

[Title]			[Instructor]		
Security and Safety Management			Takeyasu Suzuki / Yasunori Hada		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327650	2	Human Oriented Engineering	1st Semester	Fri./II	English/ Japanese
[Outline and purpose]					
This course gives a fundamental on both risk management and crisis management. To facilitate understanding of these issues concerning business for students, this course adopts methods of exercise and discussion on purpose.					
[Objectives]					
<ol style="list-style-type: none"> 1. to understand the state of the art on disaster management in Japan 2. to acquire fundamental knowledge on risk management and crisis management 					
[Requirements]					
Nothing in particular					
[Evaluation]					
Report: 50 % Presentation: 50%					
[Textbooks]					
[References]					
自治体危機管理研究会：実践から学ぶ危機管理、都政新報社、2006年 (in Japanese) 東京商工会議所：危機管理対応マニュアル、サンマーク文庫、2009年 (in Japanese)					
[Schedule]					
<ol style="list-style-type: none"> 1. Introduction 2. Environment of disaster occurrence surrounding Japan 3. Risk management and crisis management 4. Methods in safety engineering (1) 5. Methods in safety engineering (2) 6. BCP 7. Exercise (1) 8. Presentation and discussion (1) 9. Crisis communication 10. Exercise (2) 11. Presentation and discussion (2) 12. Exercise (3) 13. Presentation and discussion (3) 14. Summary 15. Final examination (report) 					

[Title]			[Instructor]		
Applied Disaster and Crisis Management			Takeyasu Suzuki / Yasunori Hada et. al.		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327655	2	Human Oriented Engineering, Civil and Environmental Engineering, River Basin Environmental Science	Intensive	/	Japanese
[Outline and purpose]					
This course gives basic knowledge on disaster and crisis management. Practical exercises and group works for obtaining skills for disaster and crisis management are also included. This course provides qualifications of candidacy for an exam of Japan Bousaisi Organization, NPO.					
[Objectives]					
<ol style="list-style-type: none"> 1. to understand fundamental mechanisms on natural disasters. 2. to understand fundamental knowledge on disaster and crisis management 3. to acquire facilitation skill through practical exercises 					
[Requirements]					
Nothing in particular					
[Evaluation]					
End-of-term examination: 100%					
[Textbooks]					
Textbook is not designated.					
[References]					
Nothing special.					
[Schedule]					
<ol style="list-style-type: none"> 1. Natural disasters in Yamanashi (earthquake) 2. Natural disasters in Yamanashi (windstorm and flood) 3. Earthquake disaster 4. Windstorm and flood disaster 5. Sediment disaster 6. Volcanic disaster 7. Disaster information and management 8. Crisis management and BCP 9. Meteorological information 10. Regional Disaster Management 11. Exercise (1) 12. Exercise (2) 13. Exercise (3) 14. Exercise (4) 15. Summary and final examination 					

[Title]			[Instructor]		
Advanced Urban Transport Design			Kuniaki Sasaki		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327660	2	Human Oriented Engineering	2nd Semester	Mon./II	Japanese
[Outline and purpose]					
<p>This lecture focuses on the behavior of human on a travel environment and instructs the theoretical and statistical modeling of travel behavior. The travel behavior models are usually applied to the travel demand forecasting in micro scale. The application of model to a policy analysis is the final goal of this lecture. The students find the optimal solution of the transport policy using micro-scale demand forecasting models.</p>					
[Objectives]					
<ol style="list-style-type: none"> 1. To understand the theoretical background of the discrete choice models 2. To acquire the skill of applying discrete choice models to actual travel behavior 					
[Requirements]					
A grounding of statistics and micro-economics					
[Evaluation]					
Final presentation of urban design : 60% unscheduled reports : 40%					
[Textbooks]					
[References]					
Ben-Akiva, M. and S. Lerman, Discrete choice analysis: theory and application to travel demand, The MIT Press.					
[Schedule]					
<ol style="list-style-type: none"> 1. Introduction 2. Micro economic theory 1 3. Micro economic theory 2 4. Utility Maximizing 5. Binary choice model1 6. Binary choice model2 7. IID problem and nested choice model 8. Nested choice models with complex correlation 9. Travel survey 10. Application to the actual data1 (Model estimation) 11. Application to the actual data3 12. Application to the actual data3 13. Application to the actual data4 14. Presentation of the estimated models1 15. Presentation of the estimated models2 					

[Title]			[Instructor]		
Advanced Image Processing			Shinji Kotani		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327670	2	Human Oriented Engineering	1st Semester	Wed./II	Japanese
[Outline and purpose]					
Starting with how our eyes recognize edges, lines, shape and color, we will explain important issues such as color space, measurement of color and their practical applications for engineering design.					
[Objectives]					
<ol style="list-style-type: none"> 1. Being able to explain how our eyes recognize edges, lines, shape and color. 2. Understand several color systems and difference between them. 3. Instrument of measuring digital images 4. Translate Analog figures to digital ones 5. Get used to tools for handling digital images and simulate digital images on PC. 					
[Requirements]					
Fundamental knowledge about spectra of light and some mathematical skill for vector space					
[Evaluation]					
final examination: 50% presentation: 50%					
[Textbooks]					
Not Specified.					
[References]					
Not Specified.					
[Schedule]					
We will go through following issues. The order of explanation may be subjected to change. <ol style="list-style-type: none"> 01. Introduction 02. Structure of our eyes and how they recognize edges, lines, shape and color 03. Color image, Gray scale image and Binarized image 04. Dilation and erosion of the shape 05. Pattern recognition, Feature, Moment 06. Presentation 0 07. Difference of spectra of light and color space. 08. How we estimate light and shadow 09. Representation of color, i.e. Munsell color system, RGB and CMYK are color models and so on 10. Conversion analog color to digital representation 11. Composition and decomposition of digital images using image manipulation tools on PC. 12. Presentation 1 13. Presentation 2 14. Presentation 3 15. Presentation 4 					

[Title]			[Instructor]		
Microelectronics			Hatsuhiko Kato		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327680	2	Human Oriented Engineering	1st Semester	Tue./III	English/ Japanese
[Outline and purpose]					
As a principle to thrive the technology, the mutual development of fine fabrication and device features of LSI system are discussed with regarding to device scaling. An emerging technology of resent development shall be researched by recently published technical papers.					
[Objectives]					
A) Fine fabrication technologies of lithograph 2B MOS device modeling C) Architecture of memory device D) Research of resent papers on microelectronics					
[Requirements]					
Elementary knowledge on 1) semiconductor, 2) electronic circuits, 3) differential equations.					
[Evaluation]					
1) Report and its illustration details (67%) 2) Discussions at the classrooms (33%)					
[Textbooks]					
[References]					
T. Enomoto "CMOS integration circuits". Baifu-kan					
[Schedule]					
A. Device structure <ol style="list-style-type: none"> 1. Materials and film technology 2. Carrier implantation 3. Transistor structures 4. MOS modeling 5. Scaling B. Fabrication technology <ol style="list-style-type: none"> 1. Total aspect on fine fabrications 2. Lithography and patterning 3. Unit processes and through process 4. 3D fabrication C. Integrated circuits technology <ol style="list-style-type: none"> 1. Circuits I (Logic and MUX/DMUX) 2. Circuits II (Current mirror and sense amplifier) 3. Architecture and layout design D. Research on papers <p>Using an recent paper on microelectronics, an emerging technology</p> <ol style="list-style-type: none"> 1. Briefing and instructions on the paper 2. Debating on the explored object 					

[Title]			[Instructor]		
Bio-Medical Signal Processing					
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327690	2	Human Oriented Engineering	This subject isn't offered.		Japanese
[Outline and purpose]					
<p>There are many kinds of biomedical signal, which are used for medical diagnosis, healthcare, developing products and scientific researches. Engineers must understand the characteristics of biomedical signals to employ them for R&D. In this class, you will study some important biomedical signals and industrial use of them.</p> <p>In addition, the enrollees are required to propose a new industrial use of biomedical signals and to discuss it with the other members.</p>					
[Objectives]					
<ol style="list-style-type: none"> 1. to understand the recording and analysis technology of biomedical signals 2. to understand the characteristics of biomedical signals 3. to project an industrial development using biomedical signals 					
[Requirements]					
linear algebras and digital signal processing theory					
[Evaluation]					
report and oral presentation: 100%					
[Textbooks]					
handout					
[References]					
[Schedule]					
<ol style="list-style-type: none"> 1. Introduction 2. Cranial nervous system: EEG 3. Cranial nervous system: evoked potential, tomographic image of brain, image of higher brain function 4. Circulatory system: ECG, echocardiograph 5. Digestive system: MRI, X-ray CT, EGG, bowel sound 6. Musculoskeletal system: EMG 7. Ultrasound imaging 8. Biological signals for kansei engineering 9. Proposal regarding industrial use of biological signals and discussion 10. Proposal regarding industrial use of biological signals and discussion 11. Proposal regarding industrial use of biological signals and discussion 12. Proposal regarding industrial use of biological signals and discussion 13. Proposal regarding industrial use of biological signals and discussion 14. Proposal regarding industrial use of biological signals and discussion 15. Proposal regarding industrial use of biological signals and discussion 					

[Title]			[Instructor]		
Advanced Techniques of Simulation			Shinji Kotani		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327701	2	Human Oriented Engineering	Intensive	/	English/ Japanese
[Outline and purpose]					
<p>Today, science and technology have become large-scale influence for us. In order to construct a variety of system management in various fields of engineering, simulation techniques is one of the effective means. A review of probability and statistics, in this lecture in various fields of engineering. I learned about simulation techniques with a focus on the Monte Carlo method in.</p>					
[Objectives]					
Using knowledge of probability and statistics, give such power can be simulated for a variety of events.					
[Requirements]					
Requires knowledge of basic probability and statistics.					
[Evaluation]					
homework : 20% midterm and final examination : 60% presentation : 20%					
[Textbooks]					
Text will introduce during the lesson.					
[References]					
[Schedule]					
<ol style="list-style-type: none"> 1. The concept of simulation 2. The concept of probability and statistics (1) 3. The concept of probability and statistics (2) 4. The concept of probability and statistics (3) 5. Population and its distribution (1) 6. Population and its distribution (2) 7. Statistics exercises and presentations (1) 8. Statistics exercises and presentations (2) 9. Sampling with computer 10. Execution of the simulation procedure (1) 11. Execution of the simulation procedure (2) 12. Application of Simulation (1) 13. Application of simulation (2) 14. Application of simulation (3) 15. Comprehensive evaluation 					

[Title]			[Instructor]		
Human-Oriented Machinery & Manufacturing System			Shin-ichiro Hira		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327710	2	Human Oriented Engineering	2nd Semester	Wed./III	Japanese
[Outline and purpose]					
Materials and processing methods for manufacturing of human-oriented machineries are illustrated. And some examples of human-oriented machinery are presented and discussed. Furthermore, in order to well understand the human-oriented machinery, presentation and discussion of other examples are also done by students.					
[Objectives]					
<ol style="list-style-type: none"> 1. to understand human-oriented machinery 2. to understand the optimum material for manufacturing of human-oriented machinery 3. to understand the best choice of processing method for manufacturing of human-oriented machinery 					
[Requirements]					
A grounding in materials science and processing					
[Evaluation]					
Homework : 20% Attendance : 30% Presentation and discussion : 50%					
[Textbooks]					
[References]					
[Schedule]					
<ol style="list-style-type: none"> 1. Introduction : about human-oriented machineries 2. Example of human-oriented machinery (1) 3. Example of human-oriented machinery (2) 4. The need to choose the optimum material and processing method for manufacturing of human-oriented machinery 5. Mechanical properties of materials 6. Reinforcement process (1) : heat treatment 7. Reinforcement process (2) : other treatment 8. Other properties of materials 9. Various types of processing methods 10. Mechanical (traditional) processing 11. Electrochemical processing 12. Other types of processing methods 13. Biocompatibility of various materials 14. Presentation and discussion (1) 15. Presentation and discussion (2) 					

[Title]			[Instructor]		
Thin Film Metrology			Eiichi Kondoh		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327725	2	Human Oriented Engineering	1st Semester	Mon./II	Japanese
[Outline and purpose]					
Thin films are currently widely used in the industry, as well as in basic researches, from semiconductors to hard coatings to optics. Determination of film thickness is essential and many techniques are available without deep understandings. This course aim to understand principles and applications of thin film metrology.					
[Objectives]					
<ol style="list-style-type: none"> 1. To understand basic thin film processes. 2. To understand various basic thin film metrologies. 					
[Requirements]					
<ol style="list-style-type: none"> 1. Interests in thin film processing 2. Basic knowledge in the math of complex numbers. 					
[Evaluation]					
<ol style="list-style-type: none"> 1. Reports and small exams/ 80% 2. Daily efforts/ 20% 					
[Textbooks]					
H. G. Tompkins, "A User's Guide to Ellipsometry", Dover Publications, ISBN-10: 0486450287					
[References]					
H. Fujiwara, "BUNKOU ERIPSOMETORII", 2 nd ed., Maruzen, ISBN 4621083228 (in Japanese) H. Fujiwara, "Spectroscopic Ellipsometry: Principles and Application", Wiley, ISBN 0470016086					
[Schedule]					
<ol style="list-style-type: none"> 1. Course guidance 2. Applications of thin films 3. Physical vapor deposition 4. Chemical vapor deposition 5. Physical properties of thin films 6. Electromagnetic optical approach for thickness measurement 7. Thin film optics 8. Interferometric techniques 9. Polarized light and thin films 10. Ellipsometry 11. Ellipsometer 12. Ellipsometry on-site practice 13. Theory of ellipsometry 14. Computations in ellipsometry 15. Profilometer 					

[Title]			[Instructor]		
Advances in Plasma Processing			Tetsuya Akitsu		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327735	2	Human Oriented Engineering	2nd Semester	Wed./II	Japanese
[Outline and purpose]					
This lecture focuses on the behavior of ionized gases at low and normal atmospheric pressure and instructs the theoretical and statistical modeling of ionized particles. The cold plasma model described conceptual behavior of electron and fluid but suggests useful insights into large scale plasma applications.					
[Objectives]					
<ol style="list-style-type: none"> 1. To understand the theoretical and statistical model of the ionized gases 2. To acquire the skill to describe the basic behavior of plasma particles 					
[Requirements]					
A grounding of physics/electromagnetic					
[Evaluation]					
Discussions 65% Unscheduled presentation of research report 35 %					
[Textbooks]					
[References]					
Michael A Lieberman and Allan J. Lichtenberg Principle of Plasma Discharges and Materials Processing, Wiley					
[Schedule]					
<ol style="list-style-type: none"> 1. Introduction to Plasma Physics 2. Gaseous Electronics 1 3. Gaseous Electronics 2 4. Gaseous Electronics 3 5. Application to Micro Electronics 1 6. Application to Micro Electronics 2 7. Application to Micro Electronics 3 8. Waves in Magnetized Plasma 1 9. Waves in Magnetized Plasma 2 10. Application in Plasma Medicine1 11. Application in Plasma Medicine2 12. Application in Plasma Medicine3 13. Application in Plasma Medicine 4 14. Presentation of research results 1 15. Presentation of research results 2 					

[Title]			[Instructor]		
Skin Optics			Kazumi Fujima		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327740	2	Human Oriented Engineering	2nd Semester	Wed./II	Japanese
[Outline and purpose]					
<p>This lecture has two ends. One of them is to understand the property of light scattering and absorption in random media, i.e., radiation energy transfer in complex scatters and absorbers. The other one is to apply the this formalism for human skin and to investigate and control optical properties of the skin.</p>					
[Objectives]					
<ol style="list-style-type: none"> 1. To understand the theories of radiation energy transfer. 2. To be able to apply upper theories to skin and get the comprehensive knowledge about skin optics 					
[Requirements]					
The basic knowledge on electromagnetic field, geometrical and wave optics.					
[Evaluation]					
The final report : 60% unscheduled reports : 40%					
[Textbooks]					
[References]					
Akira Ishimaru: Wave Propagation and Scattering in Random Media, Oxford University press. R. Siegel & J. Howell: Thermal Radiation Heat Transfer, Taylor & Francis, New York.					
[Schedule]					
<ol style="list-style-type: none"> 1. Structure of human skin 2. Experimental study of inner structure of skin. 3. Optical scattering by plane but layered materials. 4. Effect of surface roughness upon light reflection. 5. Formal theory of scattering and transfer equation. 6. Rayleigh scattering and Mie scattering. 7. Scattering and absorption by non-spherical materials. 8. Review of theory of radiation energy transfer. 9. Optical spectra of fair and dale skins, roles of hemoglobin and melanin 10. Optical properties of aged and/or stained skin 11. Numerical simulation 1. Lay tracing method, Monte Calro Method. 12. Numerical simulation 2. Finite Differential Time domain Method 13. How to modify skin color. Function of basic cosmetic powders. 14. Sun screen materials to prevent harmful Ultra-violet light 15. Review of skin optics and future problems. 					

[Title]			[Instructor]		
Advanced Ultrasonic Engineering			Takaaki Ishii		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327750	2	Human Oriented Engineering	1st Semester	Tue. / IV	English / Japanese
[Outline and purpose]					
Ultrasonic vibration has very high frequency and is not audible. A lot of researches were carried out because of its unique characteristics. In this course, fundamentals of the ultrasonic technology are lectured and some applications are presented and discussed.					
[Objectives]					
1. Understanding the ultrasonics.					
[Requirements]					
Fundamental knowledge of mathematics, physics, chemistry and materials.					
[Evaluation]					
Report : 60% Attendance : 40%					
[Textbooks]					
None.					
[References]					
1. 超音波工業会（編）：はじめての超音波、工業調査会、2004（in Japanese） 2. Kenji Uchino : Ferroelectric devices, Marcel Dekker (2000) 3. Kenji Uchino, Jayne Giniewicz : Micromechatronics, Marcel Dekker (2003)					
[Schedule]					
1. Introduction to the ultrasonics 2. Important background for the ultrasonics 3. Applications of the ultrasonics 4. Pulse-echo applications 5. High power applications 6. Ultrasonic transducers 7. Piezoelectric ceramics 8. Piezoelectric / Electrostrictive effect 9. Piezoelectric formula 10. Equivalent circuit of the ultrasonic transducer 11. Driving method of the ultrasonic transducer 12. Applications using ultrasonic transducer 13. Ultrasonic motors 14. Applications of the ultrasonics (cleaning, levitation, welding, etc.) 15. Applications of the ultrasonics (sensors, motors, etc.)					

[Title]			[Instructor]		
Special Lecture on Organic Materials Science			Kazuya Ogawa		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327755	2	Human Oriented Engineering	1st Semester	Thu./III	English/ Japanese
[Outline and purpose]					
Organic functional materials play an important role in the technology supporting the social foundation in the 21st century. In this lecture, those materials will be discussed based on the molecular science to understand them from the view point of optical, electronic, and magnetic properties.					
[Objectives]					
To understand organic materials from the view point of their optical, electronic, and magnetic properties.					
[Requirements]					
Fundamental chemistry					
[Evaluation]					
Report 70%					
Attendance 30%					
[Textbooks]					
[References]					
[Schedule]					
1 Introduction to organic functional materials 2 Photochemistry of organic compound 3 OEL 4 Molecular memory 5 Liquid crystal 6 Magnetic materials 7 Molecular machine 8 Organic nonlinear optical materials 9 Conductive organic materials and molecular wire 10 Photoelectric conversion 11 Electrochromic materials 12 Polymer					

[Title]			[Instructor]		
Quantum Optics			Tetsuo Harimoto		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327760	2	Human Oriented Engineering	1st Semester	Wed./III	Japanese
[Outline and purpose]					
<p>This course involves the principle of laser and nonlinear optics. Emphases are on development of ultrahigh intensity and ultrashort laser pulses, short wavelength generation and optical parametric amplification. In addition, some recent subjects on the quantum electronics will be provided. It meets the needs of many students with interests in the applied physics and provides students with a general feel for the subject of laser and nonlinear optics.</p>					
[Objectives]					
<p>To introduce students to the use of Maxwell and Schrodinger equations. To allow students to learn the propagation, diffraction and interference of laser. To introduce students to the generation of an ultrahigh intensity and ultrashort laser pulse. To introduce students to the optical parametric amplification. To introduce students to the second-harmonic generation.</p>					
[Requirements]					
Electromagnetics and quantum mechanics.					
[Evaluation]					
Attendance: 20% Homework : 80%					
[Textbooks]					
[References]					
後藤俊夫、森正和、量子エレクトロニクス、昭晃堂、ISBN:4785621516 (in Japanese)					
[Schedule]					
1. Maxwell and Schrodinger Equations 2. Propagation, Diffraction and Interference of Optical Waves 3. Quantum Theory of Light 4. Application of Schrodinger Equation to Quantum Devices 5. Principle of Laser 6. Laser Oscillation 7. Laser Control and Measurement 8. Laser System: Semiconductor Laser 9. Laser System: Solid-State Laser 10. Laser System: High Power Laser 11. Second-Harmonic Generation of Ultrashort Laser Pulses 12. Optical Parametric Amplification of Chirped Laser Pulses 13. Laser Processing 14. Laser Fusion					

[Title]			[Instructor]		
Advanced Tribology			Kazuyoshi Ishida		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327761	2	Human Oriented Engineering	2nd Semester	Fri./II	Japanese
[Outline and purpose]					
Tribology is the science and technology of interacting surfaces in relative motion and of related subjects and practices. It includes the study and application of the principles of friction, wear and lubrication. Tribology is a branch of mechanical engineering and materials science. This course involves an outline of tribology.					
[Objectives]					
To understand an outline of tribology.					
[Requirements]					
N/A					
[Evaluation]					
Several reports : 100%					
[Textbooks]					
N/A					
[References]					
<ol style="list-style-type: none"> 橋本巨：基礎から学ぶトライボロジー、森北出版、2006年(in Japanese). 山本雄二、兼田楨宏：トライボロジー第2版、理工学社、2010年(in Japanese). 					
[Schedule]					
<ol style="list-style-type: none"> Introduction Surface and contact Friction: sliding friction, rolling friction Fluid lubrication Elastohydrodynamic lubrication (EHL) Boundary lubrication Surface damages (1): adhesive wear, abrasive wear Surface damages (2): corrosive wear, fatigue wear Surface damages (3): seizure Lubricant, additive, grease, solid lubricant Surface modification Tribomaterials Application to modern technology Construing in turn Evaluation and description 					

[Title]			[Instructor]		
Research Training for Human Oriented Engineering I			Each teacher		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327790	2	Human oriented Engineering	Intensive	/	Japanese
[Outline and purpose]					
The study program is as follows: Attendance and presentation at an academic conference or research meeting by advice of the directing teacher group					
[Objectives]					
1)to explain the research subject accurately at academic conference 2)to exchange the academic opinion at high level					
[Requirements]					
To secure the enough expert knowledge to present at academic conference					
[Evaluation]					
Presentation : 100% Accomplishment is evaluated based on the presentation at the academic conference by the directing teacher group					
[Textbooks]					
Nothing					
[References]					
Nothing					
[Schedule]					
The level of the academic conference is one of the important factors of evaluation.					

[Title]			[Instructor]		
Research Training for Human Oriented Engineering II			Each teacher		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327791	2	Human oriented Engineering	Intensive	/	Japanese
[Outline and purpose]					
The study program is as follows: Attendance and presentation at an academic conference or research meeting by advice of the directing teacher group					
[Objectives]					
1)to explain the research subject accurately at academic conference 2)to exchange the academic opinion at high level					
[Requirements]					
To secure the enough expert knowledge to present at academic conference					
[Evaluation]					
Presentation : 100% Accomplishment is evaluated based on the presentation at the academic conference by the directing teacher group					
[Textbooks]					
Nothing					
[References]					
Nothing					
[Schedule]					
The level of the academic conference is one of the important factors of evaluation.					

[Title]			[Instructor]		
Internship			Each teacher		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327770	2	Human Oriented Engineering	Intensive	/	Japanese
[Outline and purpose]					
Purpose of internship is to understand knowledge that was studied at graduate course through guidance of technique at private company or public sectors. There are two types: teacher introduces training office for joint research to student and student selects the training office by searching subject proposed by office.					
[Objectives]					
1. to carry out training more than 2 weeks at assigned company 2. to confirm how knowledge that was acquired at education in master course is utilized for industrial frontier 3. to motivate the study attitude in master course and to utilize the experience for the career design after graduate course					
[Requirements]					
Basic knowledge as expert, common sense as businessperson, consciousness for attending training					
[Evaluation]					
Term and attitude at training office, evaluation by training office, report and presentation : 100%					
[Textbooks]					
Nothing					
[References]					
Nothing					
[Schedule]					
1. Application and procedure There are two types: Collaboration type and Challenge type (1) Collaboration type: Students offer a training office to the professor designated as internship office, under guidance of major advising teacher. The professor mediates a training office and has a procedure under cooperation of advising teacher (advising teacher introduces and mediates training office to student). (2)Challenge type: Students that want to apply new type get the information from guidance and website of career center and selects the training office by advices of teacher and applies to education section (teacher in charge is education committee member). 2. Training Student takes a course by the guidance of training office. 3. Making a report and presentation Detailed contents will be introduced at guidance of university.					

[Title]			[Instructor]		
Advanced Special Lectures I					
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327775	1	Human Oriented Engineering	Intensive	/	English/ Japanese
[Outline and purpose]					
The lecture indicates the state of the art of human-oriented technology.					
[Objectives]					
To acquire the interdisciplinary knowledge on human-oriented system engineering based on the knowledge of science in the undergraduate level					
[Requirements]					
the basic knowledge of science for the undergraduate level					
[Evaluation]					
Presentation 35% Unscheduled report 65%					
[Textbooks]					
[References]					
[Schedule]					

[Title]			[Instructor]		
Advanced Special Lectures II					
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327776	1	Human Oriented Engineering	Intensive	/	English/ Japanese
[Outline and purpose]					
The lecture indicates the state of the art of human-oriented technology.					
[Objectives]					
To acquire the interdisciplinary knowledge on human-oriented system engineering based on the knowledge of science in the undergraduate level					
[Requirements]					
the basic knowledge of science for the undergraduate level					
[Evaluation]					
Presentation 35% Unscheduled report 65%					
[Textbooks]					
[References]					
[Schedule]					

[Title]			[Instructor]		
Human Oriented Engineering I			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327780	2	Human Oriented Engineering	1st Semester	Thu./V	Japanese
[Outline and purpose]					
<p>One of the purposes of the department of human-oriented-system engineering is to study basic medical knowledge as the application field of engineering. This program is designed to study the basics of medical knowledge. In terms of the engineering, the staffs of this department and some special lecturers provide the state of the art of each field of human-oriented-system-engineering through this program.</p>					
[Objectives]					
To study the basic medical knowledge and the state of the art of the human-oriented-system-engineering					
[Requirements]					
General knowledge of engineering relating human oriented system engineering					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
Contents that each teacher designates					
[Schedule]					
<ol style="list-style-type: none"> 1. guidance 2. pursuing the origin of the elements 3. how to acquire leadership 4. thinking of the recyclable energy use 5. communication skills for team work1 6. communication skills for team work2 7~10 medical program 11~13. presentation about medical program 14. to be announced 15. elementary process of collision of atoms and molecule 					

[Title]			[Instructor]		
Human Oriented Engineering II			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327781	2	Human Oriented Engineering	2nd Semester	Thu./V	Japanese
[Outline and purpose]					
<p>One of the purposes of the department of human-oriented-system engineering is to study basic medical knowledge as the application field of engineering. This program is designed to study the basics of medical knowledge. In terms of the engineering, the staffs of this department and some special lecturers provide the state of the art of each field of human-oriented-system-engineering through this program.</p>					
[Objectives]					
To study the basic medical knowledge and the state of the art of the human-oriented-system-engineering					
[Requirements]					
General knowledge of engineering relating human oriented system engineering					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
Contents that each teacher designates					
[Schedule]					
<ol style="list-style-type: none"> 1. presentation of assignment in summer 2. state of the art of imaging of human 3. High energy laser and its applications 4. material engineering and supersonic engineering 5. disaster risk and its preparedness 6. micro and nano scale technology and its application to electronic engineering 7. sensitivity analysis by imaging information 8. basics and application of the human biological signals and its analysis by imaging 9. the history and future direction of micro devices developments 10. talents required in business scenes 11. tribology and its application 12. human behavior and its application to social design 13. the organization of materials and the relationship with the mechanical characteristics 14. microscopic process for medical micro devices 15. artificial photosynthesis systems and its application to the material engineering 					

[Title]			[Instructor]		
Seminar in Human Oriented System Engineering IA			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327801	1	Human Oriented Engineering	1st Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Seminar in Human Oriented System Engineering IB			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327802	1	Human Oriented Engineering	2nd Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Seminar in Human Oriented System Engineering IIA			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327811	1	Human Oriented Engineering	1st Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field in addition to the Seminar I. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Seminar in Human Oriented System Engineering IIB			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327812	1	Human Oriented Engineering	2nd Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field in addition to the Seminar I. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Research Work in Human Oriented System Engineering IA			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327821	2	Human Oriented Engineering	1st Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field in addition to the Seminar I. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Research Work in Human Oriented System Engineering IB			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327822	2	Human Oriented Engineering	2nd Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field in addition to the Seminar I. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Research Work in Human Oriented System Engineering IIA			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327831	3	Human Oriented Engineering	1st Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field in addition to the Seminar I. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					

[Title]			[Instructor]		
Research Work in Human Oriented System Engineering IIB			All teachers		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
327832	3	Human Oriented System Engineering	2nd Semester	/	Japanese
[Outline and purpose]					
It is necessary to review the related literatures, to consider the theme of research, including foreign journals of the related field in addition to the Seminar I. This program provides information on approaching those literatures. Other than that, the way of communication and collaboration on research group is also studied through the seminar.					
[Objectives]					
To direct one's study through the knowledge from this seminar					
[Requirements]					
General knowledge of engineering relating research at undergraduate course					
[Evaluation]					
Integrated evaluation : 100%					
[Textbooks]					
[References]					
References that advising teacher designates					
[Schedule]					
Contents that advising teacher designates					