

GUIDE FOR THE APPLICATION OF THE NON - SCHOLARSHIP
ASIA-PACIFIC ENGINEERING DESIGN PROGRAM
IN THE INTERNATIONAL PRIORITY GRADUATE PROGRAM (PGP),
GRADUATE SCHOOL OF ENGINEERING AND SCIENCE, UNIVERSITY OF THE RYUKYUS
(MASTER'S PROGRAM)

ABOUT THE PROGRAM

Asia-Pacific Engineering Design Program is organized in order to offer a better opportunities for graduate study particularly to the students from abroad by (1) instructing all courses in the English language, and (2) commencing the academic program in October.*

This is a call for application to a two year Master's Course for the academic year 2012-2014.

Upon enrollment, the candidates will each be assigned to an advisor who will direct their thesis research for two years in their designated field of specialization. The degree of Master of Engineering will be awarded in recognition of thesis research and course work including seminar participation, with a minimum of 30 credit hours.

Before deciding the field and the topic of research, applicants are established contact with appropriate supervisor(s) by referring to the List of Faculty Members.

* This program is also open to applicants who hold Japanese citizenship.

GUIDELINES FOR APPLICATION

1. Study Areas and Admission Intake

About a few students will be accepted for enrollment under the Asia-Pacific Engineering Design Program, Graduate School of Engineering and Science, University of the Ryukyus.

2. Qualifications Required for Applicants

- (1) Prospective applicants are advised to get in touch with a potential thesis advisor at the University of the Ryukyus for consultation on research themes and plan; applicants without advisor's such prior approval may not receive full consideration during the admission screening.
- (2) Nationality: Open to applicants of all nationalities
- (3) Academic Status: Applicants for the Graduate Program leading to a Master's Degree should have or be receiving a Bachelor's Degree or an equivalent degree, as of March 31, 2012.
- (4) Health: Applicants should be in good mental and physical health.
- (5) Language proficiency: A good working level of English is required.
- (6) Time limit for arrival in Japan: Overseas candidates should be able to arrive in Japan at the end of March, 2012.

3. Expenses

- (1) Entrance Examination Fee: 30,000 yen
- (2) Admission Fee: 282,000 yen
- (3) Tuition Fee: A total of 535,800 yen for one year, to be paid in April and October in two separate installments.

4. Selection and Admission

Applicants will be examined by the Screening Committee of the Program. Only those who have a solid academic background, research capability and commitment are selected. The final decision will be informed to the candidates through the University of the Ryukyus around the middle of January, 2012.

5. Enrollment

Date of enrollment is April 1, 2012.

6. Application

Applicants should prepare the following documents to be forwarded to the Graduate School of Engineering and Science, University of the Ryukyus through the head of the universities or the institutions with which the applicants are affiliated. Applicants who presently have no formal affiliation should send the prepared documents through the Dean/Director of the University from which they graduated.

- (1) Application form (Form I-1, I-2)
- (2) Health certificate in the prescribed form completed by a registered medical doctor within six months of the date of the application (Form)
- (3) Certificate of Graduation (undergraduate and graduate) or Certified Letter from the Graduate School at which the applicant is currently enrolled, stating the expected graduation date.
- (4) Transcripts of academic record (undergraduate, and graduate) issued by the university authorities and their English translation.

A GRADE POINT AVERAGE (GPA) must be issued by the university authorities.

$$\text{GPA} = \frac{(\text{A course credits} \times 4\text{points}) + (\text{B course credits} \times 3\text{points}) + (\text{C course credits} \times 2\text{points}) + (\text{D course credits} \times 1\text{point})}{\text{Total Credits Registered}}$$

Grading Scale

A	••••• Excellent (90-100)	4 Grade Points
B	••••• Good (80-89)	3 Grade Points
C	••••• Average (70-79)	2 Grade Points
D	••••• Passing (60-69)	1 Grade Point
F	••••• Failure (0-59)	0 Grade Point

- (5) Certificate of Citizenship or Proof of Residence in applicant's home country.
- (6) A letter of recommendation (Form) from the head of the applicant's affiliated institution addressed to the Director of Graduate School of Engineering and Science. Letter(s) of reference from those who know the applicant's research / study capability should be addressed also to the Director of Graduate School of Engineering and Science.
- (7) Three photographs (hatless portrait), 6 cm × 4 cm in size, taken within six months of the application date. Two copies should be attached to the application form. One extra copy should be enclosed therein, with the applicant's name and the nationality on the reverse side of the copies.
- (8) AN OFFICIAL TOEFL SCORE of 550 (Paper Based Test Score) / 213 (Computer Based Test Score) / 79-80 (Internet-based Test Score) or above for applicants whose instructional language at their home institution is NOT ENGLISH (Take proper procedure of sending your OFFICIAL score report through the Educational Testing Service to the Graduate School of Engineering and Science, University of the Ryukyus / TOEFL CODE No.8872). Certificate indicating the medium instruction is English issued by the university authorities for applicants whose instructional language at their home institutions is English.
- (9) An abstract of the graduation thesis or project. Those who are not required a graduation thesis from the university should submit an outline of the major field of study.
- (10) Guarantee (Form)
- (11) Entrance Examination fee of 30,000 yen.

Remarks:

- 1) The above documents of A4 size paper should be written in English on the supplied forms typewritten or in print.

- 2) Applications will not be considered if any of the above documents are incomplete, incorrect, or lacking supporting evidence, nor will they be considered if they arrive after the deadline.
- 3) The letters of reference and recommendation should indicate the English proficiency of applicants as excellent, good, or fair.
- 4) All the submitted documents will be retained and not be returned to the applicant.
- 5) The information for documents mentioned in paragraphs (1), (2), (6) and (10) above must be written on the forms provided. Only the originals are accepted.
- 6) All documents are to be prepared in English. For those who cannot prepare in English, a separate English translation should be attached.

7. Application Deadline

Documents for application should be submitted to the Academic Affairs Unit (Faculty of Engineering), Graduate School of Engineering and Science, University of the Ryukyus by November 30, 2011.

8. Other Notes

- (1) Successful applicants are expected to study and understand the geography, climate, customs and habits of Okinawa as well as the general features and conditions of the University of the Ryukyus. It must be noted that English is not normally spoken among the majority of people in Okinawa.
- (2) The International House and dormitory may be available for accommodation at reasonable cost, if there are vacancies.
- (3) The areas of research conducted by the faculties, and curricula of the Graduate Program are outlined in the following section.
- (4) Accepted students are recommended to be well acquainted with the Japanese language, culture, and customs. Knowledge of the Japanese language is necessary in daily life.

Important

The application must be sent by registered air mail by the head of the affiliated institution or employing body on behalf of the applicant.

All the correspondence related to this application should be addressed to:

Academic Affairs Unit (Faculty of Engineering), Graduate School of Engineering and Science,
University of the Ryukyus
1 Senbaru, Nishihara-cho, Okinawa 903-0213, Japan

Form II

健康診断書

CERTIFICATE OF HEALTH (to be completed by the examining physician)

日本語又は英語により明瞭に記載すること。
Please fill out (PRINT/TYPE) in Japanese or English.

氏名 Name: _____
Family name, First name Middle name

男 Male 生年月日 Date of Birth: _____ 年齢 Age: _____
女 Female

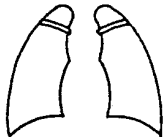
1. 身体検査
Physical Examinations

- (1) 身長 _____ cm 体重 _____ kg
Height Weight
- (2) 血圧 _____ mm/Hg ~ _____ mm/Hg 血液型 Blood Type

A	B	O
RH	+	-

 脈拍 Pulse 整 regular
不整 irregular
- (3) 視力 Eyesight: (R) _____ (L) _____ 色覚異常の有無 color blindness 正常 normal
裸眼 without glasses 異常 impaired
- (4) 聴力 Hearing: 正常 normal 言語 speech: 正常 normal
低下 impaired 異常 impaired

2. 申請者の胸部について、聴診とX線検査の結果を記入してください。X線検査の日付も記入すること（6ヶ月以上前の検査は無効。）
Please describe the results of physical and X-ray examinations of applicant's chest x-ray (X-ray taken more than 6 months prior to the certification is NOT valid).



肺 lung: 正常 normal
異常 impaired

心臓 Cardiomegaly: 正常 normal
異常 impaired

異常がある場合 ↓
心電図 Electrocardiograph: 正常 normal
異常 impaired

Describe the condition of applicant's lung.

3. 現在治療中の病気 Disease Treated at Present Yes (Disease: _____) No

4. 既往症 Past history: Please indicate with + or - and fill in the date of recovery

Tuberculosis..... (. . .) Malaria..... (. . .) Other communicable disease..... (. . .)
Epilepsy..... (. . .) Kidney Disease..... (. . .) Heart Diseases..... (. . .)
Diabetes..... (. . .) Drug Allergy..... (. . .) Psychosis..... (. . .)
Functional Disorder in extremities..... (. . .)

5. 検査 Laboratory tests
検尿 Urinalysis: glucose (), protein (), occult blood ()

赤沈 ESR: _____ mm/Hr, WBC count: _____ /cmm 貧血 anemia

Hemoglobin: _____ gm/dl, GPT: _____

6. 診断医の印象を述べて下さい。
Please describe your impression.

7. 志願者の既往歴、診察・検査の結果から判断して、現在の健康の状況は十分に留学に耐えうるものと思われますか？
In view of the applicant's history and the above findings, is your observation his/her health status is adequate to pursue studies in Japan?
yes no

日付 Date: _____ 署名 Signature: _____

医師氏名 Physician's Name in Print: _____

検査施設名 Office/Institution: _____
所在地 Address: _____

Faculty and Research Fields

Mechanical Systems Engineering

Professors:

Fukumoto, Isao : Dr. Eng., Osaka University, 1986
Manufacturing Process, Injection Molding, Composite Materials.
E-mail: fukumoto@tec.u-ryukyu.ac.jp

Furukawa, Toshio: Dr. Eng., Osaka Prefecture University, 1983
Solid Mechanics, Theory of Elasticity, Computational Mechanics.
E-mail: furukawa@teada.tec.u-ryukyu.ac.jp

Kinjo, Hiroshi : Dr. Eng., Tokushima University, 1994
Control Engineering, Signal Processing, Intelligent Systems.
E-mail: kinjo@tec.u-ryukyu.ac.jp

Kurata, Koji: Dr. Eng., The University of Tokyo, 1995
Mathematical Engineering, Neural Networks, Self-Organization.
E-mail: kurata@mibai.tec.u-ryukyu.ac.jp

Makabe, Chobin : Dr. Eng., Kyushu University, 1985
Fatigue Fracture Mechanics, Fracture Dynamics, Fracture Mechanics of Materials,
Fatigue Strength of Metals.
E-mail: makabe@tec.u-ryukyu.ac.jp

Nosoko, Takehiro : Dr. Eng., Keio University, 1986
Wave Dynamics on Falling Films, Mass Transfer into Film Flow, Solar Desalination,
Drying.
E-mail: yongrang@tec.u-ryukyu.ac.jp

Saitou, Masatoshi : Dr. Eng., Waseda University, 1993
Theory of Crystal Growth.
Fractal in Crystal Growth, Electrodeposition, Computer Simulation.
E-mail: saitou@tec.u-ryukyu.ac.jp

Shibata, Shinichi: Dr. Eng., Niigata University, 1999
Composite material, Bio polymer
E-mail: shibata@tec.u-ryukyu.ac.jp

Yaga, Minoru : Dr. Eng., Kyushu University, 1989
Impingement Heat Transfer, Under Expanded Jet, Compressible Flow.
E-mail: yaga@tec.u-ryukyu.ac.jp

Suzuki, Masami : Dr. Eng., The University of Tokyo, 2002
Computational Fluid Dynamics, Wave Power Generation, Wind Turbine.
E-mail: m-suzuki@tec.u-ryukyu.ac.jp

Associate Professors:

Kondou, Ryouji: Dr. Eng., Okayama University, 2003

Theory of Plasticity, Theory of Crystal Plasticity, Theory of Dislocations.
E-mail: kondou@teada.tec.u-ryukyu.ac.jp

Miyazaki, Tatsujiro: Dr. Eng., Kyushu University, 2003
Strength of Materials, Metal Fatigue.
E-mail: t-miya@tec.u-ryukyu.ac.jp

Oshikawa, Wataru: Dr. Eng., The University of Tokyo, 2005
Corrosion and Protection
E-mail: oshikawa@tec.u-ryukyu.ac.jp

Oshiro, Naoki: Dr. Eng., Osaka University, 2000
Robot vision, Machine learning
E-mail: oshiro@mibai.tec.u-ryukyu.ac.jp

Senaha, Izuru: Dr. Eng., Nagoya University, 2001
Thermal Engineering, Heat Transfer Engineering, Fluid Dynamics
E-mail: senaha@tec.u-ryukyu.ac.jp

Sueyoshi, Toshiyasu: Ph.D.(Information Sciences), Tohoku University, 2004
Engineering of Plasticity, Plastic Constitutive Equation, Numerical Analysis
E-mail: sueyoshi@teada.tec.u-ryukyu.ac.jp

Uezato, Eiho: Dr. Eng., Kobe University, 1996
Control Engineering
E-mail: uezato@mibai.tec.u-ryukyu.ac.jp

Nakazono, Kunihiko: Dr. Eng., Keio University, 2010
Control Engineering
E-mail: nakazono@mibai.tec.u-ryukyu.ac.jp

Assistant Professors:

Fujikawa, Masaki: Dr. Eng., Aoyama Gakuin University, 2006
Computational Mechanics, Experimental Mechanics, Solid Mechanics.
E-mail: fujikawa@tec.u-ryukyu.ac.jp

Ishikawa, Masaaki: Dr. Eng., University of Fukui, 2000
Engineering of Multiphase Flow, Fluid Dynamics, PIV (Particle Image Velocimetry)
E-mail: ishi8614@tec.u-ryukyu.ac.jp

Matsuda, Shoichi: Dr. Eng., University of the Ryukyus, 2001
Thermal Engineering, Heat Transfer Engineering, Fluid Dynamics
E-mail: matsudas@tec.u-ryukyu.ac.jp

Civil Engineering and Architecture

Professors:

Arizumi, Yasunori: Dr. Eng., Nagoya University, 1984
Structural Engineering, Steel-structural Engineering, Structural Analysis, Structural Stability.
E-mail: arizumi@tec.u-ryukyu.ac.jp

Iraha, Shigeo: Dr. Eng., University of Tokyo, 1993

Structural Engineering, Concrete Engineering.
E-mail: iraha@tec.u-ryukyu.ac.jp

Nakaza, Eizo: Dr. Eng., Tokyo Institute of Technology, 1990
Coastal Engineering, Integrated Coastal Zone Management, Coastal Zone Ecosystem,
Coral Sea Engineering, Waves and Currents in Coral seas, Internal Waves, Design of
Maritime Structures, Fluid dynamics, Elasticity.

Ogura, Nobuyuki: Ph.D., Tokyo University of Fine Arts and Music, 1988
Architectural Design and Planning, History of Tropical Modern Architecture.
E-mail: oguranob@tec.u-ryukyu.ac.jp

Tsutsumi, Jun-ichiro: Dr. Eng., Kyushu University, 1987
Urban and Architectural Environmental Engineering, Computational Fluid Dynamics,
Architectural and Urban Energy Planning, Urban Thermal Environmental Engineering,
Environmental Fluid Engineering, Urban Meteorology, Ecological House.
E-mail: jzutsumi@tec.u-ryukyu.ac.jp

Yamada, Yoshitomo: Dr. Eng., Utsunomiya University, 2000
Construction Materials (Buildings), Concrete Engineering, Fresh Concrete Rheology.
E-mail: b985553@tec.u-ryukyu.ac.jp

Associate Professors:

Ando, Tetsuya: Dr. Eng., University of Tokyo, 1992
Urban and Regional Planning, Urban and Landscape Design.
E-mail: tando@tec.u-ryukyu.ac.jp

Hara, Hisao: Dr. Eng., University of the Ryukyus, 2004
Soil mechanics, Environmental geo-engineering.
E-mail: soil@tec.u-ryukyu.ac.jp

Irie, Toru: Dr. Eng., Yokohama National University, 2002
Architectural Design, Architectural Theory
E-mail: irie@tec.u-ryukyu.ac.jp

Matsui, Toru: Ph.D., University of Tsukuba, 1990
Applied Microbiology, Biochemical Engineering.
E-mail: tmatsui@comb.u-ryukyu.ac.jp

Morishita, Youichi: Dr. Eng., Kyushu University, 1983
Structural Engineering.
E-mail: morisita@tec.u-ryukyu.ac.jp

Shimizu, Hajime: Dr. Eng., Kyoto University, 1994
Urban and Regional Planning.
E-mail: shimizu@tec.u-ryukyu.ac.jp

Shimozato, Tetsuhiro: Dr. Eng., University of the Ryukyus, 2008
Structural Engineering, Steel-structural Engineering, Bridge-maintenance Engineering
E-mail: simozato@tec.u-ryukyu.ac.jp

Tokashiki, Takeshi: Dr. Eng., Shinshu University, 2005
Environmental Engineering, Room Acoustics.

E-mail: ttake@tec.u-ryukyu.ac.jp

Tomiyama, Jun: Dr. Eng., University of the Ryukyus, 2000
Computational Mechanics, Concrete Engineering.
E-mail: jun-t@tec.u-ryukyu.ac.jp

Electrical and Electronics Engineering

Professors:

Fujii, Satoshi : Ph.D., Hokkaido University, 2000
Rader Signal Processing, Remote Sensing, Radio Oceanography.
E-mail: fujii@eee.u-ryukyu.ac.jp

Higa, Akira : Dr. Eng., Osaka University, 1996
Thin Film Engineering, Carbon Materials, Solid State Electronics
E-mail: higa@eee.u-ryukyu.ac.jp

Kaneko, Eiji : Dr. Eng., Nagoya University, 1989
High Power and High Voltage Engineering, Power System Engineering, Pulsed Power Engineering, Electrical Discharges and Plasma Engineering.
E-mail: kaneko@eee.u-ryukyu.ac.jp

Nagata, Yasunori : Dr. Eng., Meiji University, 1996
Fault tolerant systems, Asynchronous systems, Multiple-valued logic, Embedded systems.
E-mail: ngt@eee.u-ryukyu.ac.jp

Namihira, Yoshinori : Dr. Eng., Tohoku University, 1979
Optical Fiber and Component Measurement Technologies, Optimum Design of Optical Fibers, Optical Transmission Systems, Photonic Crystal Fibers for Medical Applications.
E-mail: namihira@eee.u-ryukyu.ac.jp

Noguchi, Takashi : Dr. Eng., Doshisya University, 1992
TFT (Thin Film Transistor), LCD (Liquid Crystal Display), FPD (Flat Panel Display), mobile-phone, KEITAL, SoG (System on Glass), New Solar Cell, Active matrix, Polysilicon, Amorphous laser crystallization silicon mobility, O-LED (Organic LED).
E-mail: tnoguchi@tec.u-ryukyu.ac.jp

Senjyu, Tomonobu : Dr. Eng., Nagoya University, 1994
Power Electronics, Electronic Machine, Power System Engineering, Intelligent Control Engineering, Renewable Energy Engineering, System Optimization
E-mail: b985542@tec.u-ryukyu.ac.jp URL: <http://pesc.eee.u-ryukyu.ac.jp/>

Yonesu, Akira : D.Sc., Kyushu University, 1989
Plasma Engineering.
E-mail: yonesu@eee.u-ryukyu.ac.jp

Associate Professors:

Hanba, Shigeru: Ph. D., The Graduate University for Advanced Studies, 1996
Nonlinear Control Theory
E-mail: hanba@eee.u-ryukyu.ac.jp

Harada, Shigemi: Dr. Eng., Hiroshima University, 1999

Power System Analysis.

E-mail: harada@eee.u-ryukyu.ac.jp

Higa, Hiroki : Dr. Eng., Tohoku University, 1997

Medical Instrumentation, Therapeutic and prosthetic devices

E-mail: hrhiga@eee.u-ryukyu.ac.jp

Kinjo, Mitsunaga: Dr. Inf. Sci., Tohoku University, 2001

Quantum Computation, Quantum Algorithms, Quantum Devices

E-mail: mitsu@eee.u-ryukyu.ac.jp

Saito, Masato: Ph. D., Nagoya University, 2001

Wireless Communication

E-mail: saito@eee.u-ryukyu.ac.jp

Urasaki, Naomitsu : Dr. Eng., University of the Ryukyus, 2004

Electric Machinery, Motor Drives, Power Electronics

E-mail: urasaki@tec.u-ryukyu.ac.jp

Yamamoto, Ken-ichi : Dr.Eng., Gifu University, 1996

Magnetic Materials and Applications, Magnetic Measurement, Magneto-elastic Effects

E-mail: yamamoto@eee.u-ryukyu.ac.jp

Yamazato, Masaaki : Dr. Eng., Kumamoto University, 1999

Electronic materials and devices, Bio materials

E-mail: yamazato@eee.u-ryukyu.ac.jp

Kageyama, Hiroshi :

Assistant Professors:

Okada, Tatsuya: Dr. Eng., Hiroshima University, 2009

Thin Film Semiconductor

E-mail: tokada@tec.u-ryukyu.ac.jp

Yona, Atsushi: Dr. Eng., University of the Ryukyus, 2009

Power Energy Conversion

E-mail: yona@tec.u-ryukyu.ac.jp

Information Engineering

Professors:

Asharif, Mohammad Reza : Dr. Eng., University of Tokyo, 1981

Digital Signal Processing, Digital Image Processing, Acoustic Signal Processing, Simulation Engineering, Active Noise Canceling, Double Talk Echo Canceling, Image Compression, Model-Based Image Coding, Speech Processing, Image Processing, Neural Networks, Statistical Signal Processing, Digital Communications, OFDM, BSS, ICA, LPC.

E-mail: asharif@ie.u-ryukyu.ac.jp

Endo, Satoshi : Dr. Eng., Hokkaido University, 1995
Artificial Intelligence, Neural Networks, Intelligent Systems, Adaptive Algorithms,
Machine Learning.
E-mail: endo@ie.u-ryukyu.ac.jp

Miyagi, Hayao : Dr. Eng., University of Osaka Prefecture, 1978
Intelligent Control Engineering, Fuzzy Expert Systems, Decision-making Modeling.
E-mail: miyagi@ie.u-ryukyu.ac.jp

Nakamura, Morikazu : Dr. Eng., Osaka University, 1995
Distributed algorithms, Computational Intelligence, Parallel and Distributed Systems.
E-mail: morikazu@ie.u-ryukyu.ac.jp

Takara, Tomio : Dr. Eng., Tokyo Institute of Technology, 1983
Pattern Information Processing, Spoken Language Processing, Speech Analysis, Synthesis
and Recognition, Artificial Intelligence.
E-mail: takara@ie.u-ryukyu.ac.jp

Tamaki, Shiro : Dr. Eng., Osaka University, 1987
Control Engineering, Robust Control of Heat Transfer System, Optimal Design of Power
Generation System Using Natural Energy.
E-mail: shiro@ie.u-ryukyu.ac.jp

Wada, Tomohisa : Dr. Eng., Osaka University, 1994
System VLSI Design, Digital & Analog Circuit Design and Digital Computer design.
E-mail: wada@ie.u-ryukyu.ac.jp

Associate Professors:

Kang, Dongshik : Dr. Eng., University of Osaka Prefecture, 1999
Intelligent Systems, Audio Information Processing, Geographic Information Systems(GIS).
E-mail: kang@ie.u-ryukyu.ac.jp

Kono, Shinji : Ph.D. (Eng.), University of Tokyo, 1989
Temporal Logic Based Program Specification and Synthesis, Concurrent Object Oriented
Language.
E-mail: kono@ie.u-ryukyu.ac.jp

Yamada, Koji : Dr. Eng., Hokkaido University, 1995
Complex Systems, Intelligent Robotics, Artificial life, Evolutional Computation.
E-mail: koji@ie.u-ryukyu.ac.jp

Nagayama, Itaru : Ph.D. (Eng.), The University of Tokushima, 1994
Neural Networks, Adaptive Signal Processing, Computer Vision, Data Mining Systems.
E-mail: nagayama@ie.u-ryukyu.ac.jp

Assistant Professors:

Toma, Naruaki : Dr. Eng., University of the Ryukyus, 2003
Complex Systems, Artificial Intelligence, Web Intelligence.
E-mail: tnal@ie.u-ryukyu.ac.jp

Subject Descriptions

Mechanical Systems Engineering Course

Design, Analysis and Processing of Engineering Materials

Advanced Theory of Crystal Growth (Saitou, M.)

This lecture focuses on crystals in static or dynamic growth that spans many disciplines, ranging from applied physics, applied mathematics and chemistry to materials science.

Advanced Fracture Mechanics (Makabe, C.)

On the basis of the fracture mechanics, students investigate some special topics for the strength of cracked materials. Then they study what are the useful parameters to evaluate such material's strength. Also, they learn how to apply the fracture mechanics to the real problems.

Advanced Theory of Plasticity (Sueyoshi, T.)

Studies on continuum mechanics and plastic constitutive theory, Analysis of plastic large deformation of metals.

Advanced Manufacturing System Engineering I (Fukumoto, I.)

Analysis of ultra precision cutting grinding, Design of optimum condition in manufacturing system, Injection molding of composite material.

Advanced Stress Analysis (Furukawa, T.)

Stress and strain, Constitutive equation, Stress function, Two-dimensional elastic stress analysis, Integral transforms, Boundary element method.

Theory of Elasticity (Miyazaki, T.)

Study on stress analysis of two-dimensional problems and linear fracture mechanics.

Corrosion Engineering (Oshikawa, W.)

Corrosion, Corrosion Protection.

Advanced Manufacturing System Engineering II (Shibata, S.)

Design of composite material in polymers, polymerization theory, Analysis in chemistry.

Thermal and Fluid Engineering

Advanced Engineering Thermodynamics (Gima, S.)

The first and second laws of thermodynamics, effective utilization of energy resource and exergy.

Heat and Mass Transfer (Nosoko, T.)

Analysis of heat transfer and mass transfer, modeling of heat and mass transfer phenomena.

Computational Fluid Mechanics (Suzuki, M.)

Computational methods for incompressible flow and numerical grid generation.

Computational Fluid Mechanics (Suzuki, M.)

Computational methods for incompressible flow and applications.

Advanced Energy Conversion I (Yaga, M.)

Research an energy conversion between impinging high speed flow and thermal energy.

Advanced Energy Conversion II (Senaha, I)

Conversion of natural energy such as sunlight, solar heat and mass transfer.

Advanced Heat Transfer Engineering I (Kato, S.)

Study of heat transfer and its application.

Advanced Heat Transfer Engineering II (Kato, S.)

Study of heat transfer and its application following after I

Advanced Measurements of Turbulent Flow (Teruya, I.)

Measurements of turbulent flow by using sensors, Data acquisition.

Mechanics and Control Engineering

Advanced Control Engineering (Uezato, E.)

PID control, Regulator, Observer, Fuzzy control, GA., Intelligent control.

Soft Control Engineering (Kinjo, H.)

An intensive study of the intelligent control systems: fuzzy control system, neuro-control system, genetic algorithms, stochastic control system.

Neural Network Modeling (Kurata, K.)

Mathematical description of neural units is given, which will be used to construct theoretically or numerically tractable neural network models that can learn from failure, recall by association, self-organize topographic map of data space.

Advanced Partial Differential Equation I (Kondou, R.)

Advanced Partial Differential Equation

Advanced Partial Differential Equation II (Kondou, R.)

Advanced Partial Differential Equation

Advanced Signal Processing in Mechanical Engineering (Oshiro, N.)

Digital signal processing, Fast Fourier Transform, Wavelet, Image processing and feature extraction

Intelligent Control Engineering (Nakazono, K.)

Genetic Algorithms, Neural Network, Design for Nonlinear Systems.

Departmental Curriculum

Master's Thesis in Mechanical Systems Engineering ~

Civil Engineering and Architecture Course

Environmental Planning and Design Engineering

Advanced Regional Planning (Ando, T.)

Okinawa islands, Modernization, Development, Environment.

Advanced Urban Planning (Ikeda, T.)

City planning, Urban design, Planning theory, Planning system.

Advanced Architectural Planning (Irie, T.)

Architectural planning, Program and Process.

Environmental Biotechnology (Matsui, T.)

Biotechnology, Genetic engineering, Microbiology, Bioprocess engineering

Advanced Theory of Architectural Design (Ogura, N.)

Modernism, History, Environment, South-east Asia.

Advanced Community Space Planning (Shimizu, H.)

District planning, Neighborhood, Community.

Advanced Environmental Noise (Tokashiki, T.)

The analysis and the results of the research on environmental noise.

Advanced Environmental Systems (Tsutsui, S.)

Environmental physics, Management and preservation in water, Ecosystem, Mitigation.

Advanced Thermal Environmental Engineering (Tsutsumi, J.)

Urban climate, Thermal environment, Thermal comfort natural energy, Renewable Energy.

Structural and Mechanical Engineering of Bridges and Buildings

Advanced Bridge Engineering (Arizumi, Y.)

Bridge engineering, Suspension bridge, Structural engineering, Finite element method.

Advanced Structural Engineering (Iraha, S.)

Finite element analysis, Concrete, Fracture mechanics.

Advanced Reinforced Concrete Design (Morishita, Y.)

Reinforced concrete, Steel reinforced concrete, Seismic safety, Strength, Ductility.

Advanced Computational Solid Mechanics (Tomiya, Jun.)

Numerical simulation method, Computational engineering and science.

Advanced Construction Materials (Yamada, Y.)

Durability of concrete, Salt attack, Alkali aggregate reaction, Fresh concrete.

Advanced Steel Structural Engineering (Shimozato, T.)
Steel structure, Structural design.

Environmental Disaster Prevention Engineering

Advanced Fluid Dynamics of Ocean (Nakaza, E.)
The atmosphere and the ocean, Kuroshio and other major ocean currents, Coastal circulation and estuarine circulation, Waves and currents induced by tropical typhoons, Sea-level changes.

Advanced Geotechnical Engineering (Hara, H.)
Compression and consolidation of soils, Shear strength of soil, Constitutive equation of soil.

Departmental Curriculum

Master's Thesis in Civil Engineering and Architecture ~

Special Seminar in Civil Engineering and Architecture ~

Electrical and Electronics Engineering Course

Electromagnetic Energy Engineering

Advanced Plasma Engineering (Yonesu, A.)
Characteristics of plasma, Plasma processing.

Advanced Magnetic Materials (Yamamoto, K.)
Ferromagnetic Materials, Magnetostriction, Magnetic Anisotropy.

Advanced Power System Engineering (Kaneko, E.)
Power system engineering.

Advanced Power Electronics (Senjyu, T.)
DC/DC converter, PWM inverter, Motor control, AC/DC converter, Energy conversion, FACTS devices in Power System, Advanced Control.

Advanced Electric Machinery (Urasaki, N.)
DC motors, AC motors, Variable frequency drives, Switching converters, Power conversion.

Advanced Power System Analysis (Harada, S.)
Computational Methods for Power System Load Flow, Optimal Power Flow and Stability Analysis.

Advanced Power Energy Conversion (Yona, A.)

Power energy conversion, Renewable energy, Optimal operation.

Electronic Materials Engineering

Physics and Chemistry of Electronic Materials (Yamazato, M.)
Semiconductor interface, Amorphous materials, CVD diamond.

Advanced Electronics Devices (Maehama, T.)
Semiconductor devices, Evaluation of semiconductor crystals.

Advanced Electronic Materials Engineering (Higa, A.)
Semiconductor, Carbon Materials, Electronic Materials Processing.

Advanced Quantum Computer Engineering (Kinjo, M.)
Quantum Algorithms, Quantum Gates, Quantum Devices.

VLSI System Design (Shimabukuro, K.)
VLSI architecture, VLSI layout, Circuit simulation, VLSI CAD tools.

Thin-film Semiconductor Process Technology (Noguchi, T.)
Important of device, the fabrication process of TFT and its application for LCD and new solar cells are described.

Advanced Vacuum Technology (Okada, T.)
Vacuum pumps and gauges, Phenomena in vacuum, Fabrication processes for semiconductor.

Organic Electronics Material Engineering (Kageyama, H.)
Organic Functional Materials, Organic Electronics Devices.

Electronic Systems Engineering

Advanced Mathematical Informatics (Nakao, Z.)
Computational intelligence, Neural networks, Evolutionary programming.

Advanced Modern Control Theory (Nagadou, T.)
Subject of control, Model error CAD system, Design method of controlling system.

Advanced Dependable Systems (Nagata, Y.)
Dependable computer systems, Fault-tolerant systems and error detecting/correcting Code

Advanced Optical Fiber Transmission Technology (Namihira, Y.)
Principle of optical fibers and photonic crystal fibers, optical fiber transmission characteristics, optical transmission technology.

Advanced Signal Processing Systems (Fujii, S.)
Digital signal processing, High-resolution spectral analysis in signal processing, Neural network application for signal processing.

Advanced Medical Electronics (Higa, H.)
Medical Instrumentation, Therapeutic and prosthetic devices.

Advanced Wireless Communication Systems (Saito, M.)

Deterministic and random signal analysis, Digital modulation schemes, Optimum receivers for AWGN channels, Multicarrier systems.
Advanced Nonlinear Control Theory (Hanba, S.)
Geometric properties of nonlinear control systems, stability, nonlinear control system Design.

Departmental Curriculum

Master's Thesis in Electrical and Electronics Engineering ~

Special Seminars in Electrical and Electronics Engineering ~

Information Engineering Course

Computer Systems

Computer Systems (Nakamura, M.)
Computer architectures, Network systems, Operating systems, Parallel processing, and Distributed systems.

Signal Processing Theory (Asharif, M.R.)
Studying of 2-D systems and mathematical characteristics of images, visual perception of human and stereo imaging, 2-D image transforms, image enhancement by histogram and filtering, image restoration, image compression, edge detection algorithms.

Software Systems (Kono, S.)
Software system development, Large program, Object oriented systems, Persistent object, Verification, Test.

Multimedia Information Processing (Nagayama, I.)
Digital Signal Processing, intelligent image processing, physiology and Cognitive science for human perception. Neural computing and algorithms for communication Systems are also discussed.

System Architecture (Wada, T.)
The lecture includes the digital hardware design methodology for large digital systems such as microprocessors and digital signal processors. Hardware description language such as VHDL might be also covered in the lecture if the attendees are interested in such real computer aided design tools.

Intelligent Systems

Speech Information Processing (Takara, T.)
Special lecture on speech analysis, speech synthesis and automatic speech recognition. Fundamentals and applications of the human-machine interface using spoken language are discussed.

Advanced Control Engineering (Tamaki, S.)
State-space description, Linear state-variable feedback, Observer and compensator

design, Some algebraic complements, State feedback and compensator design, Optimal regulator theory, Robust control and its applications.

Intelligent Systems (Kang, D.)

Knowledge representation, Reasoning, Machine learning, Design and development of intelligent systems.

Complex Systems Engineering (Endo, S.)

Evolutionary Computation, Neural Networks, Cellular Automata, Design and development of Complex Systems.

System Analysis (Miyagi, H.)

Analyses on large scale systems, fuzzy systems, chaotic systems, decision-making systems. Stability of nonlinear systems and Lyapunov's theory.

Intelligent Robotics (Yamada, K.)

Lecture on intelligence of autonomous robot, especially on learning method and emergence of robot behaviors. Behavior based AI systems are also discussed.

Departmental Curriculum

Overview of Special Program for Engineering (Asharif, M.R.)

Education system in Japan, University of the Ryukyus, Graduate school of engineering, Courses in the graduate school, Researches of the faculty, Environmental engineering.

Master's Thesis in Information Engineering ~

Special Seminars in Information Engineering ~

Special Lecture ~

Special Lecture ~