SYLLABUS *2015*

Common Subjects of Faculty of Engineering

Kyoto University, Faculty of Engineering

Common Subjects of Faculty of Engineering

Common Subjects of Faculty of Engineering

21080

Introduction to Engineering

工学序論

【Code】21080 【Course Year】1st year 【Term】 【Class day & Period】 【Location】 【Credits】1

【Restriction】No Restriction 【Lecture Form(s)】 【Language】 【Instructor】,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1~2	
	6	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

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【Web Sites】

【Additional Information】

21050

Engineering Ethics

工学倫理

【Code】21050 【Course Year】4th year 【Term】 【Class day & Period】Thu 3rd 【Location】 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

22110

Engineering and Ecology(in English)

工学とエコロジー (英語)

【Code】22110 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】 【Lecture Form(s)】

【Language】English 【Instructor】,

【Course Description】The purpose of this course is to teach global ecological and environmental topics from an engineer viewpoint. The course especially contains such global ecological and environmental topics where engineering can provide solutions for sustainability. The course is consisted of lectures and additional exercises, of which the student should complete five (5) written short reports and five (5) 60 minutes laboratory session attendances. The laboratory sessions are held weekly after the lecture, and consist of interactive group work tasks.

【Grading】Test, reports, laboratory performance.

【Course Goals】This course will provide tasks for engineering students to become aware of the relationships between engineering and various aspects of environmental issues. Students will also learn how to apply engineering skills to various environmental and ecological issues. The course prepares the students to be able to write engineering related ecological and environmental topics in English as well as verbally express themselves of these subjects.

【Course Topics】

Theme	Class number of times	Description
Student orientation, and Basic issues and critical thinking about the environment	1	
Environment and human population, ecosystems and communities	2	
Succession and restoration	3	
Biogeography	4	
Productivity and energy flow	5	
World food supply	6	
Effects of agriculture	7	
Basics of energy, fossil fuels	8	
Alternative - and nuclear energies and environment	9	
Water supply and use	10	
Water management, pollution and treatment	11	
Air pollution, Environmental economics	12	
Waste management, environmental planning	13	
Final test	14	

【Textbook】

【Textbook(supplemental)】None

【Prerequisite(s)】Note:

-Interactive lessons (discussion), Small group working method

-This course is held in English.

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【Web Sites】None

【Additional Information】If you have any questions or need further information, feel free to contact at 090aglobal@mail2.adm.kyoto-u.ac.jp.

22210

Engineering and Economy(in English)

工学と経済（英語）

【Code】22210 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】 【Lecture Form(s)】

【Language】English 【Instructor】,

【Course Description】The purpose of this course is to teach economy from an engineer viewpoint. The course especially contains such economic topics which engineer can use to solve practical engineering economy problems. The course is consisted of lectures and additional exercises, of which the student should complete five (5) written short reports and five (5) 60 minutes laboratory session attendances. The laboratory sessions are held weekly after the lecture, and consist of interactive group work tasks. Laboratory sessions are held weekly from 18 to 19 o’clock.// The course is aimed for both Japanese and Foreign nationals.// The course starts on October 6th.

【Grading】Test, reports, laboratory performance.

【Course Goals】This course will provide tasks for engineering students to be able to understand relationships between engineering and engineering economy. Students will learn solving economic problems related to engineering project at various levels. The course also prepares the students to write engineering related economic topics in English as well as verbally express themselves of these subjects.

【Course Topics】

Theme	Class number of times	Description
Student orientation, Introduction to engineering economy	1	Course introduction; Principles of engineering economy
Cost concept	1	Cost terminology; Competition; Total revenue function; Breakeven point
Design economics	1	Cost-driven design; Making vs. purchasing; Trade-offs
Cost estimation techniques I	1	Integrated approach and WBS; Index, unit, and factor techniques
Cost estimation techniques II	1	Parametric estimating; Power-sizing technique; Learning curve; Cost estimation, bottom-up, top-down, target costing
The time value of money I	1	Simple interest; Compound interest; Equivalence concept;Cash-flow digrams
The time value of money II	1	Present and future equivalent values of single cash flows
The time value of money III	1	Uniform series cash flows; Deferred annuities; Uniform gradient cash flows; Nominal and effective interest rates
Evaluation of a single project I	1	Determining minimum attractive rate of return (MARR); The present worth method; Bond value; Capitalized-worth method
Evaluation of a single project II	1	The future worth method; The annual worth method; The internal rate of return method; The external rate of return method
Comparison and selection among alternatives I	1	Basic concepts; The study (analysis) period; Useful lives are equal to the study period
Comparison and selection among alternatives II	1	Useful lives are unequal to the study period; Repeatability; Cotermination; The imputed market value technique
Income taxes and depreciation	1	Concepts and terminology; Depreciation; Straight-line method; Declining-balance method; Income taxes; Marginal tax; Gain or loss on the disposal of an asset; After-tax economic analysis
Final test	1	The test is based on the above topics

【Textbook】Sullivan, Wicks, Koelling; Engineering Economy, 15th Ed. 2012 , Chapters 1-7.

【Textbook(supplemental)】

【Prerequisite(s)】Note:

-Interactive lessons (discussion), Small group working method

-This course is held in English.

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【Web Sites】None

【Additional Information】If you have any questions or need further information, feel free to contact at 090aglobal@mail2.adm.kyoto-u.ac.jp.

24010

Global Leadership Seminar I

ＧＬセミナーＩ（企業調査研究）

【Code】24010 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】1 【Restriction】

【Lecture Form(s)】 【Language】Japanese 【Instructor】,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	2~3	
	2~3	
	12	
	3~4	
	1	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

25010

Global Leadership Seminar II

ＧＬセミナーⅡ（課題解決演習）

【Code】25010 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】1 【Restriction】

【Lecture Form(s)】 【Language】 【Instructor】,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	2	
	1	
	3	
	7	
	1	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【】

【Web Sites】

【Additional Information】

24020

International Internship of Faculty of Engineering I

工学部国際インターンシップ１

【Code】24020 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】1 【Restriction】

【Lecture Form(s)】Exercise 【Language】English, et al.

【Instructor】Faculty of Engineering, Professor, Hitoshi Mikada and the related faculty members

【Course Description】Acquisition of international skills with the training of foreign language through the to internship programs hosted by the University, the Faculty of Engineering, or the Departments in the Department.

【Grading】Marit rating is done based on the presentation or reports after each internship program. Each Department responsible to identify if the credit earned by this subject to be included as mandatory ones or not. If the credit is not included in the department in which the participant belongs to, the credit is granted by the Global Leadership Education Center as a optional credit. The number of credits, either 1 or 2, will be determined depending on the contents and the duration of the program that the participant has participated in.

【Course Goals】The acquisition of international skills with the training of foreign language through the to internship programs hosted by the University is the major expectation to the students.

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

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【Web Sites】

【Additional Information】

25020

International Internship of Faculty of Engineering 2

工学部国際インターンシップ２

【Code】25020 【Course Year】 【Term】 【Class day & Period】 【Location】 【Credits】2 【Restriction】

【Lecture Form(s)】Exercise 【Language】English, et al.

【Instructor】Faculty of Engineering, Profesor, Hitoshi Mikada, and the related faculty members

【Course Description】Acqusition of international skills with wth the training of foreign language through the participation to the international internship programs held by the Faculty of Engineering or its subsidiary bodies.

【Grading】Marit rating is done based on the presentation or reports after each internship program. Each Department responsible to identify if the credit earned by this subject to be included as mandatory ones or not. If the credit is not included in the department in which the participant belongs to, the credit is granted by the Global Leadership Education Center as a optional credit. The number of credits, either 1 or 2, will be determined depending on the contents and the duration of the program that the participant has participated in.

【Course Goals】The acquisition of international and foreign language skills through the participation to international programs is expected. Detailed objectives of the participation should be identified by each program.

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

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【Web Sites】

【Additional Information】

工学部シラバス 2015 年度版
（ Common Subjects of Faculty of Engineering）

2015 年 4 月 1 日発行（非売品）

編集者　京都大学工学部教務課
発行所　京都大学工学部
〒 606-8501 京都市左京区吉田本町

デザイン　工学研究科附属情報センター

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・ Common Subjects of Faculty of Engineering
・[A] Global Engineering
・[B] Architecture
・[C] Engineering Science
・[D] Electrical and Electronic Engineering
・[E] Informatics and Mathematical Science
・[F] Industrial Chemistry
・**オンライン版**　http://www.t.kyoto-u.ac.jp/syllabus-s/

本文中の下線はリンクを示しています．リンク先はオンライン版を参照してください．

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京都大学工学部 2015.4