



Study Abroad Program – TROPICAL LIVING - BALI **ENGINEERING COURSE**

Subjects in this course mostly related to studies about the application of science and practical knowledge in order to design, maintain, improve and research some materials, structures, system or process, within the socio-cultural context of South East Asian Engineering studies. Students from various study backgrounds of engineering may join this course, including from Civil Engineering, Electrical, Transportation, Urban Engineering, Mechanical, IT, Industrial and many others. Both Master and Bachelor students are welcome to join this Study Abroad program.

The maximum amount of credits (ECTS) for 1-semester study is 30 ECTS. The modules are offered in a package of 6 subjects covering 5 subjects from engineering disciplines and 1 subject from social studies.

Available Modules for Study Abroad program in Engineering:

1. Urban Transportation 5 ECTS
2. Renewable Energy: 5 ECTS
3. Industrial Technology 5 ECTS
4. Natural Material: 5 ECTS
5. Earthquake Engineering & Science 5 ECTS
6. Mathematics, 5 ECTS
7. Mechanics and Electroplating, 5 ECTS

8. Bahasa Indonesia: 5 ECTS
9. History & Culture of Indonesia 5 ECTS

10. Thesis
11. Internship

Eligibility:

Bachelor or Master students from 2nd year to 5th year of study from Engineering, Urban Studies, Planning, Architecture are eligible to join the study abroad program. Engineers and other related professionals are also welcome to participate in this course.



MODULES;

CIVIL ENGINEERING

		ECT	Duration	Time
1	Earthquake Science	5	74 hours	weekly
2	Natural Material I Materials of the Tropics	5	74 hours	weekly
3	Urban Transportation	5	74 hours	weekly
4	SEA Renewable Energy & Sustainable	5	74 hours	weekly
5	Student Project	5	74 hours	weekly
6	History & Culture Bahasa Indonesia Excursion	5	74 hours	weekly
	Internship			
	Thesis			

ELECTRICAL ENGINEERING

		ECT	Duration	Time
1	Renewable Energy	5	74 hours	weekly
2	Industrial Technology	5	74 hours	weekly
3	Mathematics I Numerical Mathematics	5	74 hours	weekly
4	Mechanics & Electropating	5	74 hours	weekly
5	Student Project	5	74 hours	weekly
6	History & Culture Bahasa Indonesia Excursion	5	74 hours	weekly
	Internship			
	Thesis			



MECHANICAL ENGINEERING

	ECTS	Duration	Time
1 Renewable Energy	5	74 hours	weekly
2 Industrial Technology	5	74 hours	weekly
3 Mathematics I Numerical Mathematics	5	74 hours	weekly
4 Mechanics & Electroplating	5	74 hours	weekly
5 Material Science I Natural Material	5	74 hours	weekly
6 History & Culture Bahasa Indonesia Excursion	5	74 hours	weekly
Internship			
Thesis			

SYLABUSES:

Subject : **URBAN TRANSPORTATION**

Lecturing Team : Prof. Ir. I Nyoman Arya Thanaya, ME., Ph.D (coordinator)
Ir. I Gusti Putu Suparsa, MT
Putu Alit Suthanaya, ST., MSc., Ph.D
D.M Priyantha Wedagama, ST., MT., MSc., Ph.D

Time : Weekly
Duration : 74 hours in total
Credit Points : 6 ECTS
Department : Faculty of Engineering, University of Udayana
Location : Sudirman Campus

Course Description : The course is intended to equip the students with the relevant issues, challenges, and future prospects of urban transport in South East Asia countries for which Bali island is considered as the case study area.

Learning Outcomes : The students are able to identify, analyse and explain the issues, challenges and future prospect of the urban transport in developing countries

References :

1. Manheim, M.L., (1979), *Fundamentals of Transportation System Analysis Volume I: Basic Concepts*, The MIT Press, Massachusetts.
2. Meyer, M.D., Miller, E.J., (2001), *Urban Transportation Planning 2nd Edition*, McGraw-Hill, New York.
3. The Institution of Highways and Transportation, (1997), *Transport in The Urban Environment*, The IHT, London.
4. AASHTO, (1990), *A Policy on Geometric Design of Highways and Streets*.



5. NAASRA, (1980), *Interim Guide to Geometric Design of Rural Roads*.
6. Asphalt Institute, (1995), *Mix Design Methods for Asphalt Concrete and Other Hot Mix Types*. Manual Series No. 2 (MS-2), Sixth Edition.
7. Asphalt Institute, (1977), *A Brief Introduction to Asphalt and Some of Its Uses*. Manual Series No. 5 (MS-5), Seventh Edition.
8. Krebs, R.D. and Walker, R.D., (1971), *Highway Materials*, McGraw-Hill Book Company.

Course Content :

Week	Topics
1	Urban Structure. This topic describes the concept of urban structure development, Transit Oriented Development, urban structure in Bali Province and transportation network.
2	Road network, sevice, stakeholders, geometric and pavement. Theory of road geometric and pavement, roles of stakeholders, transport condition in Bali, pavement condition in Bali, general properties and availability of road materials, asphalt mixtures, recycling and future challenges.
3	Urban transport institutions in Bali (planning, social structure, design, finance, implementation, and enforcement).
4	Problems and Future Challenges. Urban transportation in Bali, comparison among urban transportation in several provinces in Indonesia, and prediction of future condition with do-nothing and do-something scenarios.
5	Urban transport as the tourist destination area , its problems and challenges. Urban transport to support the tourism industry and economic development in Bali. Household expenditures on transport and motor vehicles ownerships. Prominent mode of transport: motorcycles
6	Sustainable Development: Concept and Implementation. The concept of sustainable development and the implementation problems.
7	Public Transportation; Theory of public transportation, comparison between public transportation in developed and developing countries and future challenges for cities in developing countries
8	Public Transport in Bali experiences relative decline in public transport usage and services. Shift from public to private sector provision of services and facilities. Urban public transport: (mixed on street system: State owned public transport/Trans Sarbagita and privately owned of public transport).
9&10	Semester Break
11	Relevant issues including taxes, financing, routing , etc on both state and private owned public transport in Bali. Trend: shift from new road construction to intensive management of urban road networks and improved public transport. Hot issues: Go Jek.
12	Non-motorised transport systems (facilities for pedestrians and people powered vehicles).
13	Logistic Transportation; Theory of logistic transportation, logistic transportation in Indonesia and Bali.
14	Road safety issues; Education, Engineering and Enforcement to improve the road safety system.
15	Traffic Management: Theory and Implementation. Basic theory of traffic management, traffic condition in cities in developing countries, and the implementation problems.
16	Environmental Impact Assessment; The environmental impacts of motorised vehicles, energy consumption, air pollution, road traffic noise, and issues of global warming.



Subject	: RENEWABLE ENERGY (RE)
Lecturing Team	: Prof. I Nyoman Suprpta Winaya (coordinator) Dr. Eng Made Sucipta, I Nyoman Satya Kumara, Ph.D
Time	: Weekly
Duration	: 74 hours in total
Credit Points	: 5 ECTS
Location	: Faculty of Engineering, University of Udayana

Course Description :

The course aims to introduce the basic concepts, principles, uses, challenges of various renewable energy sources and devices including bio-energy, solar energy, wind energy, micro-hydro, wave and tidal power, geothermal and fuel cells. Students will develop the ability to identify, formulate and solve simple to complex problems of renewable energy conversion. Students will know and understand contemporary issues pertaining to the energy, environment and society from global perspectives.

Objectives:

The main goals of this class are:

- To gain an understanding of the practical use and challenges as well as cost-benefit ratio of various alternative energy sources, to see what is feasible on the large scale and what is not.
- To understand some of the various obstacles associated with actual implementation of production line alternative energy facilities.
- To do simple calculations regarding the cost of energy usage and the required infrastructure to deliver a certain amount of power

Assessment Method :

- Assignments 20%
- Project 40%
- Oral presentation 15%
- Final exam 25%

Possible contents:

Week	Topics
1	Renewable Energy: An introduction Overview of energy consumption and renewable energy in general, Why Renewables (RE)? Methods of analysis for RE Technologies Renewables: Cost and Performance, Energy Policy
2	RE from Biomass I Overview of RE systems for Energy from Biomass, non thermal technology conversion
3	RE from Biomass I Biomass thermal technology conversion and policy; pyrolysis, gasification and combustion; environmental issues.
4	RE from tidal and wave power Design related efficiency, System Elements, Social-Economic and policy factors



5	RE from collector solar energy Solar thermal plant design – collector & plant types, Design related efficiency, System Elements, Solar thermal power plant mathematics, Social-Economic factors, Environmental factors
6	RE from PV solar energy Photovoltaic system design, Design related efficiency, System elements Grid tied systems –Off grid systems, Photovoltaic systems mathematics, social-economic factors, Environmental factors
7	RE from hydro Hydro Turbine Design, Design related efficiency, System Elements, hydro power mathematics, Social-Economic factors
8	RE from wind Wind Turbine Design, Design related efficiency, System Elements, Power control, Wind parks (farms), Off-grid applications, Wind power mathematics, Social-Economic factors
9&10	Semester Break
11	RE from geothermal Geothermal Design, Design related efficiency, System Elements, Geothermal power mathematics, Social-Economic. Environmental and policy factors
12	RE from fuel-cell Fuel characteristic, Design related efficiency, System Elements, fuel-cell power mathematics, Social-Economic, environmental and policy factors
13	Study field Site visits to the RE plant
14	Class Seminar and case studies (1) Class Presentation from the final work of RE Project, followed by class discussion. The presentation will include audiences from local students and all Lecturers and tutors of RE course.
15	Class Seminar and Case Studies (2)

Required Text:

Kaltschmitt, Martin; Streicher, Wolfgang; Wiese, Andreas; (2007).
Renewable Energy: Technology, Economics, and Environment. New York,
NY. Springer Berlin Heidelberg.

Komor, Paul, (2004). Renewable Energy Policy. Lincoln, NE. Universe,
Inc.

Subject : **INDUSTRIAL TECHNOLOGY**

Lecturing Team : Dr. NMAE Dewi Wirastuti (coordinator)
Dr. Linawati
Dr. WG Ariastina
Prof. Arya Thanaya

Tropical Living - International Office
Building C, Room C5 Engineering Faculty, JL. PB Sudirman Denpasar, Bali, Indonesia 80232



Dr. Ari Subagia

Time : Weekly
Duration : 74 hours in total
Credit Points : 5 ECTS
Department : Faculty of Engineering, University of Udayana
Location : Sudirman Campus

Course Description:

The course aims to introduce various technologies supporting traditional and modern industries. It emphasizes on managing the potentials and challenges in practical uses of electrical, computer, mechanical and construction technologies. Students will gain general understanding in product styling, computer aided manufacturing, and use of local materials.

Learning Outcomes :

- To understand some of the various obstacles associated with using technologies in traditional and modern industries
- To understand green technology for industries
- Be able to design innovative project/small business using simple technology

References :

Gavriel Salvendy Ph.D. 2001. Handbook of Industrial Engineering: Technology and Operations Management, Third Edition, John Wiley & Sons.

- Peng Zhang. 21010. Advanced Industrial Control Technology, Elsevier.

Week	Topics
1	Overview of Industrial Technology in Tropical Countries Overview of industry, business and technology, how technology can support industries' sector
2	Traditional Industries Overview traditional industries, technologies to support traditional industries, Balinese traditional industries, logistic, business and supply chain
3	Modern Industries Overview modern industries, modern technology supported industries, Balinese/Indonesian industries
4	Green Technology Methods and materials, from techniques for generating energy to non-toxic cleaning products. The goals are to meet Sustainability, "Cradle to cradle" design, Source reduction, Innovation, Viability . Example: energy, green ICT, green nanotechnology, green building.
5	Entrepreneurship and Innovation Introduction to Entrepreneurship and Innovation, The Entrepreneur: an Actor in Context, networking, Social Enterprise and Innovation, Ideas Market
6	Management, Business and Leadership Strategies e-business, Innovation Management, Idea Management
7	Electrical and Computer Technologies for Industry Business and Industries in Electrical, Telecommunication and Computer field; Technologies to support those industries
8	Mechanical Technologies for Industry Business and Industries in Mechanical field; Technologies to support those industries
9&10	Semester Break
11	Construction Technologies for Industry



	Business and Industries in Construction and Architecture field; Technologies to support those industries
12	Safety, Health & Environment The Safety Health and Environment course teaches personal protective equipment, hazardous materials, electrical and arc-flash safety as well as a comprehensive review of current state
13	Study field Site visits to the traditional industry
14	Class Seminar and Student Presentation (1) Class Presentation from the final work of IdT Project, followed by class discussion. The presentation will include audiences from local students and all Lecturers and tutors of IdT course.
15	Class Seminar and Student Presentation (2)

Subject : **NATURAL MATERIALS (MATERIAL SCIENCE)**

Lecturing Team : D.M Priyantha Wedagama, ST., MT., MSc., Ph.D
Dr. Ari Subagja
Ir. I Gusti Putu Suparsa, MT

Time : Weekly

Duration : 74 hours in total

Credit Points : 5 ECTS

Department : Faculty of Engineering, University of Udayana

Location : Sudirman Campus

Course Description :

Natural Material is one of compulsory subjects taught in all Engineering departments, including Mechanical, Electrical, Structure and Transportation. The subject is also designed for other studies such as Urban Design, Planning and Architecture. The objectives of the course are to introduce natural materials available and being used in tropical countries such as Indonesia as well as to understand the material properties from mechanical, electrical and structural characters. Students are encouraged to be actively participated in the main discussion on green & sustainable concept of materials, as well as in the making of innovative application.

Goals:

Upon the completion of the course, students are expected:

- To gain general understanding of the concept, philosophy, challenges and practical use of natural materials in tropical countries such as Indonesia
- To be able to design or propose innovative materials to be used for engineering or industrial purposes

Topics

Week	Topics
1	Natural Material in Indonesia and other South East Asia Countries Overview and history of materials used for building design, interior, infrastructure and industries in Indonesia and neighboring countries
2	Geographical Tropical Factor, Socio-culture and Philosophy How natural materials are used in different manners and concepts according to the geography, culture, technology
3	Green and Sustainable development in Tropical Countries Pros and contras, challenges and practices of green concept towards use of materials in Indonesia. Discussion includes political issues, technological and



	cultural barriers.
	Properties of materials Including Mechanical factors (stress & strain, elastic/plastic deformation); Electrical (magnetic, optical and wave); Physical Character (durability, strength etc); and other related material science
4	Conservation and Traditional Technology Discussion on differences of methods and approaches being used in developing countries in processing raw materials for industries or constructions
5	Forestry materials Characters, classification, use, constructions method, trends and the traditional technology. Environmental challenge versus industrial demands.
6	Forestry Materials: Wood & Bamboo Green concept of Bamboo; implementation, modern uses and challenges
7	Recycling and Reuse Including trends, designs, technology, availability and potentials
8	Student Presentation/ mid exam
9&10	Semester Break
11	Ground Materials; stones, minerals and metals Material properties, characters, classification, use, constructions method, trends and traditional technologies. Environmental challenge versus industrial demands.
12	Innovative materials for Engineering and industry Bio-materials, sea-shells, coconut wood, water hyacinth, etc.
13	Innovative materials: Student Assignment Students work in groups conducting a small research on available natural materials and design the innovative concept and use of the proposed materials for engineering or industrial purposes.
14	Ecology and Environmental issue: Group presentations and discussion on each assignments. Presented in the form Class Seminar
15	Final Exam

Subject	: HISTORY OF INDONESIA AND CULTURE
Teacher (s)	: 1. Prof. I Wayan Ardika 2. Riri Kertayasa, MA
Time	: Weekly
Duration	: 74 hours in total
Credit Points	: 5 ECTS
Department	: Faculty of Engineering, University of Udayana
Location	: Sudirman Campus

Description

This course has consisted of two main parts. The first part, four weekly meetings will be given in the

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Building C, Room C5 Engineering Faculty, JL. PB Sudirman Denpasar, Bali, Indonesia 80232



form of lectures, focusing in history. Particular attention is given on historiography of nation-building, religions, society and culture of Indonesia. The last four remaining weekly meetings is in the form of presentations and discussions of topical issues based on previous readings assignment. Students will introduce assigned readings and choose a specific topic for group research (a group of five), culminating in a paper of about 20 pages and give presentation before the class.

Course objectives

- To broaden and deepen the students' cultural (political, social, religious, historical, art) knowledge of and insight Indonesia.
 - To understand the development of tourism in Indonesia, particularly in Bali.
- Both oral and written presentations are required.

Mode of instruction

The course combines lectures with presentations and discussion.

Timetable

Week	Topic	Description
1	Nusantara; history of pre-modern and colonial periods	Lecture
2	History of Indonesia I: Sumatra and Sulawesi	Lecture
3	History of Indonesia II: Bali and the structure of Hindu temples	Lecture
4	Art and Culture: the influence of "local" culture in creating a piece of art	Weekly presentation based on the readings, discussion
5	History of tourism in Indonesia	Lecture
6	Cultural and ecotourism; case study	Weekly presentation based on the readings, discussion
7	Cultural and Eco tourism: case study II	
9&10	Break Semester	-
11	Impact of tourism: advantages and disadvantages	Weekly presentation based on the readings, discussion
12	Class Assignment: analyzing cartoons	Submission paper
13	Group presentations Deadline paper	
14	Final Exam or class Seminar	-

Assessment method

- Performance in class (presentations, discussion, class attendance) (20% of final mark)
- 20 pages paper (30% of final mark)

Reading list

Weekly readings to be announced later



Subject **BAHASA INDONESIA**

Lecturers :1. I nyoman Udayana, P.hD
 2. S A Isnu Maharani, S.S., M.hum

Credit : 5 ECTS

Class room : Sudirman Campus

Materials	
<ul style="list-style-type: none">○ Indonesian Greeting○ Steps to do Self Introduction○ Family members	
<ul style="list-style-type: none">○ Indonesian alphabets○ Indonesian numbers○ Indonesian Pronouns○ Simple Sentences	
<ul style="list-style-type: none">○ Indonesian Text○ (Balinese Culture)○ Vocabularies○ Word Game	
<ul style="list-style-type: none">○ Positive, Negative & Interrogative Statements○ Self introduction○ Vocabularies○ Holidays○ Future tense	
<ul style="list-style-type: none">○ Colors○ Human characters○ Exercise on rearranging colors and characters	
<ul style="list-style-type: none">○ Dialogue about shopping○ Making request○ Imperatives○ Text with various inclusive Indonesian verbs	
<ul style="list-style-type: none">○ Holiday, Future Tense, Colors○ Human characters○ Request & imperatives	

Assessment Method :

- Assignments 20%
- Project 40%
- Oral presentation 15%
- Final exam 25%



Subject : **MECHANICAL AND ELECTROPLATING**

Lecturing Team : Dr. Made Widiyarta and
Prof. Dr. Tjokorda Gde Tirta Nindhia

Time : Weekly

Duration : 74 hours in total

Credit Points : 5 ECTS

Department : Faculty of Engineering, University of Udayana

Location : Sudirman Campus

Course Description:

Background in chemistry or electrochemistry that provides a comprehensive overview of numerous plating processes and their associated sciences. Provides a clear understanding of metal finishing technology, permitting the student to understand specifications, avoid routine finishing problems, evaluate product output, and expediently resolve process difficulties.

Course Objectives :

1. To calculate the reactive forces.
2. To analyse the structures.
3. To know the geometric properties of the different shapes.
4. To teach energy and momentum methods.
5. Plating shop personnel and representatives of suppliers who want a more thorough understanding of finishing processes. Those who would benefit from the introduction course to electroplating and surface finishing would gain from this one as well, as would managers, QC personnel, researchers and chemists.

Outcomes:

Upon the completion of the course, students are expected:

- Understand basic chemistry, including atomic structure, elements, molecules, pH, acids, bases, vital equations, neutralization, oxidation-reduction, reaction kinetics, analysis, titration, atomic weight, critical calculations associated with process solutions;
- Solve the engineering problems in case of equilibrium conditions.
- Calculate the reaction forces of various supports of different structures.
- Solve the problems involving dry friction.
- Determine the centroid, centre of gravity and moment of inertia of various surfaces and solids.
- Solve the problems involving dynamics of particles and rigid bodies

Topics

Week	Topics
1	Introduction to Electroplating in Mechanical Engineering
2-3	Unit I Statics of Particle Introduction to Mechanics – Fundamental Principles – Laws of Mechanics, Lame's theorem, Parallelogram and triangular Law of forces, Coplanar forces – Free body diagram – Equilibrium of particles - Equilibrium of particle in space
4-5	Unit II Statics of Rigid Body and Friction Single equivalent force – Free body diagram – Types of supports and their reactions – requirements of stable equilibrium – Moments and Couples –



	Moment of a force about a point and about an axis –Varignon’s theorem – Equilibrium of Rigid bodies in two dimensions. Characteristics of dry friction – Problems involving dry friction – Ladder – Wedges.
6-7	Unit III Properties of Sections Centroid – First moment of area – Theorems of Pappus and Guldinus – Second moment of area – Moment and Product of inertia of plane areas – Transfer Theorems – Polar moment of inertia – Principal axes – Mass moment of inertia- Derivation of mass moment of inertia for rectangular section prism, sphere from first principle – relation to area moments of inertia
8	Student Presentation/ mid exam
9&10	Semester Break
11-12	Unit IV Dynamics of Particles Displacements, Velocity and acceleration, their relationship – relative motion – Curvilinear motion – Newton’s law – Work Energy Equation of particles – Impulse and Momentum – Impact of elastic bodies- Impact - direct and central impact – coefficient of restitution.
13-14	Unit V Dynamics of Rigid Bodies General plane motion –Velocity and Acceleration- Absolute and Relative motion method - Equilibrium of rigid bodies in plane motion- Newton’s Law- D’Alembert’s Principle- Work Energy Principle-Principle of impulse momentum for rigid bodies in plane motion
15	Final Exam

Text Books

1. Ferdinand P. Beer, E. Russell Johnston (2010), Vector Mechanics for Engineers: Statics and Dynamics (9th Edition), Tata McGraw-Hill International Edition.
2. J. L. Meriam and L. G. Kraige (2006), Engineering Mechanics: Statics and Dynamics (6th Edition), Wiley Publishers

References

1. Irving H. Shames, (2003), Engineering Mechanics – Statics and Dynamics, Prentice-Hall of India Private limited.
2. Russell C Hibbeler, (2009), Engineering Mechanics: Statics and Dynamics (12th Edition), Prentice Hall.
3. Anthony M. Bedford and Wallace Fowler (2007), Engineering Mechanics: Statics and Dynamics (5th Edition), Prentice Hall.

Assessment Method :

- Assignments/ Quiz 20%
- Project/ mid term 30%
- Oral presentation/ Seminar 15%
- Final exam 30%



Subject : **ENGINEERING MATHEMATICS**

Lecturing Team : Ketut Sudarsana, Ph.D
Time : Weekly
Duration : 74 hours in total
Credit Points : 5 ECTS
Department : Faculty of Engineering, University of Udayana
Location : Sudirman Campus

Learning Outcomes:

1. Understand various different solution and methods to differential equations including classical linear theory, Laplace transforms, and numerical methods
2. Understand and apply in engineering applications: vector calculus, integral theorems, elementary partial differential equation solution methods, and Fourier analysis.
3. Understand the use of probability theory and statistics, error analyses and how inferences from sampled data can be quantified and used to make meaningful decisions

Week	Topics
1	Introduction to material and teaching modules and modes of evaluation
2	Basic concepts and definitions
3	Equations and Inequations
4	Vector algebra (Addition, subtraction, scalar product, vector product, triple product, applications)
5-6	Functions and graphs (Properties of the most important functions for engineering)
7	Differential calculus for functions of variable and applications
8	Student Presentation/ mid exam
9&10	Semester Break
11-12	Integral calculus for functions of one variable and applications
13-14	Error analysis and statistics
15	Final Exam

References:

Kreyzig, E. "Advanced Engineering Mathematics". 8 th Edition Wiley & Sons Inc.1999.
Riley, K. F., Hobson, M. P. and Bence, S.J." Mathematical Methods for Physics and Engineering" 3 rd ED., Cambridge, 2006.
8th Edition, South-Western, United States of America (HM)
Polyanin, A.D., and Manzhirov A.V., "Handbook of Mathematics for Engineers and



Scientist", Chapman and Hall, 2007.
Lang, Serge, Algebra (Graduate Texts in Mathematics), 2005
Von Clayton R. Paul, Essential Math Skills for Engineers, 2009
Previato, Emma, Dictionary of Applied Math for Engineers and Scientists: A Volume in the Comprehensive Dictionary of Mathematics, 2003

Assessment Method:

- Assignments/ Quiz 20%
- Project/ mid term 30%
- Oral presentation/ Seminar 15%
- Final exam 30%

Subject : **EARTHQUAKE SCIENCE & ENGINEERING**

Lecturing Team : Ady Wiryawan, Ph.D
Time : Weekly
Duration : 74 hours in total
Credit Points : 5 ECTS
Department : Faculty of Engineering, University of Udayana
Location : Sudirman Campus

Course Description:
(TO BE SENT a.s.a.p this week)

Subject : **STUDENT PROJECT/ INDIVIDUAL RESEARCH**

Lecturing Team : Prof. Winaya Suprpta
Prof. ngakan Suardana
Prof. Arya Tenaya
Time : Weekly
Duration : 74 hours in total
Credit Points : 5 ECTS
Department : Faculty of Engineering, University of Udayana
Location : Sudirman Campus

Description:

Students will be given specific ongoing project/ program/ task related to their study background (Civil, Electrical or mechanical). To those who prefer to conduct the subject through research, must select particular research topic independently that may be of interests. The project in both approaches (by project or research) must be consulted to students' professor. Each student will be guided by professor or experts related to their study. If possible, the selected project/ topic/ research should use a case study of Bali's present condition taken from different sectors and angles in comparison to the student's home country development.



Upon the completion of the research, students are expected to submit minimum of 20 pages research paper and present their research progress or findings during the class seminars.

Each student must discuss and consult independently the progress of her/ his research project every week to the relevant professors. The project progress must meet the weekly target, which was agreed in the beginning of the course.

Electives (individual project)

Subject	: ELECTRICAL ENGINEERING
Lecturing Team	: Nyoman Satya Kumara, Ph.D
Time	: Weekly
Duration	: 74 hours in total
Credit Points	: 5 ECTS
Department	: Faculty of Engineering, University of Udayana
Location	: Sudirman Campus

Course Content:

- Introduction to Circuits and Systems
- Electrical direct current Circuits
- Devices and Circuits
- Electromagnetism
- Circuits & Systems Design
- Industrial Electronics
- Electrical machine, Drive and Power Electronics Technology