UNDERGRADUATE PROGRAM OF GEOLOGICAL ENGINEERING
FACULTY OF EARTH SCIENCE AND TECHNOLOGY
INSTITUT TEKNOLOGI BANDUNG

<table>
<tr><td colspan="2">Module name:</td><td colspan="5">Mathematics IA</td></tr>
<tr><td colspan="2">Module level, if applicable</td><td colspan="5">1st year</td></tr>
<tr><td colspan="2">Code, if applicable</td><td colspan="5">MA1101</td></tr>
<tr><td colspan="2">Semester(s) in which the module is taught</td><td colspan="5">First Semester</td></tr>
<tr><td colspan="2">Person responsible for the module</td><td colspan="5">Faculty of Mathematics and Natural Science, Analysis and Geometry Research Group</td></tr>
<tr><td colspan="2">Lecturer</td><td colspan="5">Faculty of Mathematics and Natural Science, Analysis and Geometry Research Group</td></tr>
<tr><td colspan="2">Language</td><td colspan="5">Indonesian</td></tr>
<tr><td colspan="2">Relation to curriculum</td><td colspan="5">Compulsory Course</td></tr>
<tr><td>Types of teaching and learning</td><td>Class Size</td><td>Attendance time (hours per week per semester)</td><td>Forms of active participation</td><td colspan="2">Workload</td><td></td></tr>
<tr><td rowspan="2">Lecture</td><td rowspan="2">80</td><td rowspan="2">4</td><td rowspan="2">Lecture</td><td>Lecture</td><td>56</td></tr>
<tr><td>Preparation and Follow up</td><td>56</td></tr>
<tr><td rowspan="2">Tutorial</td><td rowspan="2">80</td><td rowspan="2">2</td><td rowspan="2">Tutorial</td><td>Tutorial</td><td>28</td></tr>
<tr><td>Preparation and Follow up</td><td>28</td></tr>
<tr><td colspan="2">Total Workload</td><td colspan="5">168 hours</td></tr>
<tr><td colspan="2">Credit points</td><td colspan="5">4 CU</td></tr>
<tr><td colspan="2">Requirements according to the examination regulations</td><td colspan="5">Mid semester exam, Semester exam, Project, Homework, Quizzes</td></tr>
<tr><td colspan="2">Recommended prerequisites</td><td colspan="5">High school mathematics</td></tr>
<tr><td colspan="2">Module objectives/intended learning outcomes</td><td colspan="5">After following this lecture, students are expected to have:
1. Standard technical skills supported by appropriate concepts, formulas, methods and reasoning;
2. A critical, logical and systematic mindset; As well as creativity in problem-solving related to calculus;
3. The ability to communicate the results of thought and work, both in oral or writing;
4. Readiness to study other subjects, which require calculus as a prerequisite, independently.</td></tr>
</table>

Content	This course gives rigorous understanding of some topics in calculus as one of the fundamental courses in mathematics to prepare the students in learning advanced topics. It covers functions and limit, derivatives and its applications, integrations and its applications, transcendental functions, and technique of integrations.
Study and examination requirements and forms of examination	Assessment of student's competency achievement using assignment (project, homework and quiz), Middle Semester Exam and Semester Exam.
Media employed	Chalkboard, power point, tutorial
Reading list	Thomas, Calculus, Pearson Education, 2010, 12th ed. (Main Reference)
	James Stewart, Calculus, Brooks/Cole Publishing Company, 1999, 4th ed.
	Dale Varberg, Edwin Purcel and Steve Rigdon, Calculus, Prentice Hall, 2007, 9th ed.

Module name:		**Mathematics IIA**			
Module level, if applicable		1st year			
Code, if applicable		MA1201			
Semester(s) in which the module is taught		2nd Semester			
Person responsible for the module		Faculty of Mathematics and Natural Science, Analysis and Geometry Research Group			
Lecturer		Faculty of Mathematics and Natural Science, Analysis and Geometry Research Group			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	4	Lecture	Lecture	56
				Preparation and Follow up	56
Tutorial	80	2	Tutorial	Tutorial	28

				Preparation and Follow up	28
Total Workload	168 hours				
Credit points	4 CU				
Requirements according to the examination regulations	Mid semester exam, Semester exam, Project, Homework, Quizzes				
Recommended prerequisites	Mathematics IA				
Module objectives/intended learning outcomes	After following this lecture, students are expected to have: 1. Standard technical skills supported by appropriate concepts, formulas, methods and reasoning; 2. A critical, logical and systematic mindset; As well as creativity in problem-solving related to calculus; 3. The ability to communicate the results of thought and work, both in oral or writing; 4. Readiness to study other subjects, which require calculus as a prerequisite, independently.				
Content	This course gives rigorous understanding of some topics in calculus as one of the fundamental courses in mathematics to prepare the students in learning advanced topics. It covers techniques of integration, infinite series, parametric equations, vectors and geometry in space, derivatives in R^n , multiple integrals, first and second order differential equations.				
Study and examination requirements and forms of examination	Assessment of student's competency achievement using assignment (project, homework and quiz), Middle Semester Exam and Semester Exam.				
Media employed	Chalkboard, power point, tutorial				
Reading list	Thomas, Calculus, Pearson Education, 2010, 12th ed. (Main Reference)				
	James Stewart, Calculus, Brooks/Cole Publishing Company, 1999, 4th ed.				
	Dale Varberg, Edwin Purcel and Steve Rigdon, Calculus, Prentice Hall, 2007, 9th ed.				
Module name:	**Elementary Physics IA**				
Module level, if applicable	1st year				
Code, if applicable	FI1101				
Semester(s) in which the	1st Semester				

module is taught					
Person responsible for the module		Faculty of Mathematics and Natural Science			
Lecturer		Faculty of Mathematics and Natural Science			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	4	Lecture	Lecture	56
				Preparation and Follow Up	56
Laboratory Work	80	2	Laboratory report	Laboratory	28
				Preparation and Follow Up	28
Total Workload		168 hours			
Credit points		4 CU			
Requirements according to the examination regulations		Mid semester exam, Semester exam, Laboratory test			
Recommended prerequisites		-			
Module objectives/intended learning outcomes		Understanding physical phenomena involving the movement of point objects, rigid bodies objects, elastic objects and fluids, due to various influences and able to formulate also solving the problems associated with it.			
Content		The topics on the subject are focused to the following subtopics: Kinematics variables, 1D, 2D and 3D Motions, Newton's Laws, Free-Body Diagrams, Work-Energy Theorem, Impuls and Linear Momentum, Conservation of Linear Momentum, Torque, Moment of Inertia, Angular Momentum, Conservation of Angular Momentum, Rotational Motion, Oscillating motion, Elasticity, Mechanical Waves, Hydrostatic Pressure, Surface Tension, Continuity Principle, Bernoulli Principle, Heat and Temperature, Heat Transfer, Gas Kinetic Theory, Thermodynamics Laws (0, 1, 2).		
Study and examination requirements and forms of		Paper test, laboratory report			

examination	
Media employed	Power point, chalkboard, laboratory
Reading list	1. David Halliday, Robert Resnick and Jearl Walker, Fundamentals of Physics, 8th ed. John Wiley & Sons, 2007, Asia 2. Alonso, M. & Finn, E.J. (1992). Physics. Addison-Wesley 3. Fishbane, P.M., et al (1996). Physics for Scientists and Engineers. Prentice Hall 4. Resnick, R, et al (1991, 1992). Physics, vol. I & II. John Wiley & Sons 5. Serway, R.A. (2002). Principles of Physics. Sanders College 6. Thomas A. Moore (2003). Six Idea That Shape Physics, 2nd edition, Mcgraw-Hill College 7. Young, H.D. & Freedman, R.A. (1996, 2001). University Physics. Addison-Wesley Cutnell, J.D. & Johnson, K.W. Physics. John Wiley & Sons, 2001.

Module name:		**Elementary Physics II**			
Module level, if applicable		1st year			
Code, if applicable		FI1201			
Semester(s) in which the module is taught		2nd Semester			
Person responsible for the module		Faculty of Mathematics and Natural Science			
Lecturer		Faculty of Mathematics and Natural Science			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	4	Lecture	Lecture	56
				Preparation and Follow Up	56
Laboratory Work	80	2	Laboratory report	Laboratory	28
				Preparation and Follow Up	28
Total Workload		168 hours			
Credit points		4 CU			

Requirements according to the examination regulations	Mid semester exam, Semester exam, Laboratory test
Recommended prerequisites	-
Module objectives/intended learning outcomes	Understanding physical phenomena involving the movement of point objects, rigid bodies objects, elastic objects and fluids, due to various influences and able to formulate also solving the problems associated with it.
Content	The topics on the subject are focused to the following subtopics: Electric Fields and Electric Forces, Gauss Law, Electric Potential Energy, Electric Potential Difference, Capacitors and Dielectrics, Magnetic Fields and Magnetic Forces, Faraday's Law, Lenz's Law, Reactance and Impedance, RLC Series Circuits and Resonance, Maxwell equation, EM Waves, Young's Slits Interference, Fraunhaufer Diffraction, Interference-diffraction, Polarization, Modern Physics, Atomic Physics & Material Physics.
Study and examination requirements and forms of examination	Paper test, laboratory report
Media employed	Power point, chalkboard, laboratory
Reading list	1. David Halliday, Robert Resnick and Jearl Walker, Fundamentals of Physics, 8th ed. John Wiley & Sons, 2007, Asia 2. Alonso, M. & Finn, E.J. (1992). Physics. Addison-Wesley 3. Fishbane, P.M., et al (1996). Physics for Scientists and Engineers. Prentice Hall 4. Resnick, R, et al (1991, 1992). Physics, vol. I & II. John Wiley & Sons 5. Serway, R.A. (2002). Principles of Physics. Sanders College 6. Thomas A. Moore (2003). Six Idea That Shape Physics, 2nd edition, Mcgraw-Hill College 7. Young, H.D. & Freedman, R.A. (1996, 2001). University Physics. Addison-Wesley Cutnell, J.D. & Johnson, K.W. Physics. John Wiley & Sons, 2001.

Module name:	**General Chemistry IA**
Module level, if applicable	1st year
Code, if applicable	KI1101
Semester(s) in which the module is taught	1st Semester

UNDERGRADUATE PROGRAM OF GEOLOGICAL ENGINEERING
FACULTY OF EARTH SCIENCE AND TECHNOLOGY
INSTITUT TEKNOLOGI BANDUNG

Person responsible for the module		Faculty of Math and Natural Science			
Lecturer		Faculty of Math and Natural Science			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Lecture and discussion	Lectures	28
				Preparation and follow up	56
Laboratory Practice		1	Laboratory report	Laboratory Work	14
				Preparation and Follow Up	28
Total Workload		126 hours			
Credit points		3 CU			
Requirements according to the examination regulations		45% Mid semester exam + 45% Semester exam +10% Laboratory test. Passing the laboratory test is mandatory			
Recommended prerequisites		-			
Module objectives/intended learning outcomes		Providing knowledge as well as exploring basic concepts of chemistry, to be more familiar with it and understand the natural phenomena also their processes and changes, as a basic in studying the processes and mechanisms of nature at a further level, using these concepts to solve simple problems in daily life, science, and technology. Students are able to explain the chemical principles underlying the phenomena that occur in the natural environment.			
Content		Elements, compounds and periodic tables, mole concepts, empirical formulas, molecular formulas, limiting reagents, rendement and stoichiometry, chemical reactions (acid-base and redox) in solution, molecular structure, atoms and quantum mechanics, chemical bonds, structures and bond theory , The form of matter, the phase diagram, the nature of the gas, the force between molecules, thermochemistry, and chemical thermodynamics. This lectures give an overview of the following topics:			

	1. Elements, Compounds, and Periodic Table 2. Mol and Stoichiometry 3. Molecular Reactions in Solution 4. Molecular Structure 5. Oxidation and Reduction Reactions 6. Atoms and Quantum Mechanics 7. Chemical Bonds 8. Structure and Bond Theory 9. Thermochemicals 10. Gas Properties 11. Force between molecules and physical properties of liquids and solids 12. Thermodynamics
Study and examination requirements and forms of examination	Paper Test and Laboratory Report
Media employed	Power Point, Laboratory Tools
Reading list	J. E. Brady, F. A. Senese and N D Jespersen, Chemistry, 6th edition, John Wiley and Sons Inc., 2010.

Module name:	**General Chemistry IIA**
Module level, if applicable	1st year
Code, if applicable	KI1201
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Faculty of Math and Natural Science
Lecturer	Faculty of Math and Natural Science
Language	Indonesian
Relation to curriculum	Compulsory Course

Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Lecture and discussion	Lectures	28
				Preparation and follow up	56
Laboratory Practice		1	Laboratory report	Laboratory Work	14
				Preparation and Follow Up	28
Total Workload		126 hours			
Credit points		3 CU			
Requirements according to the examination regulations		45% Mid semester exam + 45% Semester exam +10% Laboratory test. Passing the laboratory test is mandatory			
Recommended prerequisites		-			
Module objectives/intended learning outcomes		Providing knowledge as well as exploring basic concepts of chemistry, to be more familiar with it and understand the natural phenomena also their processes and changes, as a basic in studying the processes and mechanisms of nature at a further level, using these concepts to solve simple problems in daily life, science, and technology. Students are able to explain the chemical principles underlying the phenomena that occur in the natural environment.			
Content		Ideal solution, colligative properties, electrolyte and non-electrolyte solutions, reaction quotients, equilibrium constant, Le Chatelier principle, factors affecting equilibrium, Gibbs free energy in equilibrium, rate law, reaction order, half-life, factors affecting reaction rate, reaction mechanism, collision theory and transition state, acid-base theory, pH, buffer solution, hydrolysis, acid-base reaction, Ksp, Volta cell, standard reduction potential, cell notation, Nernst equation, electrolysis cell, Faraday's law, , The law of decay rate, the half-life, the decay rate constant, the fission and fusion nuclear reactions, mass defects, radionuclide applications, organic chemical functional groups, nomenclature, simple organic chemical reactions, polymers, and the introduction of the structure and function of biomolecules (proteins, Enzymes, carbohydrates, fats, and nucleic acids) This lectures give an overview of the following topics: 1. Characteristic of the liquids			

	2. Kinetics in chemistry 3. Chemical Equilibrium 4. Acid Base Equilibrium in Solution 5. Solubility and Equilibrium of Solutions 6. Electrochemistry 7. Nuclear Reaction 8. Organic Compounds, Polymer, and Biochemistry
Study and examination requirements and forms of examination	Paper Test and Laboratory Report
Media employed	Power Point, Laboratory Tools
Reading list	J. E. Brady, F. A. Senese and N D Jespersen, Chemistry, 6th edition, John Wiley and Sons Inc., 2010.

Module name:		**Introduction to Engineering and Design I**			
Module level, if applicable		1st year			
Code, if applicable		KU1101			
Semester(s) in which the module is taught		1st Semester			
Person responsible for the module		LTPB ITB			
Lecturer		LTPB ITB			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Discussion	Lecture	28
				Preparation and follow up	56
Total Workload		84 hours			

Credit points	2 CU
Requirements according to the examination regulations	Homework, Group project, Mid Semester Exam, Final Exam
Recommended prerequisites	-
Module objectives/intended learning outcomes	1. Students have motivation to studying engineering 2. Students understand what engineering and engineer profession, including responsibility in various related aspects 3. Students understand that engineering issues are multi-faceted and require multidisciplinary solutions 4. Students recognize and understand some engineering disciplines and their interrelationships 5. Students recognize contemporary issues related to engineering disciplines 6. Students understand the principles of science and mathematics applied in solving engineering problems 7. Students are able to propose an alternative solution to engineering problems in their environment by considering various related aspects
Content	This course covers engineering and design in society, engineer as a profession, aspects in engineering, key elements of engineering analysis, steps in solving problems, concept of energy, conversion and conservation, and some examples of engineering discipline as well as ethics in engineering.
Study and examination requirements and forms of examination	Homework, Group project, paper test
Media employed	Power point
Reading list	Philip Kosky et al., Exploring Engineering : An Introduction to Engineering and Design, Academic Press, 2010 (Main Reference)
	Saeed Moaveni, Engineering Fundamentals : An Introduction to Engineering, Cengage Learning, 2011 (Supporter Reference)
	Holtzapple & Reece, Foundations of Engineering, McGraw-Hill, 2003 (Supporter Reference)
Additional Information	The teaching method used is team teaching. One lecturer is responsible for the class. Engineering discipline materials are given in rotation by other lecturers with appropriate background.

UNDERGRADUATE PROGRAM OF GEOLOGICAL ENGINEERING
FACULTY OF EARTH SCIENCE AND TECHNOLOGY
INSTITUT TEKNOLOGI BANDUNG

Module name:		**Introduction to Engineering and Design II**			
Module level, if applicable		1st year			
Code, if applicable		KU1201			
Semester(s) in which the module is taught		2nd Semester			
Person responsible for the module		LTPB ITB			
Lecturer		LTPB ITB			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Discussion	Lecture	28
				Preparation and follow up	56
Total Workload		84 hours			
Credit points		2 CU			
Requirements according to the examination regulations		Homework, Group project			
Recommended prerequisites		-			
Module objectives/intended learning outcomes		1. Students have motivation to study engineering 2. Students understand the principles of science and mathematics applied in solving engineering problems. 3. Students experience and engage in simple engineering design problems are following correct process rules Students have basic skills in teamwork			
Content		This lecture is offering a deeper understanding on engineering and design by means of teamwork student projects.			
Study and examination requirements and forms of examination		Individual and group assessments by lecturers and assessment by group members.			
Media employed		Power Point			

Reading list	Philip Kosky et al., Exploring Engineering : An Introduction to Engineering and Design, Academic Press, 2010 (Main reference)
	Saeed Moaveni, Engineering Fundamentals : An Introduction to Engineering, Cengage Learning, 2011 (Supported Reference)
	Holtzapple & Reece, Foundations of Engineering, McGraw-Hill, 2003 (Supported Reference)
Additional Information	Projects in groups are carried out in F / S coordination or combined F / S

Module name:		**Indonesian Language: Scientific Writing**			
Code, if applicable		KU1011			
Module level, if applicable		1st year			
Semester(s) in which the module is taught		1st semester			
Person responsible for the module		LTPB ITB			
Lecturer		LTPB ITB			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Lecture	Lecture	28
				Preparation and Follow Up	56
Total Workload		84 hours			
Credit points		2 CU			
Requirements according to the examination regulations		Presence Mid semester exam Semester exam Paper Home work			

Recommended prerequisites	-
Module objectives/intended learning outcomes	Students able to communicate both oral and written using the correct Indonesian language and uphold the principle of originality (honesty) in accordance with their respective professions in the working world.
Content	Students get materials on variety of language of scientific writing and their characteristics; spelling, capitalization, loan translation, and use of punctuation; word formation and use of word formation in sentences; basic sentence patterns, effective sentences, and sentence variation; terminologies, definitions, and syllogisms; conditions, kinds, developments of paragraphs; selection of topics, themes, titles, and outlining; introductory chapter, issues, analysis, and conclusions; initial complementation and final complementation; typing, citations, and references.
Study and examination requirements and forms of examination	Paper test, Paper
Media employed	Power point
Reading list	1. Alwi Hasan.et.al. Tata Bahasa Baku Bahasa Indonesia. Jakarta : Balai Pustaka, 1998.
	2. Depdikbud. RI. Kamus Umum Bahasa Indonesia Jakarta ; Balai Pustaka. 2000
	3. Keraf, Gorys, Komposisi . Ende Flores : Nusa Indah 1998
	4. Sosio Komunikasi, KK Ilmu Kemanusiaan, FSRD-ITB 2006 Metode Penulisan Ipteks. Bandung Penerbit ITB.
	5. Depdikbud RI. Pedoman Umum Ejaan yang Disempurnakan. Jakarta:Balai Pustaka 1997
	6. Depdikbud RI. Pedoman Pembentukan Istilah. Jakarta:Balai Pustaka 1997

Module name:	**Introduction to Earth Sciences**
Module level, if applicable	1st year
Code, if applicable	KU1163
Semester(s) in which the module is taught	1st semester
Person responsible for the	Faculty of Earth Science and Technology

<table>
<tr><td colspan="2">module</td><td colspan="5"></td></tr>
<tr><td colspan="2">Lecturer</td><td colspan="5">Team from Faculty of Earth Science and Technology</td></tr>
<tr><td colspan="2">Language</td><td colspan="5">Indonesian</td></tr>
<tr><td colspan="2">Relation to curriculum</td><td colspan="5">Compulsory Course</td></tr>
<tr><td>Types of teaching and learning</td><td>Class Size</td><td>Attendance time (hours per week per semester)</td><td>Forms of active participation</td><td colspan="3">Workload</td></tr>
<tr><td rowspan="2">Lecture</td><td rowspan="2">80</td><td rowspan="2">2</td><td rowspan="2">Lecture and discussion</td><td>Lecture</td><td>28</td></tr>
<tr><td>Preparation and Follow up</td><td>56</td></tr>
<tr><td colspan="2">Total Workload</td><td colspan="5">84 hours</td></tr>
<tr><td colspan="2">Credit points</td><td colspan="5">2 CU</td></tr>
<tr><td colspan="2">Requirements according to the examination regulations</td><td colspan="5">Mid semester exam 40%

Final semester exam or group presentation 40% (minimum presence 80% to join)

Other (quiz, presence, etc.) 20%</td></tr>
<tr><td colspan="2">Recommended prerequisites</td><td colspan="5">-</td></tr>
<tr><td colspan="2">Module objectives/intended learning outcomes</td><td colspan="5">Students get an overall picture of the earth as a whole, and understand Earth as a living resource that can be exploited through exploratory technology and how it impacts when exploited.

Students understand how the nature and dynamics of the Earth, so that at least able to analyze the problems associated with the earth, especially when done exploration of earth resources, and later able to approach to solve the problem by following the rules of environmental and sustainable.</td></tr>
<tr><td colspan="2">Content</td><td colspan="5">Earth science and technology is a lecture explaining the Earth system, the dynamic relationship between the atmosphere (climate, air), the hydrosphere (ocean, water), the lithosphere (the Earth's shell) and the row (interior of the Earth); And how its role and influence on life on Earth, especially human.

This lecture discusses the beginnings of the birth and development of earth science, the formation and evolution of the Earth, the material of</td></tr>
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	the Earth (solid, gas, liquid) and its processes (including those that cause disaster), and the uniqueness of Indonesia's earth, including the richness of its Earth resources. Also introduced a way of exploration in the field of earth including measuring and monitoring the dynamics of earth.
Study and examination requirements and forms of examination	Paper test, Mid semester exam, and group presentation as Final semester exam.
Media employed	Power Point
Reading list	1. Pengantar Ilmu dan Teknologi Kebumian, B. Brahmantyo, D.K. Mihardja, B. Santoso, dan B. Tjasjono; FITB, 2009 (*in press*) 2. Earth Science, 11/E, Tarbuck, E.J., Lutgens, F.K. dan Tasa, D., Prentice Hall. 2006. 3. The Blue Planet: An Introduction to Earth System Science, 2nd Ed., Brian J. Skinner, Steven C. Porter, & Daniel B. Botkin, John Wiley & Sons, 1999. 4. Geodesy the Concept, Petr Vanicek and E.J. Krakiwsky, North Holland Publishing, Amsterdam 1986.

Module name:		**English – Critical Reading Skills**			
Module level, if applicable		1st year			
Code, if applicable		KU1021			
Semester(s) in which the module is taught		2nd semester			
Person responsible for the module		Lembaga MKU ITB			
Lecturer		Lembaga MKU ITB			
Language		English			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Lecture and discussion	Lecture	28
				Preparation and Follow up	56

Total Workload	84 hours
Credit points	2 CU
Requirements according to the examination regulations	(Attendance < 85%, students are not allowed to sit for the Final Test.) Final assignment (750-word summary response essay) due.
Recommended prerequisites	-
Module objectives/intended learning outcomes	(A) Can understand the function of each section of the textbook, (B) Can judge a good paragraph, (C) Can write different types of paragraphs correctly and properly, (D) May annotate relevant ideas as reading needs of the students, (E) Can creating outline ideas that have been annotated by the students (F) Can write a summary with different sentence structure and word choice (paraphrasing), (G) Can write summary-response essays according to the format, and (I) Can write the correct quotations for ideas that students quoted on the essay they wrote.
Content	Train the students' critical thinking skills in reading activities that include (a) before the reading is done, (b) at the time of reading is in progress, and (c) after the reading is over. The critical thinking skills are trained before the reading activity is conducted include (1) the ability to check the book parts in order to determine whether or not a book is relevant to the students' reading needs. While (2) the reading activity is in progress, the students are trained to critically identify the ideas that are relevant to their reading needs by means of annotations. In addition, the students are also trained to identify various ideas, such as the main ideas, supporting ideas, counter arguments, and refutations. At the same time, students are also trained to make the best use of their linguistic knowledge and world knowledge as well as the contexts in the reading text to know the meaning of an unfamiliar word by guessing. Finally, (3) when the reading is over, the students are trained to be able to critically summarize in their own words (paraphrasing) the article before they respond the article in a summary-response essay while applying the correct citation in their essay.
Study and examination requirements and forms of	Main assessment aspect: (Assessment Components)

examination	1. Assignment, quiz, etc. (30%) 2. Mid-semester exam (30%) 3. Semester exam (40%)
Media employed	Power point, reading assignment
Notes:	Students are placed in accordance with placement test results
Reading list	1. Amaudet, M.L. and barret, M. E. 1984. Approaches to Academic Reading and writing. Prentice Hall: Englewood Cliff, NJ.
	2. Axelrod, R. B. And Cooper, C.R. 1990. Reading Critically, Writing Well. St. Martin's Press: New York
	3. Bartram, m. And Perry, A. 1989. Reading Skills. Penguin Books: Great Britain
	4. Blake, K.A. 1989. College Reading skills. Prentice hall: New Jersey
	5. Floris, Flora Debora, et al. 2007. Success in Academic English: English for General Academic Purpose. Graha Ilmu: Jakarta.
	6. Folse,Keith.S. 2001. Great paragraph. Houghton Mifflin Company: USA
	7. Lyons, L and Heasley, B. 1987. Study Writing. Cambridge University Press: Cambridge
	8. Mikulecky, B.S. and Jeifries, L. 1998. Reading Power. Addison Wesley Longman, Inc: New York
	9. Mosback, G. and Mosback, V. 1986. Practical Faster Reading. Cambridge university Press: Cambridge
	10. Reid, Joy. M. 2000. The process of Composition. 3rd Edition. Longman: New York
	11. Rogers, Bruce. 2007. The Complete Guide to the TOEFL Test (ibt edition). Thomson: USA.
	12. KK Ilmu Kemanusiaan, FSRD-ITB. Critical Reading. Bandung: Penerbit ITB. 2013 [Main Reference]

Module name:	**English – Academic Writing**
Module level, if applicable	1st year
Code, if applicable	KU1022
Semester(s) in which the module is taught	2nd semester
Person responsible for the module	Lembaga MKU ITB
Lecturer	Lembaga MKU ITB
Language	English
Relation to curriculum	Compulsory Course

UNDERGRADUATE PROGRAM OF GEOLOGICAL ENGINEERING
FACULTY OF EARTH SCIENCE AND TECHNOLOGY
INSTITUT TEKNOLOGI BANDUNG

<table>
<tr><td>Types of teaching and learning</td><td>Class Size</td><td>Attendance time (hours per week per semester)</td><td>Forms of active participation</td><td colspan="2">Workload</td></tr>
<tr><td rowspan="2">Lecture</td><td rowspan="2">80</td><td rowspan="2">2</td><td rowspan="2">Lecture and discussion</td><td>Lecture</td><td>28</td></tr>
<tr><td>Preparation and Follow Up</td><td>56</td></tr>
<tr><td colspan="2">Total Workload</td><td colspan="4">84 hours</td></tr>
<tr><td colspan="2">Credit points</td><td colspan="4">2 CU</td></tr>
<tr><td colspan="2">Requirements according to the examination regulations</td><td colspan="4">(Attendance < 85%, students are not allowed to sit for the Final Test.)
(Final assignment (2000-argumentative essay) due.)</td></tr>
<tr><td colspan="2">Recommended prerequisites</td><td colspan="4">-</td></tr>
<tr><td colspan="2">Module objectives/intended learning outcomes</td><td colspan="4">Students are able to produce correct scientific essays in English properly by using various types of paragraphs consisting of compact and systematic sentences (2000 words) as well as clear systematic ideas.</td></tr>
<tr><td colspan="2">Content</td><td colspan="4">Students will learn materials on academic writing that cover the following: vocabulary, spelling, punctuation; sentences: dependent clause and independent clause; kinds of sentences: simple sentence, compound sentence, and complex sentence; paragraphs that comprise topic selection, topic sentence/main idea, supporting sentences, concluding sentence; unity and coherence. They will also learn how to write a 2000-word argumentative essay that consists of introductory paragraph, body paragraphs and concluding paragraph. The introductory paragraph discusses thesis statement, hook, and transition. Students also learn skills that are very important in avoiding plagiarism in writing, i.e. paraphrasing, citation, referencing.</td></tr>
<tr><td colspan="2">Study and examination requirements and forms of examination</td><td colspan="4">Mid semester exam (30%)
Semester exam (40%)
Assignment, quiz, etc. (30%)
(The final task is a 2000 word essay, collected before Final Assignment (a 2000-word essay))</td></tr>
<tr><td colspan="2">Media employed</td><td colspan="4">Visualizer, power point</td></tr>
<tr><td colspan="2">Notes:</td><td colspan="4">Students are placed in accordance with placement test results</td></tr>
<tr><td colspan="2">Reading list</td><td colspan="4">1. Bander, R.. From Sentence to Paragraph. Canada: CBS College Publishing 1981 [Supporting Reference]</td></tr>
</table>

	2. English, K.A. Northstar: Reading and Writing. New York: Longman. 2004. [Supporting Reference]
	3. Frank, M. Sentences and Complex Sentences. New Jersey: Prentice Hall. 1972. [Supporting Reference]
	4. Oshima, A. and Ann Hague. Writing Academic English. New York: Longman. 1999. [Supporting Reference]
	5. KK Ilmu Kemanusiaan, FSRD-ITB. Academic Writing. Bandung: Penerbit ITB. 2013 [Main Reference]
	6. Strauch, O.A. Writers at Work: The Short Composition. Cambridge: Cambridge University Press. 2005. [Supporting Reference]
	7. Williams, A. Writing for IELTS. London: Harper Collins. 2011. [Supporting Reference]
	8. Wingersky, J. Et al. Writing Paragraphs and Essays. California: Wardsworth Publishing Company. 1995. [Supporting Reference]
	9. Zemach, E.D. Writers at Work: The Essay. Cambridge: Cambridge University Press. 2008. [Supporting Reference]

Module name:		**English – Presentation Skills**			
Module level, if applicable		1st year			
Code, if applicable		KU1023			
Semester(s) in which the module is taught		2nd semester			
Person responsible for the module		Lembaga MKU ITB			
Lecturer		Lembaga MKU ITB			
Language		English			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture (5 meetings)	80	2	Lecture and discussion	Lecture	10
				Preparation and Follow Up	20
Presentation (9 meetings)	80	2	Presentation and discussion	Presentation	18
				Preparation and Follow Up	36
Total Workload		84 hours			
Credit points		2 CU			

Requirements according to the examination regulations	Presence less than or equal to 85% should not follow UAS (E)
Recommended prerequisites	-
Module objectives/intended learning outcomes	After completing the course, students can make formal academic presentations in English, in accordance with existing rules by paying attention to aspects of communication such as body language, voice and others.
Content	Provide students with basic theory of Presentation in English for academic purposes such as presenting scientific paper and train them to perform scientific presentation for their academic needs. This course emphasizes on Theory and Practice with composition 30% and 70%. The basic theory is how to prepare and perform a presentation in English. In preparation, it focuses on presentation's objective, structure, and time which is embodied in Why, Who, What, How, When and Where. In performing, it discusses six points: Beginning, Language, Visual Aids and Body Language, Voice, Ending, and Question. For practice, students have three times performances: 5, 10, and 15 minutes for Practice, Mid, and Final test.
Study and examination requirements and forms of examination	Mid semester exam 30% Semester exam 40% Assignment/class attendance 30% (Final Assignment: 1000 words essay, collected 1 week before last the presentation)
	Assessment in this course using the process assessment and appearance method. Assessment is carried out continuously from one performance to the next, given not only by lecturers but also by classmates as audiences and presenters. Audience should fill out the assessment sheets for each presenter by including feedback and suggestions for further performance improvements. Lecturers provide feedback on every appearance.
Media employed	Watching video of scientific presentations Attend national and international conferences
Notes:	Students are placed in accordance with placement test results
Reading list	1. Goodale, Malcom. Professional Presentations: A video-based course. Cambridge University Press. 2006 (Main reference)
	2. KK Ilmu Kemanusiaan, FSRD-ITB. Academic Writing. Bandung: Penerbit ITB. 2013 [Main reference]
	3. Meriwether, Nell.w. Successful Research Paper in 12 Easy Steps.

	McGraw-Hill. 2000 (Supporting reference)
	4. Oshima, Alice. Writing Academic English. Longman. 2000 (Supporting reference)
	5. Powell, Mark. Presenting in English: How to give successful presentations. Thomson Heinle. 2002 (Supporting reference)
	6. Williams,Erica J. Presentations in English Macmillan. 2008 (Supporting reference)

Module name:		**Introduction to Information Technology B**			
Module level, if applicable		1st year			
Code, if applicable		KU1072			
Semester(s) in which the module is taught		2nd semester			
Person responsible for the module		LTPB ITB			
Lecturer		LTPB ITB			
Language		Indonesian			
Relation to curriculum		Compulsory Course			
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	2	Lecture	Lecture	28
				Preparation and Follow Up	28
Practicum	40	1	Quizzes, homework	Practicum	14
				Preparation and Follow Up	14
Total Workload		84 hours			
Credit points		2 CU			
Requirements according to the examination regulations		Mid semester exam Semester exam Quiz Assignment Laboratory Assignment			

Recommended prerequisites	-
Module objectives/intended learning outcomes	After attending this lecture, students are expected to: • Describing basic concepts in computer systems and organizations; knowing the various types of hardware and software and their utilization; also knowing the basic concepts in communication networks, including the internet. • Describing the use of the computers and communication networks ethically in various aspects of human life, especially related to student life in general and specific to faculty / school. • Implementing ethics in the utilization and dissemination of information through computers and communication networks. • Demonstrate the ability of computational thinking through the skill of composing algorithm. Produce simple programs in selected procedural programming languages and ready to develop independently in later stages.
Content	This course introduces information technology as a part of ethical development of creativity. The course materials include the introduction to computer system and organization (hardware and software), communication network (including the internet), the implications of the use of information technology in the aspects of human's life (especially the ones related to the life in the faculty/school), as well as computational thinking through the basics of procedural programming in a chosen programming language.
Study and examination requirements and forms of examination	Paper test, case study
Media employed	Power point and practicum
Reading list	1. G. Beekman and B. Beekman, Digital Planet: Tomorrow's Techology and You, Complete Tenth Edition, Prentice Hall, 2012 (or newest edition) (Main Reference) 2. C++ : Walter Savitch, Problem Solving with C++ (8th Edition) 3. Pascal : Walter Savitch, Pascal: An Introduction to the Art and Science of Programming (4th Edition) 4. Fortran : Michael Metcalf, John Reid, and Malcolm Cohen; Modern Fortran Explained (Numerical Mathematics and Scientific Computation) 5. B. K. Williams and S. C. Sawyer, Using Information Technology: A Practical Introduction to Computers and Communications, Ninth Edition Complete Version, Mc Graw Hill, 2011 (Alternative Reference) 6. D. Morley and C. S. Parker, Understanding Computers: Today and Tomorrow, 14th Edition Comprehensive, Course Technology, 2013

	(Supporting Reference)

Module name:	**Sports**				
Module level, if applicable	1st year				
Code, if applicable	KU1001				
Semester(s) in which the module is taught	1st Semester				
Person responsible for the module	LTPB ITB – Samsul Bahri, Drs., M.Kes.				
Lecturer	LTPB ITB				
Language	Indonesian				
Relation to curriculum	Compulsory Course				
Types of teaching and learning	Class Size	Attendance time (hours per week per semester)	Forms of active participation	Workload	
Lecture	80	1	discussion	Lecture	14
Sports Activity	80	1	Fitness progress	Coordinated Activity	14
				Independent Activity	56
Total Workload	84 hours				
Credit points	2 CU				
Requirements according to the examination regulations	-				
Recommended prerequisites	-				
Module objectives/intended learning outcomes	After attending this lecture students are expected to be able to maintain and improve the degree of physical fitness and able to understand the positive values of sports and can apply it in life on campus or general public.				
Content	The course including theory and practice. The theory involves the importance of sports, the body fitness, nutrition, sports and the principles of training, and various games of sport. The Practice includes the physical exercise.				
Study and examination requirements and forms of	Physical fitness progress (run test)				

examination	
Media employed	Power point, gymnasium and sports hall
Reading list	1. Bompa, T.O., 1994, Theory and Methodology of Training, Iowa: Kendal/Hunt Publishing Company
	2. Daniel Goleman, 1977, Emotional Intellegence, Jakarta: terjemahan PT. Gramedia.Pustaka
	3. Giriwijoyo, S., Y.S. dkk., 2005, Manusia dan Olahraga, Kerja sama ITB FPOK UPI Bandung, Penerbit ITB.
	4 Harsono, 1988, Coaching dan Aspek-asapek Psikologis dalam Coaching, CV. Tambak Kusuma.Pustaka
	5. Snow Harrison, 1992, The Power of Team Building, San Diego, California: Pfeiffer & Company
	6. Willmore, H., Jack & Costill, L., David., 1999, Physiology of Sport and Health Exercise