

Perspectives in Mathematical Science III			
Registration Code	0072481	Credits	2.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Tue. / 4 (14:45~16:15)		
Instructor	MATSUMOTO Kohji, FUJIWARA Kazuhiro, HESSELHOLT Lars		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·En(P·C·Au)·Ag(B)		
For information on syllabus, please refer to the School of Science's one.			

Introduction to Applied Physics, Materials and Energy Engineering

Registration Code	0072482	Credits	2.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Tue. / 4 (14:45~16:15)		
Instructor	SUGIYAMA Takahiko		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·Sc(P·C·B)·Ag(B)		

For information on syllabus, please refer to the School of Engineering's one.

• Course Purpose

Fundamentals in applied physics, material science, and quantum energy engineering are introduced. Magnetism and superconductivity, and recent topics of quantum computers are discussed. Materials sciences to resolve many problems in design of physical properties, in refining and formation processing of materials are discussed. Recent developments in materials science are introduced. Introduction to nuclear fusion and quantum energy utilization are also discussed.

• Prerequisite Subjects

• Course Topics

1. Introduction to magnetism
2. Introduction to quantum computers
3. Introduction to superconductivity
4. Introduction to laser materials processing I
5. Introduction to laser materials processing II
6. Introduction to nuclear fusion I
7. Introduction to nuclear fusion II
8. Introduction to nuclear fusion III
9. Introduction to nuclear fusion IV
10. Fundamentals of ceramics and applications I
11. Fundamentals of ceramics and applications II
12. Fundamentals of ceramics and applications III
13. Fundamentals of metals and applications I
14. Fundamentals of metals and applications II

• Textbook

Lecture materials will be given during every lecture.

• Additional Reading

• Grade Assessment

Evaluation will be based on written reports to be submitted at each lecture.

• Notes

• Contacting Faculty

Introduction to Chemical and Biological Industries			
Registration Code	0073381	Credits	2.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Wed. / 3 (13:00~14:30)		
Instructor	YAMAMOTO Tetsuya		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·Sc(P·C·B)·Ag(B)		
For information on syllabus, please refer to the School of Engineering's one.			

Introduction to Production Engineering

Registration Code	0073481	Credits	2.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Wed. / 4 (14:45~16:15)		
Coordinator	KASAHARA Jiro		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·Sc(P·C·B)·Ag(B)		

For information on syllabus, please refer to the School of Engineering's one.

Coordinator: KASAHARA Jiro (kasahara@nuac.nagoya-u.ac.jp tel; 052-789-4404)

Class: Wednesdays, 14:45~16:15

Place: School of Engineering, Building 2, Room 222

Lecturers invited from leading Japanese industries will provide an insight to the current status of production engineering in Japan. The maximum number of students is limited to thirty, with foreign students having first priority. Sufficient level of English language capability, TOEIC score of 600 or its equivalent as a minimum, is required. Regular attendance, as well as the submission of several assignments, is required.

Topics to be covered:

1. Manufacturing Automation (Associate Prof. Norikazu Suzuki: Nagoya University)

4/17 Fundamentals of manufacturing technology

4/24 Advanced machining technologies and machine tools

2. Production Engineering in the Pump Industry (Ebara Corporation)

5/22 Introduction to technology for pumps

5/29 Production system for pumps

3. DENSO Manufacturing for Automotive Parts (Denso Corporation)

6/5 Production Systems for Automotive Parts

6/12 Concurrent Engineering & Lean Manufacturing in DENSO

4. Nano-technology in Hard Disk Drives (Nakanishi)

6/19 Introduction to Magnetic Recording Technology

6/26 Nano-technology and Tribology

5. Production Engineering in the Aerospace Industry (Mitsubishi Heavy Industries, Ltd.)

7/3 Introduction to the Aerospace Industry and Parts Production

7/10 Parts Fabrication Processes

Reference Materials:

Handouts will be distributed.

Evaluation:

Active participation and report.

Mathematics Tutorial 2a			
Registration Code	0054421	Credits	1.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Thu. / 4 (14:45~16:15)		
Instructor	RICHARD Serge		
Target Schools (Programs)	La(S) • Ec(S)		
<p>• Objectives of the Course: The aim of this course is to deepen the understanding of calculus and to cultivate the ability to apply mathematical knowledge. The course is mainly intended for students taking Calculus II.</p> <p>• Course Prerequisites: Some notions on functions of one variable, as seen in Calculus I. A basic knowledge of linear algebra will be an asset.</p> <p>• Course Content: Exercises sheets will be provided each week before the tutorial, and will be available on the web site of the course. Homework will be due every week during the tutorial.</p> <p>• Evaluation Methods and Criteria: Your final grade will be determined by homework (50%) and quizzes (50%).</p> <p>• Notice for Student: This course uses the course withdrawal system. It is necessary to submit a Course Withdrawal Request Form when the student has no intention of finishing the course during the semester. The grading scale will be S: 90-100, A: 80-89, B: 70-79, C: 60-69, F: 0-59.</p>			
Textbook	None.		
Reference Book	Free reference books or lecture notes are available on the website of the course.		

Mathematics Tutorial 2b			
Registration Code	0054422	Credits	1.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Thu. / 4 (14:45~16:15)		
Instructor	DARPÖ Erik Olof		
Target Schools (Programs)	La(S) • Ec(S)		
<p>●Objectives of the Course The objective of this course is to provide essential mathematical knowledge necessary to further studies in mathematics and science at university level. The course is primarily intended for students taking the course Linear algebra II.</p> <p>●Course Prerequisites While not a formal requirement, Linear Algebra I is strongly recommended.</p> <p>●Course Contents Orthogonal maps, vector spaces, determinants and their applications, eigenvalues and eigenvectors, applications of eigenvalue theory, linear differential equations.</p> <p>●Evaluation Methods and Criteria The assessment of this course is the same as the assessment of the course Linear Algebra II.</p> <p><i>Course withdrawal:</i> Any student who does not participate in the final exam will receive the grade “Absent”. It is not necessary to submit a course withdrawal request form.</p> <p>●Notice for Students</p> <ol style="list-style-type: none"> 1. The reference book is available in the Main library and in the Science library (enough copies in total for all students). 2. It is strongly recommended to register also to Linear algebra II. 			
Textbook	None.		
Reference Book	Otto Bretscher: <i>Linear Algebra with Applications</i> , fourth edition, Pearson		

Contemporary Japanese Society			
Registration Code	0075481	Credits	2.0
Course Category	Open		
Term (Semester) / Day / Period	G-II (1st year, Spring Semester) / Fri. / 4 (14:45~16:15)		
Instructor	NOMIZU Tsutomu		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·Sc(P·C·B)·En(P·C·Au)·Ag(B)		
<p>●Objective of the Course This course, taking the form of lectures and discussion classes, aims to introduce students to the main features of contemporary Japanese society. Areas of focus include aspects of Japanese art, law, politics, economy, education, modernisation and the environment. This course is designed focusing on NUPACE program students.</p> <p>●Course Prerequisites None.</p> <p>●Course Contents</p> <ol style="list-style-type: none"> 1. Apr 12 Course Introduction (NOMIZU Tsutomu, IEEC) 2. Apr 19 The Japanese Education System – Examination Hell in Japan (FURUYA Reiko, Engineering) 3. Apr 26 The Japanese Courts (Frank BENNETT, Law) <li style="padding-left: 20px;">May 3 <i>National Holiday</i> 4. May 10 Styles of Reasoning and Socialisation in Japan: Comparisons with the US and France (WATANABE Masako, Edu.) 5. May 17 Aging Society and Women in Japan (CHUN, So Hyun, GSES) 6. May 24 Japan's acceptance of Western science and technology during the Meiji period (ITO Akiko, IEEC) 7. May 31 Japanese Animation (WAKUI Takashi, Humanities) 8. Jun 7 Modernisation in Meiji Japan: Field trip to Meiji-mura (NOMIZU Tsutomu, IEEC) 9. Jun 14 Development Issues of Okinawa and Japanese Economy (UMEMURA Tetsuo, GSID) 10. Jun 21 Nationalism in Japan (LINLEY, Matthew, IEEC) 11. Jul 28 Japan's Leading Innovations in Disasters Risk Reduction Technology (LELEITO Emanuel, Engineering) 12. Jul 5 Japanese Business Practices (MEHRIBAN Ahmad, Econ) 13. Jul 12 Cross-cultural Exchange in Japan (TAKAI Jiro/TANIGUCHI Hirohito, Edu) 14. Jul 19 Atomic Energy Development & Environmental Problems (NOMIZU Tsutomu, IEEC) <p>●Evaluation Methods Attendance & Participation: 25% Written Reports: 75% (25% x 3) Withdrawal can be adopted. More than four class absences will cause withdrawal.</p> <p>●Notice for students Students are required to write three reports, ensuring that they attach bibliographies of reference materials referred to. Each report's length should be at least 1,500 words (approximately four sides of A4-size paper), exclusive of foot/endnotes and bibliography. The first of the reports should deal with one of the topics covered in weeks 2~5 of the course (submission deadline: May 24, 2019); the second with a topic covered in weeks 6~10 (submission deadline: June 28, 2019), and the third report with a topic covered in weeks 11~14 (submission deadline: Jul 26, 2019). Students should submit their reports in a MS Word or PDF document to <nomizu@iee.nagoya-u.ac.jp>, indicating the name of the instructor to whom they are addressed.</p> <p>Up to approximately 10 students from G30 programs may be accepted because the course will be fully occupied by NUPACE students.</p>			
Textbook	Reference and reading materials for each class will be made available to students one week in advance. Students should ensure that they read the assigned materials prior to attending class.		
Reference Book	None.		