Course Description

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

Fall Semester, 2013

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

JUSST Course Requirements

	Subject	1st Semester	2nd Semester
C O R E S U B J E C T S	Japanese Language	**Elementary/Intermediate/Advanced *** 8~14 hours/week (6~7 Credits)	
	Academic Skills I	2 hours/week (2 Credits)	Not required
	Academic Skills II	2 hours/week (2 Credits)	
	Academic Skills III	2 hours/week (2 Credits/one academic year) (1 Credit/one semester)	
	Scientific & Engineering Subjects	**\<Undergraduate Students\>** Need to pass **3 subjects** at minimum** in *Each Semester*. (H-6) .... **\<Graduate Students\>** Need to pass **3 subjects** at minimum** in *One Academic Year*. (H-9)	
		Electronic Experiment Lab. 4 hours/week (2 Credits) All **Undergraduate Students** are required to take. Only offered in the Fall Semester.	
E L E C T I V E	Academic Skills IV	2 hours/week (2 Credits/one semester)	
	Academic Skills V	2 hours/week (2 Credits/one semester)	
	Sports Classes	None	2 hours/week (1 Credit) Only for Seniors
L A B W O R K	Research/Project	**\<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 8hours/week (6 Credits/one academic year) (3 Credits/one semester)	

*) 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 (or take as much as you can) in order to ensure your successful completion of JUSST program. (H-5, H-7)

2013 FALL SEMESTER CALENDAR

OCT

SUN	MON	TUE	WED	THU	FRI	SAT
		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 (Oct 1)
- Opening Ceremony (Oct 7)
- Classes Begin (Oct 8)
- Weekly Meeting Begin (Oct 9)
- 2nd to 7th Orientation Week
- Classes as usual (Health & Sports Day) (Oct 14)
- Classes as usual (Sports Festival) (Oct 15)
- 16th to 23rd Course registration period
- Classes as usual (General Assembly) (Oct 23)

NOV

SUN	MON	TUE	WED	THU	FRI	SAT
					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

- Classes as usual (Culture Day) (Nov 4)
- 21st – 25th No Classes University Festival
- No Classes (substitute holiday) (Nov 25)

DEC

SUN	MON	TUE	WED	THU	FRI	SAT
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 (Dec 23)
- No Classes (substitute holiday) (Dec 24)
- Classes as usual (General Assembly) (Dec 25)
- 23rd Dec to 5st Jan Winter Break

JAN

SUN	MON	TUE	WED	THU	FRI	SAT
			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 (Jan 1)
- 23rd Dec to 5th Jan Winter Break
- Classes Resume (Jan 6)
- Coming-of-Age Day (Jan 13)
- Afternoon no classes (Jan 17)

FEB

SUN	MON	TUE	WED	THU	FRI	SAT
						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	

- National Foundation Day (Feb 11)
- 12th to 18th Examination Period

MAR

SUN	MON	TUE	WED	THU	FRI	SAT
						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					

- Preparing for The mini-Conference
- Spring Equinox Day (Mar 21)
- 19th Feb to 3rd Apr Spring Break
- JUSST mini-Conference and Closing Ceremony (2 days) — Every JUSST student have to attend (Date to be announced)

APR

SUN	MON	TUE	WED	THU	FRI	SAT
		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			

- 19th Feb to 3rd Apr Spring Break
- 2nd semester Class Guidance — All students have to attend

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

14-Oct Classess as usual (Holiday substitute to 24-Dec)
15-Oct 1st – 4th period classes as usual (Sports Festival)
23-Oct 1st – 4th period Classes as usual (General Assembly)
4-Nov Classess as usual (Holiday substitute to 25-Nov)

JUSST Class Time-Table for Fall Semester, 2013
平成25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	Class Room 教室	Note 備考
Mon 月	1					
	2	Computational Complexity	I	Jun TARUI(垂井　淳)	E3-807	
	3					
	4	Quality and Reliability Engineering: The Japanese Way	J	Kazuyuki SUZUKI (鈴木 和幸)　Lu JIN (金　路)	W5-209	
	5	Terrestrial　Electromagnetic Environment	I	Houbara Yasuhide(芳原　容英)	W5-101	
		Go - Playing and Computing	I	Masakazu MURAMATSU(村松　正和)	W4-502	
Tue 火	1	UEC Academic Skills III B (Research & Presentation)	CIPE	Miyabi Hiyama（樋山　みやび）	E3(1F)	
	2	UEC Academic Skills I B (Computer Literacy)	CIPE	Miyabi Hiyama（樋山　みやび）	E3(1F)	
		Life　Long　Learning　Sports(シニアのみ)				
	3	Japanese Language（日本語）	CIPE			
	4	Japanese Language（日本語）	CIPE			
	5	VLSI Devices and Technology	S	Shinji NOZAKI (野﨑　眞次)	E6-204	
		Applicable Modeling with Mathematics B	CIPE	Miyabi Hiyama（樋山　みやび）	E2-B114	
Wed 水	1	UEC Academic Skills II B (Cross-Cultural Communication)	CIPE	Gary Wolff	E2-B117	
	2	Japanese Language（日本語）	CIPE			
	3	Japanese Language（日本語）	CIPE			
	4	Japanese Language（日本語）	CIPE			
	5	UEC Academic Skills VB (Maths & Scientific Writing)	CIPE	Vilma Suero	E2-218	
Thu 木	1					
	2	Interactive Computer Graphics	J	Naoki HASHIMOTO（橋本　直己）	W9-116	
	3	Experimental Electronics Laboratory	S	Shigeo HAYASHI（林　茂雄）	E6-217	
	4					
	5	UEC Academic Skills IV B (Comprehensive Reading & Summary Writing)	CIPE	Eric Lerstrom	E2-218	
Fri 金	1	Japanese Language（日本語）	CIPE			
	2	Japanese Language（日本語）	CIPE			
	3	Computer Algorithms	I	Keisuke NAKANO (中野　圭介)	W9-116	
	4					
	5	Fundamental Concepts of Discrete-time Signal Processing	CIPE	Nobuo HAMANO (濵野 亘男)	E2-B114 or 117	

Deparment　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)

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

UEC CAMPUS MAP

West Campus

East Campus

West Gate

East Gate

Central Gate

To Hachioji

To Shinjuku

Main Gate

To Chofu Station
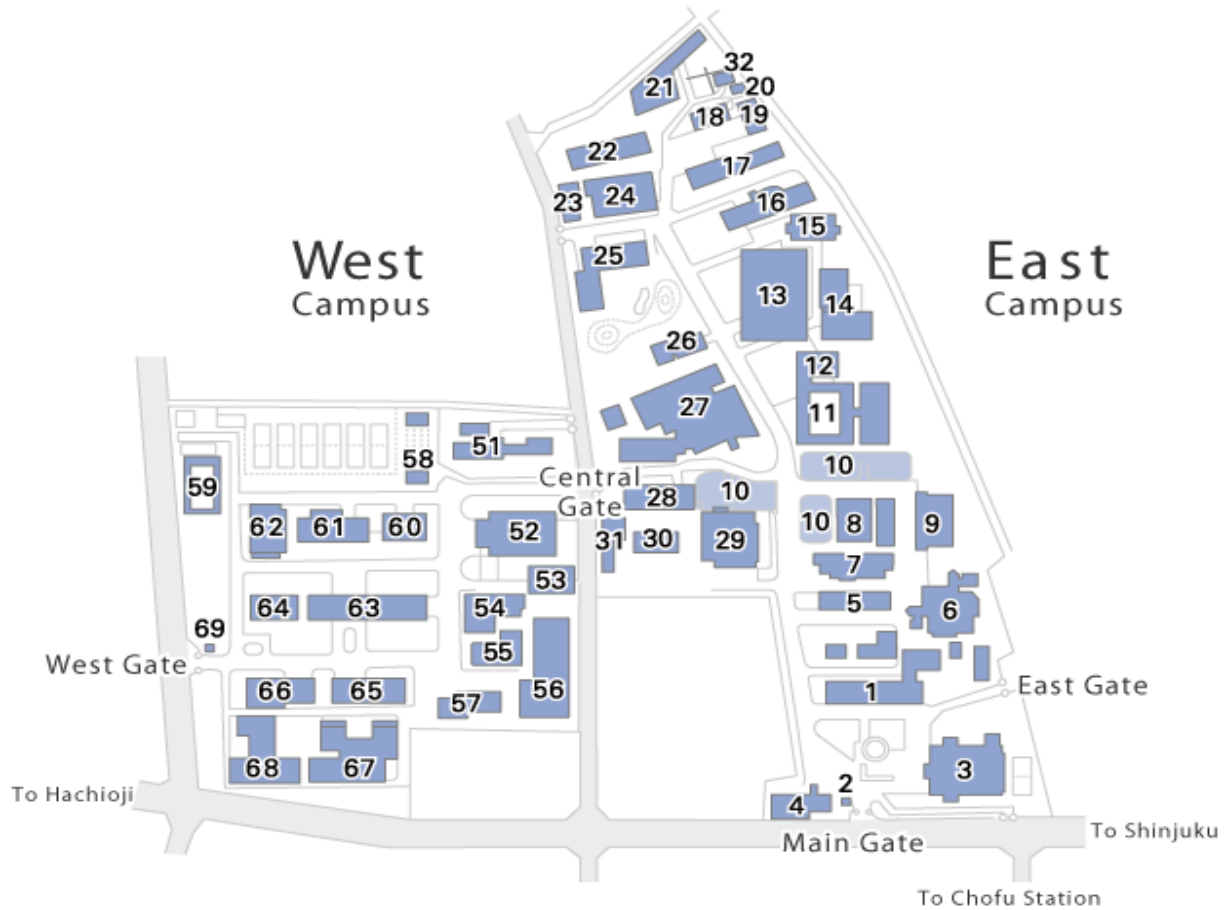
・Main Building（1）
・Auditorium（3）
・80th Anniversary Memorial Hall（4）
・Building E-1（7）
・Building E-2（28）
・Building E-3（27）
・Building E-4（11）
・Building E-5（12）
・Building E-6（13）
・Building E-7（14）
・Building E-8（15）
・Building E-9（16）
・Building E-10（17）
・Building A（5）
・Building B（6）
・Building C（8）
・Building 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）

Contents

UEC Academic Skills I B (Computer Literacy)

General Information

Course name	(G)UEC Academic Skills I B (Computer Literacy)上級科目
English Course name	(G)UEC Academic Skills I B (Computer Literacy)

Academic Year	2013	**Offered to year**	1/2/3/4
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	HIYAMA Miyabi (樋山 みやび)
Office	
e-mail	hiyama@fedu.uec.ac.jp
Course's URL	http://www.fedu.uec.ac.jp/uec-as1/

Last updated	2013/03/28 12:28:04	**Status**	Released

Course Description

Topic, goals and objectives	This course gives the students the intermediate-advances knowledge of computer systems and computer networks in a typical academic environment. Learning by examples is the main characteristic of this course. The first part of each class is the theoretical part given by the instructor. The second part is the practical exercise designed for each core topic. The usage of primitive but powerful tolls such as LINUX shell and HTML is promoted.
Prerequisites	It is good enough if you know how to browse homepages on internet.
Recommended preparation	Not Applicable.
Course texts and materials	http://www.fedu.uec.ac.jp/uec-as1/
Course outline and schedule	Lectures & Hands-On Practice are provided in every Class. —————— Week #1: Introduction to the course Week #2: Linux: file manipulation Week #3: Linux: remote login Week #4: Latex: formatting Week #5: Latex: list & figure Week #6: Latex: cross-references Week #7: HTML: introduction Week #8: HTML: formatting Week #9: HTML: tag Week #10: HTML: list & image Week #11: HTML: link Week #12: HTML: table Week #13: HTML: frame Week #14: HTML: CSS Week #15: HTML: CSS & miscellaneous Week #16: Summary
Study time (preparing and reviewing)	one hour expected every week for assingments of homepage construction and LaTeX documentation
Grading Criteria	There is no examination at the end of semester. However, the evaluation wiil be given according to the following policies: —————— Assignments Except for the projects, all other assignments are designed to be done during the class time. At the end of the theoretical explanation, students are given enough time to make the exercises and finish the assignment for the class. If students are not able to finish the class assignments during the class period, they have until 23:59 of the same day to submit the assignment by email. Assignments sum 20% of the final grade. —————— Evaluation is given as follows; Attendance 20% Assignments 30% Web page 50%

	Total 100 %
Office hours	Tuesdays, 13:00-14:00 at Room 302 of UEC East2 Building. Appointment Essential by E-mail in advance. Inquiries by emails are always welcome.
A message for students	This is offered to foreign students who are from UEC partner universities over the world. It is the best class to make international friends at the same time as to study HTML. ---------- The class contents are designed for all the students capable the followings; To be an intermediate-advanced UNIX user To use network tools for file transfer, encrypted communications, network diagnosis To create and publish hand-made web pages To understand a compiler environment ----------
Others	N/A
Keywords	Computer Literacy

UEC Academic Skills II B (Cross-cultural Communication)

General Information

Course name	(G)UEC Academic Skills II B (Cross-cultural Communication)上級科目		
English Course name	(G)UEC Academic Skills II B (Cross-cultural Communication)		
Academic Year	2013	**Offered to year**	1/2/3/4
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	Gary Wolff		
Office			
e-mail	ikeda@fedu.uec.ac.jp		
Course's URL	http://www.garyjwolff.com		
Last updated	2013/03/25 17:45:23	**Status**	Released

Course Description

Topic, goals and objectives	This class aims to give all the participants of students to communicate with international students and Japanese students under cross-clutural environment. In this day and age, it is becoming increasingly more important to be able to communicate with and understand different cultures. We live in an era of rapid globalization in which being able to communicate across cultures is imperative to our ability to function in a diverse workplace, city, and world. This course will focus on the importance of culture in our everyday lives, and the ways in which culture interrelates with and affects our communication processes. This course is designed for students interested in enhancing their cross-cultural communication skills required in international settings. It will also cover various everyday topics dealing with international culture, enabling students to broaden their global horizons and enhance their understanding of the world.
Prerequisites	You must graduated from a high school with English Study Experience
Recommended preparation	Be brave to speak out.
Course texts and materials	"World Interviews" by Miles Craven Published by Seibido, 2006, ￥2100
Course outline and schedule	1) Our textbook, "World Interviews," is based on exciting interviews with young people from around the world. The course will utilize Lessons 13-24 of this textbook and a CD, plus supplementary learning materials furnished by the instructor. Every class will include pair and/or group discussions of a wide variety of thought provoking topics, ranging from dating and marriage to politics, that will enable students to express their own ideas and opinions while making cultural comparisons. Also included will be listening comprehension practice, vocabulary development, and other exercises to enhance cross-cultural English communication skills. 2) Students will be given the opportunity each week to share their overseas experiences and opinions of other countries by posting their stories in an online forum provided by the teacher. Students will also be expected to comment on stories posted by the other students. 3) At the beginning of each class, at least 1 student will be asked to share a culturally significant current event news story from their home country in the form of a 2-3 minute oral presentation. 4) Students will work together in groups of 3-4 students to study & conduct an in depth cultural comparison of at least 2 countries on various topics such as youth culture, dating and marriage, food and drink, fashion, education, corporate culture & business manners, student life, friendships, family, etc. At the end of the semester, all study groups will be required to give a 10-15 minute presentation, using software like PowerPoint, Keynote, etc., to report on the results of their research. Ideally, time will be given at the end of most every class for these groups to work together, but it is likely that they will also have to meet on occasion outside of classroom hours, particularly toward the end of the semester in preparation for the final presentation.
Study time (preparing and reviewing)	Not specific.

Grading Criteria	Grade will be determined by attendance & in-class performance (30%), homework & assignments (35%), online stories (10%), final group presentation (15%), and short mid-term & final vocabulary quizzes (10%). Because homework and in-class exercises are to be submitted on B5 paper, students are required to bring a B5-size notepad to every class.
Office hours	To be announced at the class.
A message for students	This class will be highly interactive, requiring students to engage in lively pair work and group discussions every week. Only students with a sincere desire to expand their global horizons & improve their cross-cultural English communication skills should join this class. Please bring your positive attitude and be prepared to be an active participant in a very fun learning environment.
Others	See above.
Keywords	Cross-cultural Communication

UEC Academic Skills III B (Research and Presentation)

General Information

Course name	(G)UEC Academic Skills III B (Research and Presentation)上級科目
English Course name	(G)UEC Academic Skills III B (Research and Presentation)

Academic Year	2013	**Offered to year**	1/2/3/4
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	HIYAMA Miyabi (樋山　みやび)
Office	
e-mail	hiyama@fedu.uec.ac.jp
Course's URL	http://www.fedu.uec.ac.jp/uec-as3/

Last updated	2013/03/28 12:32:45	**Status**	Released

Course Description

Topic, goals and objectives	This course designed to provide you research skills and presentation skills for graduate research in the areas of sciences and engineering. You have to proceed a research project yourself. The end of semester, you have to participate in a Mini-International Conference either in a Poster Session or in an Oral Session with International Students and Japanese Students at UEC. This course will be helpful for your presentation.
Prerequisites	Not Applicable.
Recommended preparation	You must have experience to write a report before. Any level of Research Project at a high school or university.
Course texts and materials	N/A
Course outline and schedule	This course consists of lectures and hands-on practice, according to your actual research topic: ————————— Week #1: Introduction to the course Week #2: Linux: permission, Week #3: Linux: processes Week #4: Latex: basic Week #5: Latex: math Week #6: Latex: table Week #7: Structure of abstract Week #8: Writing abstract Week #9: Presentation of Poster presentation Writing 1 Week #10: Presentation of Poster presentation Writing 2 Week #11: Presentation of Poster presentation 3 Week #12: Practice of Oral presentation 1 Week #13: Practice of Oral presentation 2 Week #14: Practice of Poster presentation Week #15: Final exam Week #16: Final exam
Study time (preparing and reviewing)	There are only 6 official classes for instructions during the semester. However, 2 hours progress meeting is required every week with your research members of foreign students for 10 weeks. In this progress meeting, you have to report for what you make progress on your research projects. Essential project hours are estimated for more than 8 hours a week, where this is the same standard of graduate thesis project.
Grading Criteria	There is no examination at the end of semester. However, the evaluation wiil be given according to the following policies: ————————— Assignments Except for the projects, all other assignments are designed to be done during the class time. At the end of the theoretical explanation, students are given enough time to make the exercises and finish the assignment for the class. If students are not able to finish the class assignments during the class period, they have until 23:59 of the same day to submit the

	assignment by email. Assignments sum 20% of the final grade. ―――――――――― Evaluation is given as follows; Attendance 10% Assignments 10% Writing paper 20% Report 20% Preparing poster or oral presentation 40% Total 100 %
Office hours	Tuesday 13:00–14:00 at Room 302 of UEC East2 Building. Appointment Essential by E-mail in advance. Inquiries by emails are always welcome.
A message for students	This is the most useful practice for your research presentation in English at UEC, since more than 20 international students participates in this excercises from more than 10 countries.
Others	N/A
Keywords	Research and Presentation

UEC Academic Skills IV B (Comprehensive Reading and Summary Writing)

General Information

Course name	(G)UEC Academic Skills IV B (Comprehensive Reading and Summary Writing)上級科目
English Course name	(G)UEC Academic Skills IV B (Comprehensive Reading and Summary Writing)

Academic Year	2013	**Offered to year**	1/2/3/4
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	Eric Lerstrom
Office	
e-mail	
Course's URL	NIL

Last updated	2013/04/02 13:58:55	**Status**	Released

Course Description

Topic, goals and objectives	In this class, you will learn comprehensive reading and summary writing for scientific and business purpose. Every week, you will do short or long article reading on scientific and business topics. We expect that you will increase your vocabulary and pick-up short summary skills with keywords. This class is designed for multi-entry of English Proficiency.
Prerequisites	You must graduated from a high school with English Study experience.
Recommended preparation	Not applicable.
Course texts and materials	None
Course outline and schedule	Short Summary Writing Practice within 80-100 words #1 Orientation, Editing #2 Identifying Type of Text and In-Text Resources #3 Outlining #4 Finding Information #5 Academic/Professional Writing #6 Presentation Skills #7 Presentation Preparation #8 Mid-Semester Examination (Presentation) #9 Writing Concepts of Diagrams and Figures #10 Active Reading #11 Identifying Bias #12 Final Project Preparation #13 Types of Academic Writing Styles #14 Presentation Preparation #15 Final Examination (Presentation and Essay) *According to circumstances, the topics may change.
Study time (preparing and reviewing)	You have to read 2 to 3 articles about varied topics in the class and you may take a short test for writing or usages. In the mid-term exam, you are expected to make a presentation. In order to make good preparation for the class, you need to spend more than 1 hour of 3 times every week before the class.
Grading Criteria	Evaluation is given as follows; Attendance 20% Class participation 20% Mid-Semester Examination 20% Final Examination 40% Total 100 %
Office hours	Appointment Essential by E-mail in advance.
A message for students	This is the most practical class to improve English. However, you need to be active to express your toughts or opinions in the class.
Others	Attendance and Punctuality 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. Attendance is weighted as 10% of the final grade. To obtain this 20% the student should have to attend 90% of all classes

		of the semester.
		——————
		Class Participation
		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 open forum.
		——————
		Assigments
		Assignments have to be done during the class time. At the end of the theoretical explanation, students are given enough time to make the exercises and finish the assignment for the class. There will be some homework to be done.
	Keywords	Comprehensive Reading and Summary Writing

UEC Academic Skills V B (Maths and Scientific Writing)

General Information

Course name	(G)UEC Academic Skills V B (Maths and Scientific Writing)上級科目
English Course name	(G)UEC Academic Skills V B (Maths and Scientific Writing)

Academic Year	2013	**Offered to year**	1/2/3/4
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	Vilma Suero
Office	
e-mail	
Course's URL	

Last updated	2013/04/02 14:17:45	**Status**	Released

Course Description

Topic, goals and objectives	In this class, you will develop your mathematical writing skills and scientific writing skills through many writing exercises. Teachers and tutors will correct your writing every week in/out of this class. High School Maths books will be used for the beginning of semester. You will probably be able to read out most university maths expressions by the end of this semester. IELTS base English writing exercise will also be carried out in this class. No advanced contents will be taught, but it is a core subject for all new JUSST Students.
Prerequisites	You must graduated from a high school with English Study.
Recommended preparation	Not applicable.
Course texts and materials	Not applicable.
Course outline and schedule	#1 Writing Comparison between Arts, Diary and Science. #2 Writing Comparison between Journal and Scientific Research #3 Writing Comparison between Mathematics and Sciences #4 Writing Mathematics #1 : Vocaburaries and Expressions #5 Writing Mathematics #2 : Functions and Graphs #6 Writing Physics #1 : Vocaburaries and Expressions in Physical Sciecne #7 Writing Physics #2 : Forces and Energy #8 Writing Physics #3 : Electro-Magnatic Waves and Sound Waves #9 Writing Physics #4 : Climate and Geo-science #10 Writing Chemistry #1 : Vocaburaries and Expressions in Chemical Sciecne #11 Writing Chemistry #2 : Chemical Action and Reaction #12 Writing Biology #1 : Vocaburaries and Expressions in Biological Sciecne #13 Writing Biology #2 : Cells and progress natures in Biology #14 Computer Literacy: Coding for Watermarks #15 Network Communication: Optical Communication and Device Engineering *According to circumstances, the topics may change.
Study time (preparing and reviewing)	You have to master one writing style every weeek in the class. You have to take a short-writing test every week, and you have to take the same exam in your second week. In your second test, you are expected to write a perfect writing without any errors. In order to make good preparation for your short-writing test of every week, you have to spend more than 1 hours of 3 times every week before the class every week.
Grading Criteria	There is no examination at the end of semester. However, the evaluation wiil be given according to the following policies: —————— Assignments Except for the projects, all other assignments are designed to be done during the class time. At the end of the theoretical explanation, students are given enough time to make the exercises and have to finish the assignment in class. Assignments sum 20% of the final grade. —————— Evaluation is given as follows; Attendance 10 % Paritipation by Discussion 10 %

	Weekly Assignments 60 % Project Assignments 20 % Total 100 %
Office hours	Tuesday 12:00-13:00 at P-302 of UEC Building P. Appointment Essential by E-mail in advance.
A message for students	This is the most useful practice for your research presentation in English at UEC, since more than 20 international students participates in this excercises from more than 10 countries.
Others	None
Keywords	Maths and Scientific Writing

Computational Complexity

General Information

Course name	Computational Complexity		
English Course name	Computational Complexity		
Academic Year	2013	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification			
Department	Department of Communication Engineering and Informatics		
Lecturer	TARUI Jun (垂井 淳)		
Office	East 3-824		
e-mail	tarui@ice.uec.ac.jp		
Course's URL	NIL		
Last updated	2013/03/18 15:38:17	**Status**	Released

Course Description

Topic, goals and objectives	Objectives: Computational Complexity studies questions such as "Which computational problems have efficient algorithms?" and "Do quantum computers have more computational power than classical computers?" This course aims to give students an introduction to Computational Complexity.
Prerequisites	none
Recommended preparation	none
Course texts and materials	no required textbook
Course outline and schedule	The first half of the course will be about the following variety of algorithmic paradigms: 1) randomized algorithms, 2) learning algorithms, 3) on-line algorithms, 4) approximation algorithms. The second half will be about: 1) complexity classes including the important classes P and NP 2) theory of NP-completeness 3) Theoretical cryptography.
Study time (preparing and reviewing)	at least 1.5 hours/week expected
Grading Criteria	Based on biweekly homeworks/reports. Roughly, to pass this course, you have to understand the four kinds of algorithms above well enough so that you can give a simple example for at least 3 kinds.
Office hours	To be decided after hearing abput convenient time slots for students
A message for students	I woud like to welcome regular UEC students to take this course.
Others	none
Keywords	algorithms, computational complexity

Quality and Reliability Engineering; The Japanese Way

General Information

Course name	Quality and Reliability Engineering; The Japanese Way		
English Course name	Quality and Reliability Engineering; The Japanese Way		
Academic Year	2013	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification			
Department	Department of Informatics		
Lecturer	SUZUKI Kazuyuki（鈴木　和幸）		
Office	West 5-605		
e-mail	suzuki@se.uec.ac.jp		
Course's URL	http://www-suzuki.se.uec.ac.jp/		
Last updated	2013/07/09 15:50:00	**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 outline and schedule	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
Grading Criteria	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

Terrestrial Electromagnetic Environment

General Information

Course name	Terrestrial Electromagnetic Environment		
English Course name	Terrestrial Electromagnetic Environment		
Academic Year	2013	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification			
Department	Department of Communication Engineering and Informatics		
Lecturer	HOBARA Yasuhide (芳原　容英)		
Office	W2-805		
e-mail	hobara@ee.uec.ac.jp		
Course's URL	http://www.muse.ee.uec.ac.jp/		
Last updated	2013/03/18 12:51:40	**Status**	Released

Course Description

Topic, goals and objectives	Course description: This international course introduces students to the exciting field of electromagnetic phenomena in the vicinity of the Earth in the view point of LAIM (Lithosphere-Atmosphere-Ionosphere-Magnetosphere) coupling. Wide in its scope, particular emphasis is placed on the electromagnetic waves such as the waves in the space environment, waves from thunderstorm and from seismic activity. You will gain greater experience of related research work on above-mentioned topics and have an opportunity to know how the electromagnetic waves contribute to our society monitoring the earth environment.
Prerequisites	Requirements: 　Electromagnetics I and II
Recommended preparation	Requirements: 　Electromagnetics I and II
Course texts and materials	Umran S. Inan, Aziz Inan: Electromagnetic Waves, Prentice Hall,1999.
Course outline and schedule	Course Content: This is a list of typical topics to be offered for the course. ・Space environment (overview) ・Ionosphere and magnetosphere ・Space weather ・Electromagnetic waves in terrestrial atmosphere ・Electromagnetic phenomena associated with seismic activity
Study time (preparing and reviewing)	N/A
Grading Criteria	Assessment: 1. Attendance 2. Reports 3. Presentations (or examinations)
Office hours	Contact: Write me an e-mail
A message for students	N/A
Others	N/A
Keywords	Electromagnetic waves, space plasma, atmospheric electricity, seismo-electromagnetics.

Go – Playing and Computing

General Information

Course name	Go -- Playing and Computing		
English Course name	Go -- Playing and Computing		
Academic Year	2012	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification	Free subjects		
Department	All departments		
Lecturer	MURAMATSU Masakazu (村松　正和)		
Office	West 4-510		
e-mail	muramatu@cs.uec.ac.jp		
Course's URL	none		
Last updated	2012/03/28 22:19:43	**Status**	Released

Course Description

Topic, goals and objectives	GO is a board game played by putting black and white stones alternately. The rule is extremely simple, but you must learn many tactics to play GO. Strategy is also important, and even more difficult to master. Japan, China, and Korea have professional GO players organization. While computers can easily beat the best human player in Chess, it is only these several years that computers can play GO as well as average amateur players. In this sense, GO is by far deep and difficult. In the first part, you learn how to play the game of GO. Then, the course is focused on developing programs to play GO. Various techniques needed in writing such programs are shown. We will also plan a visit to Nihon-kiin, the professional Go player organization in Japan, located in Ichigaya.
Prerequisites	none
Recommended preparation	none
Course texts and materials	none
Course outline and schedule	1 Introduction -- Part I -- 2 Capturing Game 3 Capturing Technique 4 The Rule of Go and Basic Tactics 5 Dead or Alive 6 Kou: The Rule Revisited 7 Playing GO I 8 Playing GO II 9 Playing GO III -- Part II -- 10 Playing GO with Software 11 Game Tree -- Why is it difficult to compute Go? 12 Monte-Carlo Tree Search I 13 Monte-Carlo Tree Search II 14-15 Visiting Nihon-kiin (Ichigaya; Outside the campus) --
Study time (preparing and reviewing)	Play Go at least an hour every week other than the class.
Grading Criteria	Attendance 60%, Report 40%.
Office hours	Monday, after the class.
A message for students	Enjoy the deep, mysterious game.
Others	none
Keywords	Go, Game tree, alpha-beta search, Monte-carlo search.

VLSI Devices and Technology

General Information

Course name	VLSI Devices and Technology		
English Course name	VLSI Devices and Technology		
Academic Year	2013	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification			
Department	Department of Engineering Science		
Lecturer	NOZAKI Shinji (野崎 眞次)		
Office	East31-203		
e-mail	nozaki@ee.uec.ac.jp		
Course's URL	none		
Last updated	2013/09/19 10:56:52	**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 outline and schedule	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.
Grading Criteria	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

Applicable Modelling with Mathematics

General Information

Course name	(G)Applicable Modelling with Mathematics #2上級科目		
English Course name	(G)Applicable Modelling with Mathematics #1		
Academic Year	2013	**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	HIYAMA Miyabi（樋山　みやび）		
Office	E2-302		
e-mail	hiyama@fedu.uec.ac.jp		
Course's URL	http://		
Last updated	2013/03/28 14:22:34	**Status**	Released

Course Description

Topic, goals and objectives	There are a lot of challenges and difficulties to establish appropriate & proper modellings, although computational simulation has become common approach to analyse in the areas of sciences and engineering. Then, computation is not a key, but it is rather issues of modelling process and techniques which take acount of appropriate conditions and proper nature of science & engineering. This class aims to do brain storming with several keynote topics of dynamics. From this excercise, we focus attention on how to establish proper modeling with mathematics for your needs.
Prerequisites	Students are require to be confident with Ordinary Differential Equations, Partial Differential Equations.
Recommended preparation	N/A
Course texts and materials	N/A
Course outline and schedule	This course consists of lectures and hands-on practice. ──────── Week #1: Introduction to the course Week #2: Diagonalization algorithm of matrix Week #3: Programing of matrix diagonalization Week #4: Programing with existing algorithm of matrix diagonalization Week #5: Comparison of diagonalization algorithms Week #6: Algorithm for numerical solution of integral equations Week #7: Programing of numerical solution of integral equations Week #8: Programing with existing algorithm of integral equations Week #9: Comparison of algorithms for solution of integral equations Week #10: Review 1 Week #11: Algorithm for numerical solution of integral equations Week #12: Programing of numerical solution of integral equations Week #13: Programing with existing algorithm of integral equations Week #14: Comparison of algorithms for solution of integral equations Week #15: Review 2
Study time (preparing and reviewing)	Every topic will be given as a homework everyweek, and you have to bring you prospective answers in the class of the following week.
Grading Criteria	Attendance 10% Homework 20% Presentation 20% Report - 50 % Total -100%
Office hours	Before or after this class
A message for students	N/A
Others	N/A
Keywords	Ordinary Differential Equations, Partial Differential Equations.

Interactive Computer Graphics

General Information

Course name	Interactive Computer Graphics		
English Course name	Interactive Computer Graphics		
Academic Year	2013	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification			
Department	Department of Informatics		
Lecturer	HASHIMOTO Naoki (橋本 直己)		
Office	West 9- 603		
e-mail	international@ims.cs.uec.ac.jp		
Course's URL	http://www.ims.cs.uec.ac.jp/~naoki/lecture/international/2013/		
Last updated	2013/05/20 13:09:57	**Status**	Released

Course Description

Topic, goals and objectives	Computer graphics, and the applications of interactive virtual reality technology, It is broadly from the foundation to application. The class is carried out in English.
Prerequisites	Nothing in perticular
Recommended preparation	Computer architecture, Graphics-based programming such as OpenGL
Course texts and materials	Nothing in perticular. Lecture materials are all online, do prepare, and review after lecture.
Course outline and schedule	1) Introduction of this lecture, and History of Computer Graphics 2) Computer Graphics(1) 3) Computer Graphics(2) 4) Computer Graphics(3) 5) Virtual Reality 6) Immersive Projection Technology 7) Projector and Motion Capture 8) Cancelled (Chofu Festival) 9) 3D Computer Graphics 10) GPU Technology 11) Stereoscopic Image Technology 12) CG Animation 13) Latest Interface Technology 14) Student Presentation (1) 15) Student Presentation (2)
Study time (preparing and reviewing)	I want you to review by utilizing the lecture materials. Moreover, you have to make a presentation which summarized the idea (an individual or group) in the latter half of the lecture, do spend time on the preparation.
Grading Criteria	The marks are given for the presentation, report, and final examination. Averaged 25%, report 25%, presentation 25%, and final examination (or report) 25%.
Office hours	Lunch time after the lecture. Others contact by email.
A message for students	This course is basically designed for international students, but if you wish to interact with international students are always welcome. Those who want to take lecture in Japanese are recommended to take the Japanese "computer graphics" course.
Others	Nothing in perticular.
Keywords	Computer Graphics, Virtual Reality, Interactive Techniques

Experimental Electoronics Laboratory

General Information

Course name	Experimental Electoronics Laboratory
English Course name	Experimental Electoronics Laboratory

Academic Year	2013	**Offered to year**	2/3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture/Experiment	**Credits**	2

Classification	Course subject
Department	Department of Engineering Science
Lecturer	HAYASHI Shigeo (林 茂雄)
Office	Building East 6, Room 716
e-mail	hays(at)pc.uec.ac.jp
Course's URL	http://www.hl.pc.uec.ac.jp/hays/electronics/eindex.html

Last updated	2013/03/04 18:07:30	**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	You should download the textbook, a pdf file, from the above-mentioned web site.
Course outline and schedule	A student builds the following seven 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)	Read the textbook before the experiment to solve the problems therein.
Grading Criteria	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	Thursday, 5th hr.
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.

Computer Algorithms

General Information

Course name	Computer Algorithms		
English Course name	Computer Algorithms		
Academic Year	2013	**Offered to year**	3/4
Semester offered	Fall semester	**Offered for**	Faculty of Informatics and Engneering
Teaching methods	Lecture	**Credits**	2
Classification			
Department	Department of Engineering Science		
Lecturer	NAKANO Keisuke (中野 圭介)		
Office	West 9 Bld. 615		
e-mail	ksk@cs.uec.ac.jp		
Course's URL	http://millsmess.cs.uec.ac.jp/class/13algE/		
Last updated	2013/03/29 20:31:53	**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 effectively and smartly. In this lectre, we will learn some methods to analyze and design efficient computer algorithms for several fundamental computing problems. The following is the goal of this lecture: 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	It is required for the students who take this lectre, to have some basic skills of writing C programs.
Recommended preparation	Introduction to Discrete Mathematics.
Course texts and materials	Some handouts will be provided.
Course outline and schedule	(a) Contents of the lecture 1 : Introduction 2 : Data Structures 3 : Minimum Spanning Tree 4 : Kruskal's Algorithm 5 : Prim's Algorithm 6 : Shortest Path Problem 7 : Floyd Warshall's Algorithm 8 : Dijkstra's Algorithm 9 : Greedy Method and Dynamic Programming Method 10 : Example Applications of Greedy Method 11 : Example Applications of Dynamic Programming Method(1) 12 : Example Applications of Dynamic Programming Method(2) 13 : String Maching Algorithm(1) 14 : String Maching Algorithm(2) 15 : Summary (b) How to proceed the lecture We emphasize and focus on the proof and time complexity analysis of the algorithms, since theoretical understanding of algorithms is very important when you apply the design methods to new encoutered problems.

Study time (preparing and reviewing)	Please implement the algorithms, if possible.
Grading Criteria	(a) Evaluation Method By evaluating some reporting assignments. (b) Evaluation Criteria I evaluate the reporting assignments according to how much extent the students achieve the goal of this lecture above.
Office hours	Please send an e-mail to make an appointment.
A message for students	No messages.
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	2013	**Offered to year**	All
Semester offered	Fall semester	**Offered for**	undergraduate and graduate students
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	2013/10/04 16:33:50	**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, 2nd edition, Prentice Hall
Course outline and schedule	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)
Grading Criteria	Grade is assessed based on, Final exam.:40%; Midterm exam.:40%; Homeworks:20%
Office hour	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