APPLICATION PROCEDURE for INTERNATIONAL STUDENTS ADMISSION to GRADUATE SCHOOL in APRIL, 2023 (MASTER'S COURSES in ENGINEERING)

令和5年度

宮崎大学大学院工学研究科修士課程

外国人留学生入試学生募集要項

June, 2022

GRADUATE SCHOOL OF ENGINEERING UNIVERSITY OF MIYAZAKI

宮崎大学大学院工学研究科

1. Admission Policy

The Master's Program in the Graduate School of Engineering offers education in which students can acquire professional knowledge and advanced engineering skills integrating with the undergraduate courses. We aim to cultivate professional engineers who have the practical ability to apply theories in the industry and business contexts and researchers. Also, we welcome students who are motivated and have abilities stated in the [Qualifications for admission].

[Qualifications for admission]

- 1. Those who have the basic academic skills in their specialized area of study in order to acquire professional knowledge and advanced engineering skills.
- 2. Those who learn actively, and have strong motivation for research.
- 3. Those who have the adequate communication skills for their research development in Japanese and/or English.

[Basic policy of screening]

- 1. Applicants will be evaluated comprehensively based on the [qualifications for admission] described above.
- 2. Applicants will be evaluated fairly and objectively.

[Method of screening and viewpoint of evaluation]

Each candidate will be evaluated comprehensively by the result of interview (including oral exam), the documents submitted, and the score of the internationally-recognized third-party English proficiency test.

1. By the interview, applicants will be evaluated mainly the knowledge and skills related to the specialized field, the ability to think, individuality, interest in studying, and eagerness to major field.

2. By documents submitted, applicants will be evaluated the knowledge and skills.

3. By the score of the internationally-recognized third-party English proficiency test, applicants will be evaluated the communication skill.

2. Applicable Courses and the Number of students to be admitted

[1st Recruitment]

Course	Number Offered	
Environmental Systems Course	A few	
Energy and Electronics Course	A few	
Mechanical Systems and Informatics Course	A few	

1. Before applying, applicants are required to contact your prospective supervisor (see "appendix") to inquire about the detailed application procedure, contents of the education and research curriculum. Be sure to fill in the name of your first choice academic adviser on the Application for Admission, the Photograph Card, and the Examination Admission Card.

[2nd Recruitment]

Course	Number Offered
Environmental Systems Course	A few
Energy and Electronics Course	A few
Mechanical Systems and Informatics Course	A few

- 1. Before applying, applicants are required to contact your prospective supervisor (see "appendix") to inquire about the detailed application procedure, contents of the education and research curriculum. Be sure to fill in the name of your first choice academic adviser on the Application for Admission, the Photograph Card, and the Examination Admission Card.
- There might NOT be 2nd Recruitment. However, if there is, it will be announced in the university website around November of 2022.

*Website: http://www.miyazaki-u.ac.jp/exam/graduate-exam/selection/kougaku.html

3. Requirements for Applicants

The applicant must have non-Japanese nationality and have or will obtain an eligible resident status that complies with the Emigration and Immigration Management and Refugee Recognition Law, and satisfy one of the following requirements.

- (1) Persons who have completed, or are expected to complete by March 2023, 16 years of school education in foreign countries.
- (2) Persons who have completed, or are expected to complete by March 2023, 16 years of school education in foreign countries by completing a correspondence course program provided by a school of the country while living in Japan.
- (3) Persons who have completed 15 years of school education in foreign countries, and have been recognized by the Graduate School of Engineering as have received the required number of credits with excellent results.
- (4) Persons who have completed, or are expected to complete by March 2023 an educational course provided by a foreign educational institution that has been recognized by the school education system of a foreign country as the country's academic course and designated by the Japanese Minister of Education, Culture, Sports, Science and Technology, provided that the persons have completed 16 years of the country's school education.
- (5) Persons who have received, or are expected to receive by March 2023, a degree equivalent to a bachelor's degree by completing the course with the period for completion of more than 3 years at a foreign university or foreign school (as evaluated by the foreign government or accreditation organization of the foreign country or specified as equivalent to such educational institutions by the Japanese Minister of Education, Culture, Sports, Science and Technology). (This may include applicants who have completed a correspondence course program provided by a school of the country while living in Japan or who have completed a course at a foreign educational institution positioned in Japan as a facility that has been recognized by the school education system of a foreign country as the country's academic course as prescribed in the preceding item.)
- (6) Persons who are aged, or scheduled to become by the end of March 2023, 22 years or older and have been recognized by the Graduate School of Engineering, based on an individual screening of applicants' qualifications for admission, as having the academic ability at least equivalent to that of a university graduate.
- The applicants, who are applicable of the above stated requirements (3) or (6), will have to have an additional qualification screening. In order to proceed with the test arrangement, make a contact with the Academic Affairs and Student Services Section, and obtain and submit the additional documents with the Application Documents 4. (2) without the application fee. The application documents will not be returned regardless of any circumstances. The date for the submission deadline and the result of the qualifying screening are as follows. [1st Recruitment]

Submission deadline: June 28 (Tue.), 2022 Date for the result: July 6 (Wed.), 2022

[2nd Recruitment] It will be notified on the university website, if the 2nd Recruitment occurs.

2. If you do not have (will not obtain) a "international student" qualification ("Student Visa"), you will not be able to get those services available for "international student" such as tuition exemption, scholarships, etc.

4. Application Procedure

(1) Application Periods and Submitting Place
 [1st Recruitment]
 From July 12 (Tue.) to 15 (Fri.), 2022

Academic Affairs and Student Services Section, Faculty of Engineering, University of Miyazaki 1-1, Gakuen Kibanadai Nishi, Miyazaki, 889-2192 Tel: 0985-58-7979 Fax: 0985-58-7287

[2nd Recruitment]

It will be notified on the university website, if the 2nd Recruitment occurs.

*Office Hours: 9:00 A.M. to 5:00 P.M.

*Application documents must reach the Academic Affairs and Student Services Section, within the application period. In case of mailing, all the application documents should be sent together by registered mail with an envelope marked in red "Application for International Student Admission to the Graduate School of Engineering". by July 15 (Fri.), 2022 (5:00 P.M.). If you send the application documents from abroad, please send them by registered air mail. Application documents arrived after the deadline will not be accepted. Please consider the postal service situation and send them early enough to arrive within the application period.

*Imperfect application documents might not be acceptable.

(2) Application Documents

Submit the following documents filled with either Japanese or English.

Documents	Remarks
Application for Admission,	Use the prescribed forms, and fill in the name of your first to third
Photograph Card and Examination	choice academic advisers on them. Interview will be held at the first
Admission Card	choice academic adviser's course. Paste photographs (head and
	shoulders, hatless, facing forward, 4cm×3cm, taken within the last 3 months) on them
Certified Academic Record	Issued by the university or college attended. Any format is acceptable. (English translation is needed.)
Certificate of graduation or scheduled graduation	Any format is acceptable. (English translation is needed.)
Application Fee	Use the designated transfer-request form, and remit the application fee.
(30,000Yen)	After remitting the fee, paste the Form C (certificate of application fee
	remittance) obtained from financial institution on the sheet. See Note 1.
Score of the third-party English	For detailed information, please see "(3) Adoption of internationally-
proficiency test	recognized third-party English proficiency test" below.
Recommendation Letter	Fill in the prescribed form. Confidential reference of recent date from the last supervisor. (In case of postgraduate research students of University of Miyazaki, the present supervisor.)
	*This document is optional. Those who are not a postgraduate research
	student of University of Miyazaki, are suggested to submit a
	recommendation letter.
Research Plan	Fill in the prescribed form. See Note 2.
Personal History	Fill in the prescribed form.

Note 1. International students supported by scholarship from the Japanese government are exempted from application fee.

Note 2. The research plan should be written on the prescribed form in about 800 characters (in Japanese) or 200 words (in English). It is recommended that this document be typed.

(3) Adoption of internationally-recognized third-party English proficiency test

The foreign language (English) writing test have been replaced by the third-party English proficiency tests mentioned below. Accordingly, the foreign language (English) writing test have not been implemented. Applicants are required to submit the documents listed below. The document of English test which is carried out after April 2019 is considered valid.

Type of English test	Application Documents
TOEIC®Listening&Reading	Original of "Official Score Certificate"
TOEIC®Listening&Reading IP test	Original of "Score Report"
TOEFL iBT® test	Original of Score

You may not need to submit the documents listed above if you are a national of a country which the faculty deems to be English-speaking. To claim exemption from submitting these documents, please contact the Academic Affairs and Student Services Section by July 7 (Thu.), 2022.

5. Screening

Each candidate will be evaluated by the result of the interview (including oral exam), the documents submitted, and the score of the internationally-recognized third-party English proficiency test.

(1) Interview (including the oral exam)

The content of the interview consists of general questions and oral examination. As for the oral examination, the candidates should prepare 5 minutes presentation about their graduation project (if not the graduation project, research experience or future research plan) and present it using their own PC. The candidates should also bring 10 copies of supplementary materials for the presentation. After the presentation, the oral examination will begin, which might contain questions regarding some specialized area of study.

(2) Date of Examination [1st Recruitment] August 23 (Tue.) and 24 (Wed.), 2022

> [2nd Recruitment] Around late in January, 2023 It will be notified on the university website, if the 2nd Recruitment occurs.

(3) Place of Examination

Faculty of Engineering, University of Miyazaki

*The date, time, and the room for the examination will be indicated on the board in front of the Academic Affairs and Student Services Section. As for the candidates from the other universities, we will notify them.

*The applicant from the university which has concluded academic or student exchange agreement with University of Miyazaki can take examination interview at own university, granted by the Graduate School of Engineering, University of Miyazaki.

6. Preliminary Consultation for the Applicants who have disabilities

The applicants who have a disabling condition and need special assistance during entrance examinations as well as special considerations in the course of their studies are required to consult with the Admission Office before submitting the application documents. Immediate submission would be highly appreciated, since we have to prepare in advance depending on your condition.

Please refer to the examples below. However, contents of the consultation are not limited to the examples.

(1) Consultation Period [1st Recruitment] until June 28 (Tue.), 2022

> [2nd Recruitment] It will be notified on the university website, if the 2nd Recruitment occurs.

When the consultation period has passed, or when the applicant needs special assistance during entrance examinations as well as special considerations due to the unexpected accident occurred after the application

deadline, please contact the Admission Office immediately.

(2) Consulting Method

Download the application form for consulting from the university website, and fill in the form with the following items and submit it with a doctor's certificate (submission by mail is also accepted):

- 1. Applicant's name and desired course
- 2. Type and degree of disability
- 3. The need for special assistance and considerations in entrance examinations and in the course of studies
- 4. Special measures and considerations taken in the previous school
- 5. Daily living situation
- 6. Address and telephone number

Depending upon the circumstances, it may be necessary to interview the applicants or their representatives. *Website: http://www.miyazaki-u.ac.jp/exam/admission/1789-2.html

(3) Contact Address for Consultation

Admissions Office, University of Miyazaki

1-1, Gakuen Kibanadai Nishi, Miyazaki, 889-2192

Tel: 0985-58-7138 Fax: 0985-58-2865 (except Saturdays, Sundays and public holidays)

Examples		
Visually Impaired	Visually impaired individuals are those who find it impossible or difficult to visually distinguish words and diagrams even with the use of a magnifying glass.	
Hearing-Impaired	Hearing-impaired individuals are those who find it impossible or difficult to make out a normal speaking voice even with the use of a hearing aid.	
Physically Disabled	 Physically disabled individuals are those who find it impossible or difficult to engage in basic daily activities like note-taking. Physically disabled include those who require constant medical observation and supervision. 	
Sickly	 Sickly individuals are those who with chronic respiratory illness, kidney disease, nervous disorders, malignant neoplasms, or other chronic medical conditions, and require medical treatment or a regulated lifestyle. Sickly individuals also include those with chronically weak constitutions who require a regulated lifestyle 	
Developmental Disorder	Individuals for whom special measures are required due to autism, Asperge's syndrome, learning disabilities, or attention deficit hyperactivity disorder, etc.	
Other	Disabled individuals include those who do not fall into the above categories but have impairments that are serious enough to require special consideration in order to study and take exams.	

7. Announcement of Results

[1st Recruitment] September 6 (Tue.), 2022 (10:00 A.M.)

[2nd Recruitment] It will be notified on the university website, if the 2nd Recruitment occurs. The Examinee Numbers of successful applicants will be notified on the board in front of the Academic Affairs and Student Services Section. As for the successful applicants, an acceptance letter and documents will also be sent out.

8. Enrollment Procedure and School Expenses

Enrollment procedure period: From the beginning of February to late in March, 2023 (scheduled) *For further details of the enrollment procedure, please see the related documents that is scheduled to be distributed at the Academic Affairs and Student Services Section at the beginning of February, 2023. As for the applicants from the other universities, we will mail them.

Entrance Fee: 282,000 Yen

- 1. If the regulations are revised, please pay at the revised rate.
- 2. Once the entrance fee is paid, it will not be refunded under any circumstances except for the following reasons.
 - 1) When the admission process was not made although the entrance fee was paid.
 - 2) When the entrance fee was paid twice by mistake.
 - *Charge for the refund of entrance fee should be paid by the applicant.

Tuition Fee: Annual Fee 535,800 Yen (267,900 Yen per semester)

- 1. Tuition fee should be paid after the new semester begins.
- 2. Payment for tuition fees should be made by account transfer as a general rule.
- 3. Account transfer of the first semester will be carried out around late in May on the 1st year, and around late in April from the 2nd year, and account transfer of the second semester will be carried out around late in October.
- 4. If the regulations are revised, please pay at the revised rate.
- 5. As for the latest information on tuition fees, please see the website listed below. *Website: https://www.miyazaki-u.ac.jp/campus/fees/jugyou/
- 6. International students supported by scholarship from the Japanese government are exempted from entrance fee and tuition fee.

9. Notes

- 1. The contents in the application documents cannot be changed after submission.
- Once the application fee is paid, it will not be refunded under any circumstances except for the following reasons.
 When the application process was not made although the application fee was paid. (In the case that the application fee was paid, but no application documents were submitted nor received by the institute.)
 When the application fee was paid twice by mistake.

10. Management of Personal Information

- 1. The personal information at University of Miyazaki is handled securely and appropriately in compliance with the relevant laws and Rules for Protection of Personal Information.
- 2. The names of individuals, their addresses and other personal information provided by them in connection with applications and admissions procedures will be used for 1) conducting entrance examinations (processing applications, conducting examinations), 2) announcing successful candidates, and 3) Enrollment procedures.
- 3. Entrance exam scores will be used as investigation and research material for applicant selection at the university.
- 4. University of Miyazaki may outsource some of the above operations 2 and 3.
- 5. Personal information in the application form of the successful candidates will be only used for 1)educational affairs purposes (registration, curriculum guidance, etc.), 2) student support purposes (health care, job support, tuition waiver / scholarship application, etc.), and 3) tuition collection.

Contact Information

Academic Affairs and Student Services Section, Faculty of Engineering, University of Miyazaki 1-1, Gakuen Kibanadai Nishi, Miyazaki, 889-2192, JAPAN Tel: 0985-58-7979 Fax: 0985-58-7287 E-mail: eng-nyu@of.miyazaki-u.ac.jp

Course	Position	Advisor	A Main Research Theme
	Professor	Tatsuya OSHIMA	Studies on Separation Techniques and Formulation Techniques Based on Solubility and Distribution Property of Materials
	Professor	Koichiro SHIOMORI	Development of Functional Materials using Phase Separation Phenomenon for Environmentally Benign Chemical Processes
	Professor	Tsutomu SHIRAGAMI	Studies on Development of Novel Photofunctional Materials by Using Metal Complexes
	Professor	Toshifumi YUI	Three Dimensional Structure Studies of Biopolymers and Their Functional Properties
	Professor	Hironori IZAWA	Studies on Development of Novel Functional Materials with Natural Polymers
	Associate Professor	Kazuhiro SUGAMOTO	Synthesis and Evaluation of Bioactive Natural Products
	Associate Professor	Yu NABETANI	Studies on Photochemistry and Photofunctional Materials of Molecular Assemblies Coupled with Microenvironments
	Associate Professor	Jun HIROSE	Biotransformation of Aromatic Compounds by Environmental Microbes
	Associate Professor	Hideki MATSUNE	Fabrication of Stimuli-responsive Dynamic Functional Nanoparticles
	Associate Professor	Jin MATSUMOTO	Study on Synthesis and Self-assembly of Photofunctional Amphiphiles
	Associate Professor	Kaoru OHE	Studies on Separation Process and Environmental Protection Technology by Functional Materials
	Associate Professor	Takuya UTO	Theoretical Study of Structural Polysaccharides and Carbohydrate-Related Enzymes
E	Assistant Professor	Asuka INADA	Studies on Formulation Techniques Based on Self-Assembly
Environmental Systems Course	Assistant Professor	Munetoshi MIYATAKE	Studies on Bioremediation Using Microbial Functions
	Professor	Mitsuteru IRIE	Management of Water Resource, Water Environment and Flooding
	Professor	Daisuke SUETSUGU	Ground Improvement and Soil Stabilization
	Professor	Yoshihiro SUZUKI	Conservation of Water Quality and Development of Restoration Technology on Water Environment
	Professor	Yutaka DOTE	Recycle of Livestock Excrement
	Professor	Chihiro MORITA	Study on Structural Analysis and Soundness Evaluation of Steel Bridges
	Professor	Keisuke MURAKAMI	Study on Coastal Environment and Disaster Mitigation Against Sea Waves
	Associate Professor	Hiroshi SHIMAMOTO	Research on Sustainable Transportation System
	Associate Professor	Tomoo SEKITO	Management and Recycling of Solid Waste
	Associate Professor	Yoshinori FUKUBAYASHI	Reinforcement of road bed and base course and measures to mitigate/prevent ground disaster
	Associate Professor	Chunhe LI	Studies on the Development and Evaluation of High Performance Concrete
	Associate Professor	Kei NUKAZAWA	Stream environment, biodiversity, and hydrological simulation
	Associate Professor	Atsushi NAKANO	Study on Atmospheric Corrosion Performance of Coated Steel Sheets
	Assistant Professor	Atsushi KOUYAMA	Improvement of disaster prevention function of earthwork structures
	Professor	Atsuhiko FUKUYAMA	Characterization of optical and electrical properties in nanometer-size semiconductors and their device application
	Professor	Kouji MAEDA	Optical Properties of Semiconductor Thin Films and Fluorescent Materials
Energy and Electronics Course	Professor	Makoto YAMAUCHI	Observational Study of High Energy Astrophysics
Course	Professor	Atsushi YOKOTANI	Research and Development of Application of High Energy and High Intensity Light Source
		Kenji	

Course	Position	Advisor	A Main Research Theme
	Professor	Koji MORI	Studies of the Energy Cycle in Our Galaxy with Multi-wavelength Observations
	Professor	Kensuke NISHIOKA	Fabrication of High Quality Semiconductor Devices
	Professor	Masato IIDA	Research of Population Dynamics Based on the Analysis of Partial Differential Equations
	Professor	Akinori IGARASHI	Theoretical Research for Atomic Collisions
	Professor	Tatsuro MATSUDA	Study of Hadron Structure and Spectroscopy
	Professor	Ryusuke KON	Study on Mathematical Modelling and Analysis of Biological Phenomena
	Associate Professor	Masakazu ARAI	Studies on Optical Sensing Devices and Crystal Growth
	Associate Professor	Hidetoshi SUZUKI	Study on New Materials for Super High Efficiency Multi-junction Concentrator Photovoltaic
	Associate Professor	Ayaki TAKEDA	Study on Semiconductor Detectors and Data Acquisition Systems for Radiation Imaging
	Associate Professor	Yukie MAEDA	Experimental Study of the Few-body Effects and the Proton Size in the Nuclear Physics
	Associate Professor	Hirofumi IZUHARA	Pattern Formation in Reaction-diffusion Systems
	Associate Professor	Morimichi UMEHARA	Mathematical Analysis of the Compressible Viscous Fluid Motion
Energy and	Associate Professor	Akira NAGAOKA	Studies on environmentally friendly multinary thermoelectric materials
Electronics Course	Associate Professor	Masahito KATTO	Development of High-intensity Lasers and Their Applications
	Associate Professor	Kentaro SAKAI	Fabrication and Characterization of Novel Functional Semiconductor Materials
	Assistant Professor	Akihiro KAMEYAMA	Fabrication of optical fiber sensors and its applications
	Professor	Tatsuya SAKODA	Studies on Effective Usage of Electric Energy
	Professor	Koichi TANNO	Research on High Performance Analog Integrated Circuits
	Professor	Thi Thi Zin	Image Processing and Its Applications - Human Behavior Analysis and Monitoring Systems, Image Search Systems, Big Data Analysis -
	Professor	Mitsuhiro YOKOTA	Study on Analysis and Design of Photonic Waveguides by Numerical Techniques
	Associate Professor	Masanori KAKU	High photon energy light source using light-matter interactions and its applications
	Associate Professor	Amane TAKEI	Development of High-performance Electromagnetic Field Analysis Method and Effective Utilization Technique
	Associate Professor	Yoshihiro NAKA	Numerical Analysis and Design of Passive Optical Communication Devices
	Associate Professor	Hiroki MATSUMOTO	Low Voltage Switched-capacitor Digital-to-analog Converter
	Associate Professor	Yasuyuki OTA	Development of technology for advanced utilization of solar power and light concentrating system
	Assistant Professor	Shoichiro NAGATA	Improvement of effeciencies of electrical aparatus
	Professor	Kikuhito KAWASUE	Three-Dimensional Measurement Using Computer Vision
Mechanical	Professor	Go SAKAI	Development of Highly Active Electrocatalysts for Polymer Electrolyte Fuel Cells
Systems and Informatics	Professor	Hiroki TAMURA	Study on the Human Interface Using Biological Signals
Course	Professor	Ichijo HODAKA	System and Control Theoretic Approach to Technology Applied to Renewable Energy
	Professor	Yuji OKUYAMA	Ionic Transport Properties of Oxides and its Application to Electrochemical Cells

Course	Position	Advisor	A Main Research Theme
	Associate Professor	Geunho LEE	Convergence of Robotics and IoT
	Associate Professor	Naoki MATSUNAGA	Development of Electrocatalysts for Alkaline Fuel Cells
	Associate Professor	Masahiro YOKOMICHI	Research on Autonomous Mobile Robots and Computer Vision with Information Engineering Approach
	Assistant Professor	Nobuya TAKAHASHI	Application of control engineering
	Professor	Ryusuke KAWAMURA	Research of Methods of Thermal Stress Analysis and its Application to Clarification of Behaviors in Solid Mechanics and Assessment of Structural Integrity
	Professor	Byeongrog SHIN	Study on the Computational Fluid Dynamics and Fluid Engineering
	Professor	Gang DENG	Fatigue Strength Evaluation for Machine Elements
	Professor	Yoshinori NAGASE	Study on Solar Heat using Solar Concentrator
	Associate Professor	Osamu OHNISHI	Study on Micro and Precision Machining
		Hiroyuki KINOSHITA	Development of Environmentally Conscious High-Strength-Porous Ceramic From Waste Glass Fiber Reinforced Plastic
	Associate Professor	Yasuhiro BONKOBARA	Study on Vibrational Control of Mechanical Systems
	Associate Professor	Go YAMAKO	Study on Orthopaedic and Sports Biomechanics
	Associate Professor	Suguru MIYAUCHI	Study on Flow Phenomena in a Living Body
Mechanical Systems and	Associate Professor	Ken MASUYA	Development of Human-friendly Robotics
Informatics Course	Assistant Professor	Hitonobu KOIKE	Study on Tribology for Mechanical Elements
	Assistant Professor	Shigeki TOMOMATSU	Study on Solar Thermal Power Generation using Beam-down Solar Concentrator
	Professor	Naonobu OKAZAKI	Research on Secure Networking
	Professor	Tetsuro KATAYAMA	Study on Supporting Methods to Generate Software and Methods to Improve its Reliability
	Professor	Isamu HATSUKADE	Astronomical Data Analysis and Observational Study of Cosmic Thin Hot Plasma
	Professor	Masayuki MUKUNOKI	Computer Vision, Image Understanding and Video Media Processing
	Professor	Kunihito YAMAMORI	Parallel Processing and Applications on Neural Network and Evolutionary Computing
	Professor	Makoto SAKAMOTO	Theoretical Computer Science and Visual Information Technology
	Associate Professor	Kentaro ABURADA	Applied System in Computer Networking
	Associate Professor	Satoshi IKEDA	Optimization of Probabilistic Algorithms
	Associate Professor	Akira DATE	Research on Mathematical Models of Learning and Self-organization
	Associate Professor	Kenji AOKI	Research on Biological Information Processing Mechanism by Computational Science
	Associate Professor	Kentaro INOUE	Bioinformatics and Systems Biology
	Assistant Professor	Hisaaki YAMABA	Research on Computer Support Systems for Design and Operation of Production Systems