lecture, we will learn some methods to analyze and design efficient computer algorithms for several fundamental computing problems. The goal of the lecture is: 1) Understand the behavior, correctness, and the time and space complexity analysis of the algorithms presented at the lecture. 2) Understand principles of basic design methods of computer algorithms, including, greedy method, dynamic programming method, etc.
Prerequisites	The students who take this lecture are assumed to have some basic skills of writing programs in a programming language.
Recommended preparation	Introduction to Discrete Mathematics
Course texts and materials	Textbooks for your study (if you need): - Introduction to Algorithms (3rd edition) By H. Cormen, C. Leiserson, R. Rivest, and C. Stein, MIT Press. - Algorithms By S. Dasgupta, C Papadimitriou, and U. Vaziran, Available online.
Course content and procedures	(a) Contents of the lecture #1 Introduction #2 Divide and Conquer #3 Master Method #4 Randomized Algorithms #5 Minimum Cut Problem #6 Breadth First Search and Depth First Search #7 Dijkstra's Algorithm #8 Floyd-Warshall's Algorithm #9 Minimum Spanning Trees #10 Prim's Algorithms #11 Kruskal's Algorithms #12 Greedy Methods #13 Dynamic Programming Methods #14 Applications of Dynamic Programming #15 Summary and Exam.

	(b) How to proceed the lecture We emphasize and focus on the proof and time complexity analysis of the algorithms. Since it is very important to understand each algorithm theoretically, so that you can design algorithms by yourselves for new problems you faced.
Study time (preparing and reviewing)	Please implement the algorithms you learned using your favorite programming language, if possible.
Evaluation method and grading scale（target and standard）	(a) Evaluation method The grade will be determined by reporting assignments and final examination. (b) Evaluation criteria The students are required to be able to design an efficient algorithm by themselves even for a problem they have never seen.
Office hours	Please send an e-mail to make an appointment.
A message for students	I strongly recommend you to take notes on a lecture and review the contents after every lecture. It will be a short cut to master a skill to design algorithms.
Others	Nothing
Keywords	Algorithms, Computational Complexity, Greedy Method, Dynamic Programming

Fundamental Concepts of Discrete-time Signal Processing

General Information

Course name	Fundamental Concepts of Discrete-time Signal Processing		
English Course name	Fundamental Concepts of Discrete-time Signal Processing		
Academic Year	2015	**Offered to year**	All
Semester offered	Fall semester	**Offered for**	Master and Doctorial
Teaching methods	Lecture	**Credits**	2
Classification	General culture subjects for gradute school		
Department	All		
Lecturer	Hamano Nobuo (浜野　亘男)		
Office	E2-219		
e-mail	n-hamano@office.uec.ac.jp		
Reference's URL	http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/		
Last updated	2015/03/02 10:16:01	**Status**	Released

Course Description

Topic, goals and objectives	An increasing number of electronic systems today, to name a few: television; audio; wireless communication systems; and medical instrumentation rely heavily on digital signal processing technologies for achieving their superb performance and sophisticated functionalities. Also it should be noted that besides discrete-time signals obtained by sampling original continuous-time signals ,there exist many kinds of data or signals that are inherently observable only in discrete-time intervals such as data on economic activities, and spatial distribution of climate data. Now software tools for digital signal processing are widely and readily available for use in a wide variety of science and technology fields as well as economics and social sciences. It is quite important, however, for people using these tools to have a certain level of comprehension on the underlying concepts of digital signal processing technologies so that they can utilize them correctly and interpret their results properly. Considering these backgrounds, the aim of this course is to introduce the basic concepts and techniques underlying the digital signal processing. Through this course students are expected to understand mathematical process of deriving these concepts as well as their significance.
Prerequisites	None
Recommended preparation	Fundamental knowledge of linear systems is helpful. No prior knowledge of discrete time system is assumed.
Course texts and materials	A.V. Oppenheim and R.W. Schafer, Discrete-Time Signal Processing, 3rd edition, Prentice Hall
Course content and procedures	The course will focus on fundamental concepts of discrete-time signals and systems. Along with lectures in the class, reading assignments and homework problems serve as an integral part of the course. Topics covered in the course are as follows, 1. Discrete-time signals and systems - Introduction, discrete-time signals:sequences 2. Discrete-time signals and systems - Discrete-time systems, linear invariant systems 3. Discrete-time signals and systems - Frequency-domain representation of discrete-time signals and systems 4. Discrete-time signals and systems - Fourier Transform theorems 5. The Z-Transform - Z-transform, properties of the region of convergence 6. The Z-Transform - The inverse Z-Transform, Z-Transform properties 7. Midterm examination 8. Sampling of continuous-time signals - Introduction, periodic sampling, frequency domain representation of sampling 9. Sampling of continuous-time signals - Reconstruction of a band-limited signal from its samples 10. Sampling of continuous-time signals - changing the sampling rate using discrete-time processing

	11. Transform analysis of linear time-invariant systems 12. Transform analysis of linear time-invariant systems ? Frequency response for rational system functions 13. Filter design techniques 14. The Discrete Fourier Transform 15. The Discrete Fourier Transform - Linear convolution using the Discrete Fourier Transform, the Discrete Cosine Transform (DCT)
Evaluation method and grading scale（target and standard）	Grade is assessed based on, Final exam.:40%; Midterm exam.:40%; Homeworks:20%
Office hours	Tuesday and Thusday 4th period(14:40 - 16:10) Other time slots may be possible upon appointment
A message for students	The course is conducted entirely in English and it is also offered to international students in the short term exchange program. Each week students will be given 10 to 15 pages of reading assignment and homework problems. Students who are planning to take this course are expected to have certain level of English capability that is enough to tackle these tasks. Those students who have some degree of interest in learning specialty subjects in English are encouraged to take the course.
Others	Should be a good opportunity for students to learn technical aspect of discrete-time signal processing in a totally English speaking environment.
Keywords	Digital signal, convolution, Discrete Time Fourier Transform (DTFT), Discrete Fourier Transform(DFT),Fast Fourier Transform(FFT), Z-transform, System functions, Poles and Zeros, Sampling, Aliasing, IIR filter, FIR filter