ASIIN

HANDBOOK MODULE

CIVIL ENGINEERING
POLITEKNIK NEGERI JAKARTA

BUILDING CONSTRUCTION ENGINEERING
CIVIL ENGINEERING
POLITEKNIK NEGERI JAKARTA

Module Designation	Pancasila	
Semester(s) in which the Module is Taught	1st	
Person Responsible for the Module	Rita Farida Dachlan S.H., M.H	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lectures, Debriefing, Case Studies, Independent Study	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3.63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives
	1.	Students are able to explain the Introduction to Pancasila Education.
	2.	Students are able to explain Pancasila in the study of the Indonesian history,
	3.	Students are able to explain Pancasila as the basis of the state, as the national ideology, as a philosophical system and as an ethical system,
	4.	Students are able to explain Pancasila as the basis for science development,
Content	Pancasila is an educational subject that provides students with understanding and comprehension of the Indonesian ideology.	
Examination Forms	Essay, Multiple Choices, Short Essay	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Dharmodiharjo, Mardoyo, Pringgodigdo, Purbopranoto, Sulandra, Santiaji Pancasila, 1984, Usaha Nasional Surabaya.	
	Heri Herdiawanto, Jumanta Hamdayama, 2010, *Cerdas Kritis dan Aktif Berwarganegara* (Intelligent Critical and Active Citizen), Erlangga publisher	
	Decree of Directorate General of Higher Education. Department of Education and Culture of the Republic of Indonesia Number 267/ Dikti / Kep. / 2000.	
	Decree of Director General of Higher Education, Department Education and Culture of the Republic of Indonesia Number: 38 / Dikti / Kep / 2002.	
	Decree of Director General of Higher Education, Department Education and Culture of the Republic of Indonesia Number: 84/E/ KPT /2020	

	Kaelan 2002, Citizenship Education, Paradigm Publisher, Yogyakarta
	Kaelan 2003. Pancasila Education. Paradigma Publisher. Yogyakarta
	Miriam Budiardjo, 2008, Fundamentals of Political Science, Jakarta, Publisher
	Muhammad Mona Adha, 2020, Pancasila Education, Graha Ilmu Publisher
	Citizenship Lecturer Team, 2010, Citizenship Education, Lembaga Penerbit PNJ
	T. Heru Nugriansah, 2021, Pancasila Education, Mitra Cendekia Medika Publisher
	Amendment to the 1945 Constitution
	Law Number 12 of 2012 on Higher Education

Module Designation	Indonesian Language	
Semester(s) in which the Module is Taught	1st	
Person Responsible for the Module	Linda Sari Wulandari, S.Hum., M.Hum.	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Seminar, Problem -based learning	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives
	1	Able to explain the Indonesian Language history, function, and styles.
	2	Able to apply Indonesian spelling and word choices.
	3	Able to make effective sentences and paragraphs.
	4	Able to write quotations, sources of quotations, and bibliography.
	5	Able to write scientific papers.
Content	Indonesian Language course is one of those provides students with knowledge about cultures and languages to enable students to apply cultural and language values in everyday life; to have a steady personality; to think critically, to be rational, ethical, aesthetic, and dynamic; broad-minded; and civilized democracy. Students become scientists and professionals with positive knowledge and attitudes towards Indonesian language as the state and national language, and able to use Indonesian Language properly and correctly to express understanding, sense of nationality and love for homeland, and for various purposes in the fields of science, technology and arts and their respective professions.	
Examination Forms	Essay, Multiple Choices, Short Essay	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Rahayu, Minto. 2007. Indonesian Language in Higher Education, Personality Development Course. Jakarta: Gramedia Widiasarana Indonesia.	
	Yanti, Prima Gusti, Fairul Zabadi, and Fauzi Rahman. 2016. Indonesian Language: Basic Concepts and Applications. Jakarta: Grasindo.	

	Wulandari, Linda Sari. 2020. Applied Indonesian Language. Jakarta: HalamanMoeka.
	Indonesian Language Guideline Development Team. 2016. General Guidelines for Indonesian Spelling. Jakarta: Agency for Language Development and Cultivation.
	Finoza, Lamuddin. 1991. Indonesian Secretary and Business Letters. Jakarta: Diksi Insan Mulia

Module Designation	English	
Semester(s) in which the Module is Taught	1st	
Person Responsible for the Module	Dra., Siti Aisiyah, M. Hum	
Language	English	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Seminar	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives
	1	Students are able to identify parts of speech and look for their meanings of new words, and to derive words based on each part of speech,
	2	Student are able to scan the reading materials to look for specific information,
	3	Student are able to listen to main idea and specific information,
	4	Student are able to write paragraphs in unity and coherence,
	5	Student are able to give an oral report of written text (workshop practice)
Content	This English course provides students with the topics about different learning strategies to learn a foreign language, Parts of Speech, Vocabulary Building Skills, Learning Various reading strategies, Reading a paragraph, Listening to conversation and short story, Learning to write a basic academic paragraph, Reporting Workshop practice	
Examination Forms	Essay, Multiple Choices, Short Essay	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Chalker, Sylvia.1984.Current English Grammar. Hongkong: Macmillan Publishers Ltd	
	Jacobs A Roderick.1995.English Syntax A Grammar For English Language Professionals. New York: Oxford University Press,	

	Murcia-Celce, Marianne and Diane Larsen-Freeman. 1999. The Grammar Book: An ESL/EFL
	Teacher's Course
	Baron's TOEIC Test

Module Designation	Applied Physics	
Semester(s) in which the Module is Taught	1st	
Person Responsible for the Module	Tri Wulan Sari, S.Si., M.Si	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, small group Discussion, Problem -based learning	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1.	Students are able to solve problems in case study concerning unit and dimensional systems, various unit conversions, vector & scalar quantities, and their application in Civil Engineering
	2.	Students are able to analyze problems in case study concerning kinematics, namely magnitude in motion, straight motion, bullet motion, circular motion
	3.	Students are able to solve problems in case study concerning force dynamics, rigid body equilibrium and lifts in Civil Engineering
	4.	Students are able to analyze problems in case study concerning oscillations and waves
	5.	Students are able to discuss problems in case study concerning static fluids, dynamic fluids, and heat transfer, as well as the applications of Physics in Civil Engineering in graphical form on Microsoft excel
Content	In this course, students learn about the principles of Physics related to Civil Engineering that discusses about unit systems, vectors, kinematics of motion, dynamics, centers of mass, oscillations, waves, elasticity, equilibrium, fluids, heat and heat transfer.	
Examination Forms	Essay, Multiple Choices, Short Essay	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assigments and Attendances: 30%	
Reading List	Young, H.D., Freedman, R.A.,. 2010. University Physics with Modern Physics 13th edition. Addison Wesley.	
	Halliday, David. Resnick, Robert. and Walker, Jear. 2011. Fundamental of Physics 9th Edition. USA.	
	Hidjan, A.G., 2018. Physics. Jakarta State Polytechnic.	

	Serway, R.A. and Jewett, J.W.,. 2014. Physics for Scientists and Engineers 9th Edition. Boston.
	Abdullah, Mikrajuddin. 2017. Basic Physics II. Bandung University of Technology.

Module Designation	Engineering Mechanics I	
Semester(s) in which the Module is Taught	1 (One)	
Person Responsible for the Module	Rinawati, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study, Discussion	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes / week	
	Structured Learning: 2 x 60 = 120 minutes / week	
	Self-Study: 2 x 60 = 120 minutes / week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives
	1	Students are able to explain the concepts of forces and moments, certain static structures and procedures for analyzing certain static structures
	2	Students are able to identify various types of loads, displacement, and concept of law of balance that serves on Building structures
	LO4	Able to make engineering designs of multi-storey Buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives
	1	Students are able to calculate the displacement reaction and internal forces in the form of moments, shearing forces and normal forces on simple beams, cantilever beams, overhanging beams, plane static moments and gravity center of sections, as well as moment of inertia of sections
	2	Students are able to describe moment diagrams, shearing forces and normal forces for simple beams, cantilever beams, overhanging beams
Content	Engineering Mechanics 1 course provides students with the fundamentals of Statics and Strength Science of Construction Materials.	
Examination Forms	Essays	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Badihi, Handbook of Engineering Mechanics (Diktat Mektek) 1	
	RC. Hibbeler, Engineering Mechanic Static, 7nd edition	

	RC. Hibbeler, Mechanic of Materials, 2nd edition
	Chu-Kia Wang. Statically Indeterminate Structure. Kogakusha : Mc. Graw Hill
	E.P. Popov. Engineering Mechanics (Translation)
	Badihi, Handbook for Material Strength Science Course

Module Designation	Material Technology	
Semester(s) in which the Module is Taught	1 (One)	
Person Responsible for the Module	Djedjen Achmad	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study Method, Group Discussion, Collaborative Learning	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits /3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO4	Able to make engineering designs of multi-storey Buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to explain the criteria and functions of several types of hydraulic adhesive materials used in Building construction work.
	2	Students are able to explain the types of admixture used in concrete, as well as the types and requirements of water for concrete.
	3	Students are able to explain the types of ceramics for building and their requirements, the types of metal that meet the requirements and suitable for building construction work, types of cement materials for building construction work.
	4	Students are able to identify the cycles and criteria of natural stone that meet the requirements, classification and aggregate requirements for building materials.
	5	Students are able to identify the type of wood used in building construction work.
Content	Material Technology 1 course provides students with knowledge about the formation of natural stone, aggregate, hydraulic adhesive materials, water, admixtures, building ceramics, metals, and building materials from cement in building construction.	
Examination Forms	Essays	

Study and Examination Requirements	Midterm Exam and Final Exam: 40%; Activity and discipline: 30%; Assignments and Attendances: 30%

Module Designation	Land Measurement Science 1 (Theory)	
Semester(s) in which the Module is Taught	1 (one)	
Person Responsible for the Module	A'isyah Salimah, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, case study method	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey Buildings.
	No	Module objectives
	1	Students are able to analyze data resulted from measurements using simple tools and measurement of level properties (chained, longitudinal and transverse profiles, situation/contour waterpass).
	LO6	To be able to do site survey for Buildings.
	No	Module objectives
	1	Students are able to explain the measurement tools and equipment, measurement dimensions, distance measurement, to make straight and perpendicular lines in the field, errors that occur in field measurements and coordinate measurement.
	2	Students are able to plan a simple horizontal curve
	3	Students are able to explain the sections and requirements of level properties in field measurements
Content	Land Measurement Science 1 course provides students with knowledge on how to make site maps using simple tools by applying the basic principles of straight lines and perpendicular lines and using leveling tools in measuring height differences and distances, so that students are able to identify the soil surface profile and make contour maps in building construction.	
Examination Forms	Essays	

Module Designation	Engineering Drawing 1	
Semester(s) in which the Module is Taught	1st	
Person Responsible for the Module	Sukarman , S.Pd., M.Eng	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	1. Lecture 2. Case Study	
Workload (incl. Contact hours, self-study hours)	Learning Process: 3 x 50 = 150 minutes/ week	
	Structured Learning: 3 x 60 = 180 minutes/ week	
	Self-Study: 3 x 60 = 180 minutes/ week	
Credit Points	3 credits (sks) / 5,44 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO4	Able to make engineering designs of multi-storey Buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives
	1	To be able to explain the concept of engineering drawings and 3D BIM in construction process
	LO5	To be able to draw buildings to support the processes of designing, Building construction implementation and supervision using digital technology.
	No	Module objectives
	1	Able to make Sketch Drawings based on the results of measurement
	2	Able to make drawings using several 2D & 3D drawing techniques, both manually or BIM-based
	3	Able to prepare DED drawing documents
	4	Able to present 2D and 3D shop drawings
Content	This course aims for practicing and designing shop drawings for low-rise buildings manually within BIM framework.	
Examination Forms	Assignment & multiple choice questions.	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Ching, Frank. 1992. Architectural Graphics. Erlangga Publisher.	
Reading List	Weidhas, Ernest. R. 1989. Drafting and Construction. Allyn and Bacon USA.	
	Engineering Drawing Handbook	

	Nurwidyaningrum, Dyah. 2020. Engineering Drawing using Autocad. K-Media: Yogyakarta.
	Drawing using Autocad. Thabrani, Suryanto. 2005. Elex Media Komputindo.

Module Designation	Land Measurement 1	
Semester(s) in which the Module is Taught	1 (One)	
Person Responsible for the Module	Handi Sudardja S.T. M.Eng.,	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lab works, case study methods	
Workload (incl. Contact hours, self-study hours)	Learning Process 2 x 170 = 340 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO6	To be able to do site survey for Buildings.
	No	Module objectives:
	1	Students are able to use measuring tools and equipment suitable to their works
	2	Students are able to measure sites and horizontal curves as well as carry out stake out work with simple tools in the field.
	3	Students are able to measure level, longitudinal and cross-sectional profiles, as well as measure sites/contour using waterpass tools.
	LO8	To be able to make Building test reports and quality control.
	No	Module objectives:
	1	Students are able to make site maps and reports based on data resulted from measurements using simple tools and measurement of level properties (chained, longitudinal and cross-sectional profiles, situation/contour waterpass).
Content	Land Measurement 1 (Practice) course is for course for practicing and drawing site maps using simple tools by applying the basic principles of straight and perpendicular lines and by using leveling tools in measuring distances and height differences so that students can identify the land surface profiles and the contour maps in the design and implementation of roads and bridges.	
Examination Forms	Tool Demonstration Practice, Oral test	

Study and Examination Requirements	Activity 30%, attendance 10%, Report 30%, Evaluation 30%
Reading List	Surveying for Construction, WH Irvine Mc; Mc Graw Hill
	Land Measurement Science, Soetomo Wongsotjitro; Kanisius Foundation - Land Measurement 1.2, Yacob Rais; Prof. Ir, Msc; Cipta Sari
	Surveying, Colo Kochher; Katson Publishing House
	Land Surveying, Ramsay J.P Wilson: M & E Handbooks
	Surveying, A Bannister & S Raymond; The English language Book Society and Pitman
	Measurement and Mapping in Construction Work, Ir Indra Sinaga, Msurv.Sc., John Hi-Tech Idetama Foundation

Module Designation	WOOD CONSTRUCTION WORK	
Semester(s) in which the Module is Taught	1 (One)	
Person Responsible for the Module	Putera Agung Maha Agung, S.T., M.T., Ph.D.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lab works, Case Study Methods	
Workload (incl. Contact hours, self-study hours)	Practice: 2 x 170 = 340 minutes / week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students have good understanding about woods and the types of wood joints in building / civil construction, the implementation of OHSE (Occupational Health, Safety & Environment) according to the manual.
	2	Students are able to use wood working tools (manual and electric hand tools) according to the manual.
	3	Students are able to know how to use planes and saws; how to do beam connection works; pole connection works; wide direction plank joint works; corner joint works; wood joint applications; as well as finishing work on wood.
Content	This course studies the implementation of wood construction work in building / civil construction, such as wood construction materials, various types of wood joints in building / civil construction, wood working tools (manual and electric hand tools), occupational safety and health as well as finishing.	
Examination Forms	Essays, Response	
Study and Examination Requirements	Practical Results 70%; Practical Report: 20%; Assignments and Attendances: 10%	
Reading List	Agus Sunaryo., 1997, Wood Furniture Design, Kanisius Foundation, Yogyakarta.	
	Bada Haryadi. 2000. Job Sheet of Woodwork Practice 1 Semester 1 D3 Program Civil Engineering. Yogyakarta: Department of Building Engineering Education, Faculty of Engineering, Yogyakarta State University	

	A. Yamin, et all. 1999. Wood Joints and Connections (Module 9). Jakarta : Directorate General of Islamic Institutional Development, Directorate of Islamic Religious College Development, Ministry of Religion

Module Designation	Masonry Construction Work	
Semester(s) in which the module is taught	1st	
Person Responsible for the Module	Drs. Yuwono, S.T., M.Eng.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and recommended prerequisites for joining the module	-	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the definition and scope of masonry practice, the introduction to masonry materials and tools, types of masonry joints
	2	Students are able to make river stone and rollag foundations, ½ stone and bricks, plastering and rendering, installation of ceramics (walls and floors)
Content	This course will discuss the installation of ½ stone walls, stone and rollag foundations, plastering and rendering, installation of ceramic walls, and installation of ceramic floor tiles	
Examination forms	Practice Results: 60%; Practice Report: 20%; Test/ Assignment: 10%; and Attendances: 10%	
Study and examination requirements	Final Score > 55 (C)	
Reading List	Masonry Work Practice, PEDC, Bandung	
	Masonry Work Practice, Jobsheet, PNJ, Jakarta	
	Allen, Edward (2005),"Fundamentals of Building Construction, Materials and Methods", Third Edition, Airlangga, Jakarta	

Module Designation	Citizenship	
Semester(s) in which the Module is Taught	2nd	
Person Responsible for the Module	Rita Farida , S.H., M.H.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture and Cash Study	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives:
	1	Students are able to explain about the introduction to citizenship education, national identity and national integration
	2	Students are able to explain about the Indonesian constitution
	3	Students are able to explain about the rights and obligations of the state and citizens
	4	Students are able to explain about the Indonesian democracy dynamics and law enforcement in Indonesia
	5	Students are able to explain about geopolitics, geostrategic, archipelago insight and national resilience
Content	Citizenship Education course provides students with a sense of nationalism and fosters nationalism.	
Examination Forms	Assignment & multiple choice questions.	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Presentation Assignments, Daily and Special Assignments: 30%	
Reading List	Budi Juliardi, 2014, Citizenship Education, Publisher; PT. Rajagrafindo Persada.	
	Heri Herdiawanto, Jumanta Hamdayama, 2010, *Cerdas Kritis dan Aktif Berwarganegara* (Intelligent Critical and Active Citizen), Erlangga publisher	
	Decree of Directorate General of Higher Education. Department of Education and Culture of the Republic of Indonesia Number 267/ Dikti / Kep. / 2000.	

	Decree of Director General of Higher Education, Department Education and Culture of the Republic of Indonesia Number: 38 / Dikti / Kep / 2002.
	Decree of Director General of Higher Education, Department Education and Culture of the Republic of Indonesia Number: 84/ E/ KPT /2020.
	Kaelan 2002, Citizenship Education, Paradigma Publisher, Yogyakarta
	Kaelan 2003. Pancasila Education. Paradigma Publisher. Yogyakarta.
	Miriam Budiardjo, 2008, Fundamentals of Political Science, Jakarta, Publisher.
	Minto Rahayu, 2007, Citizenship Education, Jakarta, Publisher: PT. Gramedia Widiasarana Indonesia.
	Rita Farida, 2011, Human Rights and Democracy in Indonesia, PNJ Publishing Institute.
	Supriatnoko, 2009, Citizenship, Jakarta, Accounting Department Publishing Agency of Jakarta State Polytechnic.
	Citizenship Lecturer Team, 2010, Citizenship Education, PNJ Publisher.
	Amendment to the 1945 Constitution.
	Law on Human Rights No. 39 of 1999.

Module Designation	Engineering Drawing 2	
Semester(s) in which the Module is Taught	2nd	
Person Responsible for the Module	Sukarman , S.Pd., M.Eng	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Best Project Team	
Workload (incl. Contact hours, self-study hours)	Face to Face: 3 x 50 = 150 minutes/ week	
	Structured Learning: 3 x 60 = 180 minutes/ week	
	Self-Study: 3 x 60 = 180 minutes/ week	
Credit Points	3 credits (sks) / 5,44 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Drawing 1	
Module Objectives/ Intended Learning Outcomes	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to identify draft/sketch drawings resulted from measurements to be prepared into computer-based shop drawings
	2	Students are able to make shop drawings which are part of detailed building construction using Autocad program independently
	3	Students are able to make initial settings/ setup for Autocad work screens for 3D modeling according to drafts/sketches
	LO5	To be able to draw buildings to support the processes of designing, Building construction implementation and supervision using digital technology.
	No	Module objectives:
	1	Students are able to make complete shop drawings of medium-scale and multi-storey building construction using Autocad and 3D BIM programs
	2	Students are able to save drawing data in a format appropriate to the shop drawing document."
Content	This course will provide students with ability to learn 3D BIM program according to the building construction requirements and to make complete shop drawings of medium-scale building construction from preparation, drawing to the storage of drawing document data.	
Examination Forms	Assignment & multiple choice questions.	
Study and	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	

Examination Requirements	
Reading List	Ching, Frank. 1992. Architectural Graphics. Erlangga Publisher.
Reading List	Weidhas, Ernest. R. 1989. Drafting and Construction. Allyn and Bacon USA.
	Engineering Drawing Handbook
	Nurwidyaningrum, Dyah. 2020. Engineering Drawing using Autocad. K-Media: Yogyakarta.
	Drawing using Autocad. Thabrani, Suryanto. 2005. Elex Media Komputindo.

Module Designation	Land Measurement Science 2	
Semester(s) in which the Module is Taught	2 (Two)	
Person Responsible for the Module	A'isyah Salimah, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods		
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Land Measurement Science 1	
Module Objectives/ Intended Learning Outcomes	LO6	To be able to do site survey for Buildings.
	No	Module objectives:
	1	Students are able to explain about the classification, parts, and reading angles of Theodolite tools, the types of polygons, tachometric measurement methods, vertical and horizontal curves, the basics for using Total Stations and EDM in field measurements.
	2	Students are able to analyze data resulted from polygon measurements.
	3	Students are able to analyze data resulted from situation measurement using tachometric method.
	4	Students are able to design horizontal and vertical curves.
	5	Students are able to explain how to calculate area using graphical, numerical and mechanical graphical methods.
Content	Students are able to explain about the use of theodolite tools as well as be able to use theodolite tools for measuring polygons, tachometry, stake outs (building points, horizontal curves, vertical curves), and planimeters in area measurements.	
Examination Forms	Essays	
Study and Examination Requirements	Attendance and Assignment 30% Midterm Exam 30% Final Exam 40%	
Reading List	Surveying for Construction, WH Irvine Mc; Mc Graw Hill	
	Land Measurement Science, Soetomo Wongsotjitro; Kanisius Foundation -Land Measurement 1.2, Yacob Rais; Prof. Ir, Msc; Cipta Sari	
	Surveying, Colo Kochher; Katson Publishing House	
	Land Surveying, Ramsay J.P Wilson: M & E Handbooks	
	Surveying, A Bannister & S Raymond; The English language Book Society and Pitman	

	Measurement and Mapping in Construction Work, Ir Indra Sinaga, Msurv.Sc., John Hi-Tech Idetama Foundation

Module Designation	Applied Mathematics	
Semester(s) in which the Module is Taught	2nd	
Person Responsible for the Module	Ega Edistria, S. Pd., M. Pd.	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Expository, *small group Discussion*, *Problem-based learning*	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain about the concept of real number system and determine the solution set on real number equation and inequality to solve problems related to the basics of building construction work
	2	Students are able to determine and describe a function to solve problems related to the fundamentals of building construction work.
	3	Students are able to determine the derivatives of a function to solve problems related to the fundamentals of building construction work
	4	Students are able to calculate the integral of a function to solve problems related to the fundamentals of building construction work
	5	Students are able to calculate matrix values to solve problems related to the basics of building construction work
Content	Applied Mathematics course is one of courses for bachelor students in the study program of Building Construction Engineering. This subject discusses the mathematical concepts required as a basis for solving problems related to the basics of building construction. Materials in this course includes Real Number System, Equations and Inequalities, Functions & Graphs, Limits, Derivatives, Integrals and Matrices	
Examination Forms	Essay, Multiple Choices, Short Essay	
Study and Examination Requirements	Mid Semester Test: 30%; Final Semester Test: 40%; Assignments and Attendances: 30%	
Reading List	Purccell, E.J & Varberg, D. Interpreted by the Department of Mathematics, Bandung Institute of Technology. 2004. Calculus Volume 1. Jakarta: Erlangga.	

	Ratnadewi, Dkk. 2016. Engineering Mathematics. Science Engineering. Bandung
	Noorbaity. 2000. Mathematics Dictate. State Polytechnic of Jakarta

Module Designation	Soil Mechanics 1	
Semester(s) in which the Module is Taught	2nd	
Person Responsible for the Module	Istiatun, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	1. Lecture, 2. Group Discussion 3. Collaborative learning 4. Structured learning 5. Case Study	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Mathematics, Physics	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain the definition of soil physical properties and mechanical properties.
	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Students are able to determine soil parameter values based on laboratory soil testing data
	2	Students are able to determine soil parameter values based on field soil testing data
	3	Students are able to calculate soil bearing capacity based on CBR value, soil density, and shear strength."
Content	In Soil Mechanics 1 course, students are able to identify data resulted from field and laboratory tests to determine the physical and mechanical properties of soil samples required in the design and implementation of building construction work.	
Examination Forms	Essays	
Study and Examination	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	

Requirements	
Reading List	Soil Mechanics 1 PEDC
	Soil Mechanics 1, Braja. M. Das
	Geotechnical, Bowles
	Soil Mechanics 1 Handout

Module Designation	Engineering Mechanics 2	
Semester(s) in which the Module is Taught	2 (Two)	
Person Responsible for the Module	Rinawati, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study, Discussion	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes / week	
	Structured Learning: 2 x 60 = 120 minutes / week	
	Self-Study: 2 x 60 = 120 minutes / week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 1	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to calculate the internal forces on inclined beams; on gerber beams; on certain static portals; on the three-joint portals; on three-hinged arches; normal stress and shear stress on a structure's cross-section; influence lines for statically determinate structures (simple beams, cantilever beams, overhanging beams, and gerber beams).
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to implement Hooke's law on a pole
Content	Engineering Mechanics 2 course will provide students with knowledge on internal forces on inclined beams, gerber beams, certain static portals; three-joint portals; three-hinged arches; influence lines for statically determinate structures (simple beams, cantilever beams, overhanging beams, and gerber beams), and normal tensile, compressive, and bending stresses as well as shear stresses in a simple structure element.	
Examination Forms	Essays	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
	Badihi, Handbook of Engineering Mechanics (Diktat Mektek) 1	

Reading List	RC. Hibbeler, Engineering Mechanic Static, 7nd edition
	RC. Hibbeler, Mechanic of Materials, 2nd edition
	Chu-Kia Wang. Statically Indeterminate Structure. Kogakusha : Mc. Graw Hill
	E.P. Popov. Engineering Mechanics (Translation)
	Badihi, Handbook for Material Strength Science Subject

Module Designation	Material Technology 2	
Semester(s) in which the Module is Taught	2 (Two)	
Person Responsible for the Module	Nunung Martina	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study Method, Group Discussion, Collaborative Learning	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits /3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Material Technology 1	
Module Objectives/ Intended Learning Outcomes	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Students are able to identify various types of mortars that meet building requirements and mortar quality according to the applicable standards; the criteria, physical and mechanical properties of normal concrete according to the quality classification based on applicable standards;
	LO8	To be able to make Building test reports and quality control.
	No	Module objectives:
	1	Students are able to design a normal concrete mixture for Building construction according to the applicable standards
	2	Students are able to identify the criteria and the manufacture and the use of lightweight concrete, heavy concrete, spray concrete, fiber concrete, high quality concrete, asphalt concrete in Building construction;
	3	Students are able to design a high quality concrete mixture for Building Construction according to the applicable standards
	4	Students are able to design an asphalt concrete mixture according to the applicable standards
Content	Material Technology 2 course will provide students with knowledge about mixed mortar, normal concrete technology, normal concrete mixture design, lightweight concrete, heavy concrete, fiber concrete, high-performance concrete, spray concrete, asphalt, and asphalt concrete in Civil building construction.	
Examination Forms	Essays	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assigments and attendances: 30%	

Reading List	C.N Material Technology 1 PEDC Bandung
	Rocks and Minerals, Grolier, PT Widyadara Jakarta
	Building Construction, SP Arora Dhanpat Rai & Sons, Delhi
	Indonesian Building Material Rules
	Properties of Concrete, AM Neville
	Concrete Technology, MS Shetty
	ASTM volume C 04-02

Module Designation	Material Testing 1	
Semester(s) in which the Module is Taught	2 (Two)	
Person Responsible for the Module	Drs. Muhtarom Riyadi, S.ST., M.Eng	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lectures, Lab Practices, Group discussions, Collaborative learning, Demonstrations, Case Studies	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisites for Joining the Module	Material Testing 1	
Module Objectives/ Intended Learning Outcomes	LO8	To be able to make Building test reports and quality control.
	No	Module objectives:
	1	Students are able to test cement for buildings according to SOP
	2	Students are able to test fine agregates for buildings according to SOP
	3	Students are able to test coarse agregates for buildings according to SOP
	4	Students are able to test mortar for buildings according to SOP
	5	Students are able to test timber/woods for buildings according to SOP
Content	Materials Testing 1 course will provide students with skills of cement testing, fine aggregate testing, coarse aggregate testing, building ceramics testing and timber/wood testing for building construction.	
Examination Forms	Essays	
Study and Examination Requirements	Discipline/ Attendance: 10%; Activity: 30%; Report: 30%; Presentation/ Examination: 30%	
Reading List	Achmad. D, Susilowati, A. (2018). Material Testing 2 Jobsheet. Study Program of D3 Building Construction, Department of Civil Engineering at State Polytechnic of Jakarta.	
	ASTM C33 / C33M – 13. Standard Specification for Concrete Aggregates.	
	ASTM C 150 92. Standard specification for Cement.	
	ASTM C39. Compressive Strength of Cylindrical Concrete Specimens.	
	Indonesian National Standard for Cement, SNI 15-2049-2004.	
	Concrete Technology, MS Shetty.	

	ASTM volume C 04-02.
	Indonesian National Standard for Fine Aggregate.
	Indonesian National Standard for Coarse Aggregate.
	British Standards Institution – BS 4408. 1974.
	Ir. Sadji. 2006. Package A, Material VI Concrete Material dan the Requirements. ITS, Surabaya.
	Jaya, J. 2006. Package A, Material VII Repairing Material. ITS, Surabaya.
	Neville, A.M. & Brooks, J.J. 1994. Concrete Technology. Longman Scientific & Technical, Burnt Mill, Harlow, Essex CM20 2JE, England.
	ASTM C617 – 11. Practice for Capping Cylindrical Concrete Specimens. American Society of Testing Material.
	LPHH, Forest Product Research Institution.
	SII-No. 022-81

Module Designation	Land Measurement 2	
Semester(s) in which the Module is Taught	2 (Two)	
Person Responsible for the Module	Handi Sudardja S.T. M.Eng.,	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lab practice works, case study methods	
Workload (incl. Contact hours, self-study hours)	Practice 2 x 170 = 340 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO6	To be able to do site survey for Buildings.
	No	Module objectives:
	1	Students are able to operate Theodolite and Total Station correctly according to the specified terms and conditions.
	2	Students are able to do polygon and site measurement in field, to stake out horizontal / vertical curves in field using Teodolite or Total Station tools.
	3	Students are able to calculate the coordinates of points measured in the field based on the directional angles and distance, area in the field directly and indirectly.
	4	Students are able to calculate an area using graphical, and numerical methods and using a planimeter
	LO8	To be able to make building test and quality control reports.
	No	Module objectives:
	1	Students are able to make polygon images, site maps, vertical and horizontal curves and field measurement analysis reports using Teodolite or Total Station tools
Content	Soil Measurement 2 course provides knowledge to students about polygon measurement, horizontal and vertical curves planning, and how to make site maps using tachometric method, how to stake out building, using theodolite tools.	
Examination Forms	Tool Demonstration Practice, Oral test	
Study and Examination Requirements	Activity 30%, attendance 10%, Report 30%, Evaluation 30%	
Reading List	Surveying for Construction, WH Irvine Mc; Mc Graw Hill	
	Land Measurement Science, Soetomo Wongsotjitro; Kanisius Foundation -Land Measurement 1.2, Yacob Rais; Prof. Ir, Msc; Cipta Sari	
	Surveying, Colo Kochher; Katson Publishing House	

	Land Surveying, Ramsay J.P Wilson: M & E Handbooks
	Surveying, A Bannister & S Raymond; The English language Book Society and Pitman
	Measurement and Mapping in Construction Work, Ir Indra Sinaga, Msurv.Sc., John Hi-Tech Idetama Foundation

Module Designation	Scaffolding and Mould Construction Work 1	
Semester(s) in which the module is taught	2nd	
Person Responsible for the Module	I Ketut Sucita, S.Pd., S.S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Wood Construction Work	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the meaning, scope and requirements of mould and scaffolding work, materials, tools and Occupational Safety and Health requirements in mould and scaffolding construction.
	2	Students are able to calculate the strength and cost for mould and Scaffolding construction works
	3	Students are able to apply the occupational safety and health system to mould and scaffolding works
	4	Students are able to make stake out board construction, column mould and scaffolding construction for conventional and semi-auto systems, beam mould and scaffolding construction for conventional systems, floor mould and scaffolding construction for conventional and semi-auto systems, stair mould and scaffolding construction with bordes out in Building Construction.
	5	Students are able to carry out the stages of mould and scaffolding recasting and tidying up in conventional and semi-auto systems
Content	Mould and Scaffolding Construction 1, carrying out conventional mould and scaffolding construction for stake out board, columns, beams, floors and stairs construction including planning the size and number of optrides and antride, dismantling and tidying up the dismantling yield	
Examination forms	Practice: 60%; Test/ Assignment: 10%; Report: 20%; Assignments and Attendances: 10%	
Study and examination requirements	Final Score > 55 (C)	

Reading List	JG. Richardson. F, " Formwork Construction Practice"
	F. Wigbout, Ing, 1992, Formwork Guidelines (Printing Box), Erlangga, Jakarta
	Regulation of Minister of Public Work and Public Housing (PUPR) 10/2021 concerning Guidelines for Construction Safety Management System (SMKK)
	Regulation of Minister of Public Work (PU) 28/2016, concerning the analysis of general work unit price
	Indonesian Timber Construction Regulations,
	Mould and Scaffolding Work Practice Instructions 1, Jakarta State Polytechnic, Jakarta
	SMTIK – PIKA., 1985, Guidelines for Making Shop Drawings, Kanisius Foundation, Semarang.

Module Designation	Drainage Construction Work	
Semester(s) in which the Module is Taught	2 (Two)	
Person Responsible for the Module	Andrias Rudi Hermawan, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, case study method	
Workload (incl. Contact hours, self-study hours)	Practice 2 x 170 = 340 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisites for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the meaning of Drainage, rainwater drainage, waste water drainage, Main Buildings and Drainage Supplementary Buildings
	2	Students are able to plan the drainage construction work
	3	Students are able to carry out Stake Out/Bowplank/Stake Out board, (Open) Channels, (Closed) Channel, Simple plastering, water-channel works and Drainage Building maintenance works.
	4	Students are able to recast the drainage work properly and correctly
Content	In Drainage practice, basic drainage theory and an introduction to materials and tools for making channels, both closed and open channels are provided. Then, students shall practice the installation of channels in field.	
Examination Forms	Essay, oral presentation	
Study and Examination Requirements	Practice: 60%; Practice Preparation Assignments: 10%; Test: 20%; Assignments and Attendances: 10%	
Reading List	Municipal Drainage, Ir.Haryono Sukarto, MSi. Department of Public Works, 1990	
	Sustainable Municipal Drainage System. Dr. Ir. Suripin, M.Eng, ANDI Jogjakarta, 2004.	

Module Designation	Religion	
Semester(s) in which the module is taught	3rd	
Person Responsible for the Module	Darul Nurjanah, S.Ag., M.Si	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lectures, Debriefing, Case Studies, Independent Study	
Workload	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Requirements According to the Examination Regulations		
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives:
	1	Able to Explain about Islam and Its Scope, The Concept of God, Ethics, Morals, Morals in Islam.
	2	Able to Explain about Human Essence, Islamic Law, Human Rights in Islam, democracy in Islam, and inter-religious harmony.
	3	Able to Explain the Definition of Science, Knowledge, Technology, and art in Islam.
	4	Able to Explain the Definition of Civil Society, Cultural Concepts, and Political Systems in Islam.
	5	Able to Explain the Definition of Economics in Islam, zakat, infaq, and alms.
Content	Islamic Religious Education course aims to provide students with knowledge about human relations with God (Hablumminallah), human relations with fellow human beings (Hablum Minannas), and human relations with the universe (Hablum minal alam).	
Examination Forms	Essays	
Study and Examination Requirements and	Midterm Exam: 30%; Final Exam: 40%; Assignment: 30%	

Forms of Examination	
Reading List	Al Quran and Translation, Issued by UII, Yogyakarta, 1999.
	Islamic Religious Education by Prof. H. Mohamad Daud Ali, SH
	Islamic Religious Education Textbook for Public Universities, Issued by the Ministry of Religious Affairs of the Republic of Indonesia, 2000.
	Islamic Fiqh by H. Sulaiman Rosyid, 1995.
	Index of Quran Verses by N.A. Baiquni et al. Published by Arloka, Surabaya
	Indonesian Arabic Dictionary by Dr. Abdul Halim Mintasir et al., Published by Bintang Terang, Surabaya
	Learning Process Reference Module (MPK).
	Islamic Religious Education, by UGM Yogyakarta PAI Lecturer Team
	Islamic Religious Education, By Islamic Religious Education (PAI) Lecturer Team of Jakarta State Polytechnic.

Module Designation	Construction Management 1	
Semester(s) in which the module is taught	3rd	
Person Responsible for the Module	RA Kartika Hapsari S	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Type of teaching, Contact Hours	Lectures, Debriefing, Case Studies, Independent Study	
Workload	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Requirements According to the Examination Regulations		
Module Objectives/ Intended Learning Outcomes	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives
	1	Students are able to explain the definition, reasons, and process of construction dispute resolution, arbitration, claims
	2	Students are able to calculate the price escalations
	3	Students are able to explain about construction management
	LO10	To be able to prepare contract documents and administrative requirements for the design, implementation and supervision of Building construction.
	No	Module objectives
	1	Students are able to explain about tenders and bid processes
	2	Students are able to explain about contract process
Content	Construction Management 1 course introduces the concepts of management, projects, construction management (MK, construction permits and regulations, contracts, types of contracts, claims, arbitrage and price escalation	
Examination Forms	Essays	
Study and Examination Requirements and Forms of Examination	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	

Reading List	Kadarman SJ: Introduction to Management Science, Gramedia, Jakarta 1992
	Rory Burke, Introduction to Project Management, 2007
	P. Nugraha et al: Construction Project Management I and II, Kartika Yudha, 1984
	Wulfram I Ervianto: Construction Project Management, Andi Publisher, 2005
	Handbook of Development Implementation in DKI Jakarta Yr. 2002
	Burges, Roger A & White, Gorgon: Building Production and Project Management, Andi Publisher, 1984
	Building Construction Cost Analysis (Modern Method), Sudradjat

Module Designation	Fluid Mechanics	
Semester(s) in which the Module is Taught	3 (Three)	
Person Responsible for the Module	Nuzul Barkah Prihutomo, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Discussion, Case Study	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisites for Joining the Module	Applied Physics	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain about the basic properties of fluids, the basic concepts of Fluid Mechanics, tools used in Fluid Mechanics lab practices
	2	Students are able to calculate the force working due to water pressure, buoyancy, pressure level and water installation in a Building
	LO8	To be able to make building test and quality control reports.
	No	Module objectives:
	1	Students are able to measure flow rate and pressure level,
	2	Students are able to calculate the reduced flow rate and pressure loss in the fluid flow through a sharpened orifice,
	3	Students are able to calculate the Venturimeter coefficient, the pressure loss in a straight pipe due to friction that occurs in the pipe, the pipe roughness value based on Darcy (ks), Strickler roughness value (Kst) of various types of pipes, pressure loss due to bends, the flow rate, the of venturimeter and orificemeter measuring instruments that installed to the pipe, the specific gravity values of various fluids,
Content	Fluid Mechanics course consists of theoretical and laboratory courses. Fluid Mechanics Theory subject consists of two main topics of discussion, namely hydrostatics and hydrodynamics. Hydrostatics material covers the calculation of hydrostatic forces in a plane, while hydrodynamics material discusses pipe flows which includes the flow properties and their calculations. Fluid Mechanics Laboratory subject contains laboratory practices related to several theories, namely Center of pressure, Venturimeter, Orificemeter, and Pressure loss in pipe flow.	

Examination Forms	Multiple Choices and Essay
Study and Examination Requirements	Final report: 20%; Activity and discipline (attitude), self-assessment and peer-assessment: 10%; Skills: 10%; Assignment Completion and presentation (knowledge and attitude): 60%
Reading List	Elementary Fluid Mechanics, John. K. Vennard, 1961, John Wiley & Sons
	Fluid Mechanics, Frank M. White, 1986, Mc Graw-Hill
	Open Channel Hydraulics, Ven Te Chow, 1992, Erlangga Publisher
	Flows in Open Channels, Rangsa Raju K.G., 1986, Erlangga Jakarta
	Hydraulics II, Bambang Triatmojo, 1993, Bata Offset, Yogyakarta

Module Designation	Soil Mechanics 2	
Semester(s) in which the Module is Taught	3rd	
Person Responsible for the Module	Yelvi, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	1. Lecture, 2. Group Discussion 3. Collaborative learning 4. Structured learning 5. Case Study	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks)	
Required and Recommended Prerequisites for Joining the Module	Engineering Mechanics 1, Soil Mechanics 1	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives
	1	Students are able to calculate the coefficient of permeability and seepage velocity, stress distribution in soil, consolidation and settlement, lateral earth pressure, and to overcome slope slides
	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives
	1	Students are able to explain the definition of permeability, stress distribution in soil, consolidation settlement, lateral earth pressure, slope stability, and soil problems
	2	Students are able to analyze soil problems in Building construction techniques and how to overcome them
Content	Soil Mechanics 2 course provides students with knowledge about permeability-related soil problems, stress distribution in soil, consolidation settlement, lateral earth pressure, slope stability, and soil problems.	
Examination Forms	Essays	

Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%
Reading List	Soil Mechanics 2 PEDC
	Soil Mechanics 1 & 2, Braja.M.Das
	Geotechnical, Bowles
	Soil Mechanics 2 Handout

Module Designation	Engineering Mechanics 3	
Semester(s) in which the Module is Taught	3 (Three)	
Person Responsible for the Module	Amalia, S.Pd., S.S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study, Discussion	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes / week	
	Structured Learning: 2 x 60 = 120 minutes / week	
	Self-Study: 2 x 60 = 120 minutes / week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 2	
Module Objectives/ Intended Learning Outcomes	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to calculate the magnitude of truss forces on truss frames for building structures; angular rotation and deflection on certain beams and static portals of buildings; torque, shear modulus, angle of twist; stress due to twisting and torsional moments; and bending on columns and beams.
	2	Students are able to draw the influence lines for trusses for building structures.
Content	Engineering Mechanics 3 course will provide students with knowledge about truss construction, angular rotation and deflection, twisting and torsional moments, stresses due to torques and normal forces, bending on columns or beams.	
Examination Forms	Essays	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Soemono, Statics-1, ITB, Bandung	
	Soemono, Statics-2, ITB, Bandung	
	PEDC, Statics and Material Strength Course Note, Bandung	
	Chu-Kia Wang, Statically Indeterminate Structure, Yustadi book Series	

Module Designation	Material Testing 2	
Semester(s) in which the Module is Taught	3 (Three)	
Person Responsible for the Module	Pratikto, S.T., M.Si.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lectures, Lab Practices, Group discussions, Collaborative learning, Demonstrations, Case Studies	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Material Technology 1, Material Technology 2, Material Testing 1	
Module Objectives/ Intended Learning Outcomes	LO8	To be able to make building test and quality control reports.
	No	Module objectives:
	1	Students are able to design normal concrete mixtures and high quality concrete according to the applicable standards
	2	Students are able to mix and test the normal-fresh and high-performance concrete for building construction according to SOP
	3	Students are able to carry out test on hardened concrete according to SOP
	4	Students are able to test the crack depth of cracked concrete for building construction according to SOP
	5	Students are able to test the core drill for building construction according to SOP
Content	Material Testing 2 course includes activities specifically determined for students to conduct lab trials in order to train students' abilities in doing research. Topics studied include designing normal concrete mix design, mixing and testing fresh concrete, designing high performance concrete mixture, mixing and testing high performance fresh concrete, testing hardened concrete, testing the crack depth and the cracked concrete using Pundit Tool, as well as testing core drill sample	
Examination Forms	Essays	
Study and Examination Requirements	Attendance: 10 %; Activity and discipline (attitude): 30 %; Final Exam / presentation (knowledge, skills and attitude) : 30 %; Report (knowledge and attitude): 30 %	
Reading List	Achmad, Djedjen; Pratikto (2018). Jobsheet of Material Testing 2 Study Program of Building Construction Engineering, Department of Civil Engineering PNJ, 2018	
	Indonesian National Standard, Normal Concrete Mix Design	

	Indonesian National Standard, High Performance Concrete Mix Design
	British Standards Institution – BS 4408, 1974, Recommendations for Non - destructive methods of test for concrete, Part 5. Measurement of the velocity of ultrasonic pulses in concrete;
	Januartijaya, E., 2006, Paket A, Materi VI Non Destructive Test and Assessment, Course for the Application of the Latest Concrete Calculation Procedures in Indonesia, ITS, Surabaya.
	Ir. Sadji., 2006, Package A, Material VI Concrete Material dan the Requirements, ITS Surabaya
	Neville, A.M. & Brooks, J.J., 1994 ,"Concrete Technology," Longman Scientific & Technical, Burnt Mill, Harlow, Essex CM20 2JE, England.
	ASTM C617 - 11, Practice for Capping Cylindrical Concrete Specimens, American Society of Testing Material
	SNI 03-6898-2002, Procedures for Sampling and Testing of Core Drill Compressive Strength, Department of Regional Settlement and Infrastructure, Research and Development Agency, Jakarta.
	SNI 03-1974-1990, Method for Testing Core Drill Compressive Strength, Department of Regional Settlement and Infrastructure, Research and Development Agency, Jakarta.

Module Designation	Soil Testing	
Semester(s) in which the Module is Taught	3rd	
Person Responsible for the Module	Handi Sudardja, S.T., M.Eng	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	6. Lecture, 7. Demonstration, 8. Lab Practice, 9. Case Study	
Workload (incl. Contact hours, self-study hours)	Practice: 2 x 170 = 340 minutes/week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 1, Soil Mechanics 2	
Module Objectives/ Intended Learning Outcomes	LO8	To be able to make building test and quality control reports.
	No	Module objectives:
	1	Students are able to carry out manual drilling, sampling and sample storage, sondir testing, DCP testing, sandcone testing, moisture content testing, density testing, specific gravity testing, liquid limit testing, plastic limit testing, sieve analysis testing, hydrometer analysis testing, standard compaction testing, CBR laboratory testing, free compressive strength testing, direct shear testing, and triaxial testing.
	2	Students are able to analysis the results of manual drilling testing, sondir testing, DCP testing, sandcone testing, moisture content testing, density testing, specific gravity testing, liquid limit testing, plastic limit testing, sieve analysis testing, hydrometer analysis testing, standard compaction testing, CBR laboratory testing, free compressive strength testing, direct shear testing, and triaxial testing.
	3	Students are able to make reports on manual drilling testing, sondir testing, DCP testing, sandcone testing, moisture content testing, density testing, specific gravity testing, liquid limit testing, plastic limit testing, sieve analysis testing, hydrometer analysis testing, standard compaction testing, CBR laboratory testing, free compressive strength testing, direct shear testing, and triaxial testing.
Content	Students are able to carry out soil testing in field and in laboratory based on ASTM/AASHTO standards and able to analyze the test data to obtain the required soil data for the design, implementation and supervision of building and facilities/infrastructure construction work .	
Examination Forms	Essays	

Study and Examination Requirements	Attendance: 10%; Practice Activity: 30 %; Report: 30 %; and Presentation & Evaluation: 30 %
Reading List	Sri Respati, Handi Sudardja, Module and Worksheet of "Soil Test Practice".
	Annual Book of ASTM Standard
	AASHTO Standards and Guidelines
	L.D Wesley, 1977, Soil Mechanics, Public Works Publishing Agency, Jakarta.
	Joseph E Bowles, 1984, Engineering Properties and their Measurements, Mc. Graww Hill Book Company, New York.
	Shirley L Hendarsin, 2004, Geotechnical Engineering Investigation, Bandung State Polytechnic, Bandung.

Module Designation	Quantity Survey	
Semester(s) in which the Module is Taught	3 (three)	
Person Responsible for the Module	Safri, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lectures, Debriefing, Cooperative Learning, Case Studies, Practice directly on computers	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits (SKS) / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Applied Mathematics	
Module Objectives/ Intended Learning Outcomes	LO7	To be able to make cost estimates with reference to technical drawings, technical specifications, able to arrange work implementation schedules.
	No	Module Objective
	1	Students are able to make WBS (Work Breakdown Structure) from DED drawings
	2	Students are able to calculate the quantity of preparation work, Construction OSH, earthwork, structural work, architectural work and MEP work.
	LO10	To be able to prepare contract documents and administrative requirements for the design, implementation and supervision of Building construction.
	No	Module Objective
	1	Students are able to make BoQ (Bill of Quantity)

Content	Quantity Survey course explains the method for making Budget Plan (RAB) which consists of preparation work, Construction OSH, earthwork, structural work, architectural work and MEP work
Examination Forms	Essays
Study and Examination Requirements	10%; Activity and discipline 20%; Assignment Completion (knowledge and skills) 30%; Midterm Exam 40%; Final Exam
Reading List	Quantity Survey Handout

Module Designation	Plumbing and Piping Construction Work	
Semester(s) in which the module is taught	3rd	
Person Responsible for the Module	Putera Agung Maha Agung	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Drainage Construction Work	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students explain about the introduction to plumbing / piping, plumbing and piping tools
	2	Students are able to draw plumbing and piping systems
	3	Students are able to make galvanized steel pipe threads, clean water piping networks, and dirty water piping networks
Content	Materials on plumbing and piping work course include the plumbing system in a building or a housing complex, which is related to the supply of drinking water, the supply of hot water and the sewerage piping. Manufacturing process of steel pipe threads and connection systems, sanitation for buildings and making sanitation drawings and systems.	
Examination forms	Practice: 70 %; Report: 20 %; and Attendances: 10 %	
Study and examination requirements	Final Score > 55 (C)	
Reading List	Babbit, H.E., Plumbing, Mc.Graw-Hill	
	DPU., 1979, Indonesian Plumbing Guidelines.	
	Wright, F.B., Rural Water Supply and Sanitation, New Dehli.	

Module Designation	Mould and Scaffolding Construction Work 2	
Semester(s) in which the module is taught	3rd	
Person Responsible for the Module	Suripto, S.T., M.Si.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Mould and Scaffolding Construction Work 1	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain about full formwork system methods and the tools, as well as Occupational Health and Safety requirements in building construction
	2	Students are able to calculate the strength and cost/rent for mould and scaffolding construction works
	3	Students are able to apply the occupational safety and health system to mould and scaffolding works
	4	Students are able to make full system mould and scaffolding construction, full system beam mould and scaffolding construction, full system floor mould and scaffolding construction, stairs standard and ¼ circle scaffolding construction,
	5	Students are able to carry out the stages of mould and scaffolding recasting and tidying up
Content	This course discusses about planning and implementing concrete mould and scaffolding (formwork) construction using the full system method which includes formwork for columns, beams, floors, walls and stairs as well as carrying out the recast and tidying up the demolition results.	
Examination forms	Practice: 60 %; Report: 20 %; Test/ Assignment: 10% and Attendances: 10 %	
Study and examination requirements	Final Score > 55 (C)	
Reading List	JG. Richardson. F, "Formwork Construction Practice"	
	F. Wigbout, Ing, 1992, Formwork Guidelines (Printing Box), Erlangga, Jakarta	
	Regulation of Minister of Public Work and Public Housing (PUPR) 10/2021 concerning Guidelines for Construction Safety Management System (SMKK)	
	Regulation of Minister of Public Work (PU) 28/2016, concerning the analysis of	

	general work unit price
	Indonesian Timber Construction Regulations,
	Mould and scaffolding Work Practice Instructions 1, Jakarta State Polytechnic, Jakarta
	SMTIK – Pika., Guidelines for Making Shop Drawings, Kanisius Foundation, Semarang

Module Designation	Cost Estimation	
Semester(s) in which the Module is Taught	4th	
Person Responsible for the Module	Safri, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lectures, Debriefing, Cooperative Learning, Case Studies, Practice directly on computers	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Applied Mathematics, Quantity Survey	
Module Objectives/ Intended Learning Outcomes	LO7	To be able to make cost estimates with reference to technical drawings, technical specifications, able to arrange work implementation schedules.
	No	Module Objective
	1	Students are able to analyze the unit price of preparation work, Construction OSH, earthwork, structural work, architectural work and MEP work.
	LO10	To be able to prepare contract documents and administrative requirements for the design, implementation and supervision of Building construction.
	No	Module Objective

	1	Students are able to make Budget Plan (RAB)
Content	Cost Estimation course is intended to make students able to determine work & work units and calculate the quantity of work, calculate the estimated construction costs, as a basis for analyzing the feasibility of a project and a bid quotation. Material in this course covers the understanding of project cost estimation, project cost analysis, work unit price analysis, cost budget plans, implementation budget plans, cost analysis calculation methods, especially in multi-storey building construction projects.	
Examination Forms	Essays	
Study and Examination Requirements	10%; Activity and discipline: 20% = Assignment Completion (knowledge and skills) 30%; Midterm Exam 40%; Final Exam	
Reading List	Aggarwal. CS., Civil Estimating Costing and Valuation, Katson Publishing Hause Ludhiana, 1980.	
	Bahtiar Ibrahim.H, Plan and Estimate Real of Cost, Bumi Akasara, Jakarta 1994	
	Ivor.H. Seeley, Building Quantities Explained, Third Edition, Southeast Asian Reprint, Hongkong, 1981.	
	Mukomoko, JA, Fundamentals of Building Cost Budgeting, Gaya Media Pratama, Jakarta, 1985	
	Spence Gedd , Estimating for Building and Engineering Works, Butterworth, London,1985	
	Rochmanhadi, Calculation of Work Implementation Cost Using Tools, PU Publisher Foundation, Jakarta 1983	
	Soegeng Djojowirono, Construction Management II, Association of engineering students, Faculty of Engineering. UGM, Yogyakarta ,1984	
	Soedradjat, S, Implementation Budget Analysis using Modern Methods, Nova Bandung, 1984	
	Spence Gedd , Estimating for Building and Engineering Works, Butterworth, London,1985	
	SNI 2008 concerning Work Unit Price Analysis	

	Decree of Ministry of Public Work and Public Housing no. 28 of 2016 concerning Guidelines for AHSP Preparation.
	Building Cost Planning, Allan Asworth

Module Designation	KBG 1	
Semester(s) in which the module is taught	4	
Person responsible for the module	*Drs.Agus Murdiyoto R,S.T., M.Si*	
Language	Indonesian Language	
Relation to curriculum	Engineering Drawing 1, Engineering Drawing 1	
Teaching method	Lecture, Case Study, Group Discussion	
Workload (incl. contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Module Objectives/ Intended Learning Outcomes	LO3	To be able to choose the method for solving building implementation problems by taking into account health, public safety, environment (CSMS) aspects, as well as legal and economic aspects
	No	Module objectives:
	1	Able to determine the type of building foundation according to the building loads and soil conditions, wall structural materials to be used in buildings, materials for window and door frames, floors and floor covering materials according to building functions, roof construction according to the shape of building layout
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Able to map room layout in buildings and building utilities consisting of: clean water installations, used water installations and waste water installations, rainwater installations in buildings
	2	Able to distinguish construction defects and failures in buildings, preventatively and curatively overcome the construction defects and failures in buildings
Content	This course discusses about building construction 1, which is related to Bachelor study program D4 of Building Construction Engineering.	
Examination forms	Midterm Exam weight: 30%, Final Exam weight: 40%, Daily Assignment and Major Assignment weight : 30%	

Study and examination requirements	Final Score > 55
Reading List	Introduction to Foundation Engineering (Ir. Rudi Gunawan) 1992
	Foundation Engineering I (Ir. Hary CH) 2006
	Building Construction Science 1 & 2 (Ir. Heinz Frick) 1992
	Building Construction (Dr. Ir. Zulkifli) 2012
	Non-Storied Building Construction (Ir. Ing. Beny P) 2014.
	Law No: 28 of 2002 concerning Buildings
	Space Dimension Certification for Residential Houses (PU) 1989
	SNI concerning 2015 Indonesian Plumbing Guidelines (PU)
	Plumbing System Design and Maintenance (Sofyan and Morimura) 2004

Module Designation	Construction Management 2	
Semester(s) in which the Module is Taught	4th	
Person Responsible for the Module	RA Kartika Hapsari S, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Construction Management 1, Mathematics, Engineering Drawings, Quantity Survey	
Teaching Methods	Lecture	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (SKS) (3.63 ECTS)	
Required and Recommended Prerequisiters for Joining the Module	(1) Students with attendance below 80% without valid reason for absence (2) Students with attendance below 65% even with valid reason for absence	
	Assessment methods: Assessment methods: (1) Mid Exam, (2) Final Exam; (3) Assignment and Attendance	
Module Objectives/ Intended Learning Outcomes	LO3	To be able to choose the method for solving building implementation problems by taking into account health, public safety, environment (CSMS) aspects, as well as legal and economic aspects
	No	Module Objective
	1	Students are able to explain about Construction project planning and scheduling
	2	Students are able to develop Project Scheduling Methods
	LO9	To be able to carry out and supervise the building construction process.
	No	Module Objective
	1	Students are able to control projects using Project Scheduling methods.
Content	Construction Management 2 course explains the principles of construction project planning and scheduling	
Examination Forms	Mid Exam: written Final Exam: written	
Study and Examination Requirements	Mid Semester Test: 30%; Final Semester Test: 40%; Presentation Assignments, Daily and Special Assignments: 30%	
Reading List	Barrie, Donald S and Paulson, Professional Construction Management, McGraw–Hill, Inc, New York, 1984.	
	Dale D. McConkey, Management for Non-Company Organizations, PT. Pustaka Binaman Pressindo, Jakarta, 1982.	

	Hinze, Jimmie W., Construction Planning and Scheduling, Pearson, 2011
	Imam Soeharto, Project Management: From Conceptual to Operational, Erlangga Publisher, Jakarta, 1996.
	M. Munandar, Project Management Handbook, Universitas Terbuka, Jakarta, 1996.
	Mawdesley M J, Askew W and O'Reilly O, Planning and Controlling Construction Projects, edition 1, Longman, London, 1996
	Writing Team of PTS Lecturers, Construction Management Science for Higher Education, Publishing Agency of University of Tarumanegara, Jakarta, 1998.

Module Designation	PTM and Heavy Equipment	
Semester(s) in which the Module is Taught	4th	
Person Responsible for the Module	Dr. Afrizal Nursin, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, case study method	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the definition of heavy equipment, equipment management, the importance of maintenance and operating costs, the functions and uses of tractors, bulldozers, Motor Graders, compactors and the types of excavators.
	2	Students are able to calculate **Ownership Costs**, **Operating** costs, Depreciation Costs, Investment Costs, Wear Costs, Fuel Costs, Lubricant Material Costs, Filter Costs, Tire Costs, Maintenance and Repair Costs and Operator Costs
	3	Students are able to explain the **Technical Principles** of Rolling Resistance, Grade Resistance, Total Resistance, Rimpull, Drawbarpull, Tensile Strength on Equipment, Traction Coefficient, and Height Effects and **material characteristics**
	4	Students are able to explain about the manufacture of heavy equipment and soil mechanization tools, able to determine the implementation time, the implementation and management costs of **heavy equipment and soil mechanization tools.**
	5	Students are Able to Explain the Cycles, Analyze time and motion, Determine samples, Make conclusions, Use the results of operation analysis.
Content	Heavy Equipment and Mechanical Ground Removal (PTM) includes efforts to determine units for each activity, to know, to understand, and comprehend and	

	master the technical basics of those equipment, to determine ownership and operating costs, to manage maintenance and to analyze the equipment operations in accordance with applicable equipment operating standards. To determine the relationship between the equipment to be used and to determine the identity of each equipment. Calculating production is adjusted to the type of equipment required in a building construction project or used in the project.
Examination Forms	Essays
Study and Examination Requirements	Mid Exam: 30%; Final Exam: 40%; Presentation Assignment, Daily and Special Assignments: 20%; and Attendances: 10%
Reading List	Afrizal Nursin, 1995, Heavy Equipment, PEDC, Bandung.
	ASTM Standards Soil Compaction (1992), American Society for Testing and Material, Philadelphia, PA
	Caterpillar Performance Handbook, Caterpillar Inc., Peoria, III (published annually) Machine data can also be found at: www.cat.com/eda/layout?m=37840&x=7
	Caterpillar Performance Handbook, Caterpillar Inc., Peoria, III (published annually)
	Construction and Controlling Compaction of Earth Fills, 2000, ASTM Special Technical Publication, 1384, D.W. Shanklin Ed. ASTM, Philadephia, April
	Guide to Earthwork Construction,1990, State of the Art Report 8, TRB, National Research Council, Washington, DC
	Handbook of Ripping, 7th. Ed. (January 1983), Caterpillar Tractor Co., Peoria,III.
	Land Clearing, Caterpillar Tractor Co., Peoria,III.
	Peurifoy, Schexnayder, Shapira, 2006, Construction Planning, Equipment, and Methods, Seventh Edition, McGraw-Hill, International Edition, New York.
	Peurifoy, RL., 1979, Construction Planning, Equipment, and Methods, Seventh Edition, McGraw-Hill, International Edition, New York.

Module Designation	Steel Construction 1	
Semester(s) in which the module is taught	4	
Person responsible for the module	Erlina Yanuarini S.T., M.T., M.Sc	
Language	Indonesian Language	
Relation to curriculum	Engineering Mechanics 1, 2 and 3	
Teaching method	Lectures, Case Studies, Self Learning	
Workload (incl. contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Module Objectives/ Intended Learning Outcomes	L02	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain the steel properties and qualities and identify the types of steel profile, the steel structure design concepts using LRFD method,
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to calculate pure bending of rods and its application to surrounding structures, the axial tensile strength, the compressive axial forces, the bolted connection strength,
	2	Students are able to design steel roof frame and to design shop drawings manually or using BIM (Building Information Modeling)
Content	Steel Structure 1 course provides students with knowledge on steel structure design for roof trusses including the quality, properties and types of steel profiles, the concept of steel structure designing using Load Resistant Factor Design (LRFD) method, calculation of rod pure bending strength, axial tensile strength, axial tensile strength, the compressive axial forces, the bolted connection strength and can include designing shop drawings.	
Examination forms	Mid Exam 30%, Final Exam 40%, Assignment 30%	

Study and examination requirements	Final Score > 55
Reading List	SNI: 1729-2020 Specification for structural steel building
	SNI:1727-2020 Minimum loads for building and other structures
	ANSI/AISC 360-16, Specification for Structural Steel Buildings
	STEEL STRUCTURE, Behavior, Analysis & Design – AISC 2010 (Wiryanto Dewobroto)

Module Designation	Concrete Structure 1	
Semester(s) in which the Module is Taught	4th	
Person Responsible for the Module	Amalia, S.Pd.,SST.,MT.	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Seminar, *Problem -based learning*	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Able to check the strength of single and double reinforced beams according to the applicable standards
	2	Able to make shear designs on beams and make detailed reinforcement drawings according to the applicable standards
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Able to design single and double reinforced beams and make detailed reinforcement drawings according to the applicable standards
	2	Able to design one-way and two-way slabs and make detailed drawings according to the applicable reinforcement standard
	3	Able to make engineering design reports for reinforced concrete

		slab and beam elements in building structures
Content	Concrete structure 1 course supports the competence of Bachelor program students in designing the elements of concrete structure in buildings. Concrete structure subject 1 discusses about bending and shears design in reinforced concrete beams and slabs. The materials discussed in concrete structure 1 consists of: Basic principles for designing reinforced concrete structure, material properties of reinforced concrete and steel, analysis and design of single reinforced beams, analysis and design of multiple reinforced beams, winged beams, shear design of beams, one-way slabs, and two-way slabs.	
Examination Forms	Essay on cases about design and inspection of reinforced concrete beams and slabs	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	SNI 2847-2013 concerning Structural Concrete Requirements for Buildings	
	SNI 1727-2013 concerning Minimum loads for building and other structures.	

Module Designation	Foundation Engineering 1	
Semester(s) in which the Module is Taught	4th	
Person Responsible for the Module	Andikanoza Pradiptiya, S.T., M.Eng.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	10. Lecture, 11. Group Discussion 12. Collaborative learning 13. Structured learning 14. Case Study	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Learning: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 1, Soil Mechanics 2	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to calculate the bearing capacity of shallow foundations using empirical methods (using Terzaghi, Meyerhoff, Brinch Hansen, and Vesic equations) and based on the results of SPT and sondir tests
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to explain the definitions, functions, types of shallow foundations (especially those related to building construction) and retaining walls
	2	Students are able to plan shallow foundations and retaining walls and to control their stability
Content	Foundation Engineering 1 course will provide students with theoretical knowledge and applications of foundation design for building construction according to designing standards established by SNI-PUPR	
Examination Forms	Essays	

Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%
Reading List	Das, B (2011). Principles of Foundation Engineering, Thompson, Canada.
	Joseph E Bowles, 1992, “Foundation Design”, Volume 1 Fourth edition, Erlangga Jakarta.
	Joseph E Bowles, 1992, “Foundation Design”, Volume 2 Fourth edition, Erlangga Jakarta.
	PEDC, “Foundation I”, Bandung
	PEDC, “Foundation II”, Bandung
	Suryono Sosrodaryono Ir, Kazuto Nakazawa., "Soil Mechanics and Foundation Engineering", Pradnya Paramita Jakarta.
	Zaenal Nur Arifin, Dipl Ing and Ir. Sri Respati N, 1995, "Foundation", Bandung Polytechnic Development Center.

Module Designation	Report Writing in English	
Semester(s) in which the Module is Taught	4rd	
Person Responsible for the Module	Dra., Siti Aisiyah, M. Hum	
Language	English	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Seminar	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives:
	1	Students are able to describe and apply various types of sentences in English.
	2	Students are able to describe and apply various types of paragraphs in English.
	3	Students are able to explain and apply the Report systematics in English.
	4	Students are able to explain and apply report writing process in English.
	5	Students are able to explain and apply presentation-based oral communication.
Content	This course provides students ability to write and communicate scientifically, especially in writing reports in English in the field of building construction which includes knowledge about the types of sentences and paragraphs, how to write paragraphs, the systematics in writing reports in English, and oral presentations	
Examination Forms	Essay, Multiple Choices, Short Essay	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Kesselman, Judi, Secrets to Writing Great Papers, The University of Wisconsin Press, Wisconsin, 2003.	
	Zemach, Dorothy E, Paragraph Writing, Macmillan Publishers Limited, 2005.	

	Rozakis, Laurie, Writing Great Research Papers, 2th ed., Mc Graw Hill Book Company, NY, 2007.
	Maggio, Rosalie, How to Say It, Prentice Hall Pearson Education Inc., New York, 2001.
	Powel, Mark, Presenting in English, 2002

Module Designation	Steel Construction Work	
Semester(s) in which the module is taught	4th	
Person Responsible for the Module	Mursid, S.T., M.Eng.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Steel Construction Work	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the definition and scope of steel practices, steel materials and steel tools and profiles.
	2	Students are able to use manual tools in steel construction work
	3	Students are able to carry out the works of electric welding, gas (oxy-acetylene) welding, steel construction form / Shop Drawing, components of steel construction, steel construction works.
Content	This course will discuss Steel Work Applications, Steel Working Materials and Tools, Electric Welding, Gas Welding, Shop Drawing, Making of Steel Frame Construction Form, Steel Connection, Steel Frame Construction.	
Examination forms	Practice: 60 %; Report: 20 %; Test/ Assignment: 10% and Attendances: 10 %	
Study and examination requirements	Final Score > 55 (C)	
Reading List	Concrete Work Practice, PEDC, Bandung	
	Concrete Work Practice, Jobsheet, PNJ, Jakarta	

Module Designation	Steel Construction Work	
Semester(s) in which the module is taught	4th	
Person Responsible for the Module	Yanuar Setiawan, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Mould and Scaffolding Construction Work 2	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account the public health, safety and environment (CSMS) aspects, as well as legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the definition and scope of concrete, concrete materials and tools and reinforcement work practices
	2	Students are able to make beam strirrups, beam reinforcement, column strirrups, column reinforcement, footing reinforcement, floor plate reinforcement, deck slab reinforcement and casting
Content	This course will discuss how to make Beam and Columns Stirrups, Beams and Columns Reinforcement, Footing Reinforcement, Floor reinforcement, Deck Slab reinforcement and Casting.	
Examination forms	Practice: 60%; Report: 20%; Test/Assignment: 10% and Attendances: 10%	
Study and examination requirements	Final Score > 55 (C)	
Reading List	Concrete Work Practice, PEDC, Bandung	
	Concrete Work Practice, Jobsheet, PNJ, Jakarta	
	Allen, Edward (2005), "Principles of Building Construction, Materials and Methods", Third Edition, Erlangga, Jakarta	

Module Designation	Computer Applications	
Semester(s) in which the Module is Taught	5 (five)	
Person Responsible for the Module	Asyraf Wajih, S.Si., M.Si.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Seminar, Lab practices, Project-based learning	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Applied Mathematics, Quantity Survey	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module Objective
	1	Students are able to explain about the history of industrial revolution and the keys of industrial revolution 4.0, especially in building construction engineering, explain about the types of programming languages
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module Objective
	1	Students are able to use programming logic, write simple programs in Python in term of building construction engineering, use HTML programming language, use CSS programming language, write simple web-based programs in HTML and CSS in term of building construction engineering
Content	Computer Application course given at the beginning of lecture explains the history of industrial revolution and the keys of industrial revolution 4.0; then, it discusses the types of programming languages; Programming Logic; writing simple programs in	

	Python; HTML programming language; css; and writing simple web-based programs in HTML and CSS in term of building construction engineering.
Examination Forms	Essays
Study and Examination Requirements	10%; Activity and discipline: 20% = Assignment Completion (knowledge and skills) 30%; Midterm Exam 40%; Final Exam
Reading List	Chomistriana, D.. Industrial Challenges in the Industrial Age 4.0. Ministry of Public Work and Public Housing, 2019.
	Duckett, J. Beginning HTML, XHTML, CSS, and JavaScript. Wiley Publishing, 2010.
	Gaddis, T. Starting Out with Python, 5th Ed., Pearson, 2021
	Gordon, S. I. and Guilfoos, B. Introduction to Modeling and Simulation with MATLAB® and Python. CRC Press, 2017.

Module Designation	KBG 2	
Semester(s) in which the module is taught	5	
Person responsible for the module	*Drs.Agus Murdiyoto R,S.T., M.Si*	
Language	Indonesian Language	
Relation to curriculum	Engineering Drawing 1, Engineering Drawing 2, KGBI 1	
Teaching method	Lecture, Case Study, Group Discussion	
Workload (incl. contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Module Objectives/ Intended Learning Outcomes	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Able to determine the type of foundation for high-rise buildings according to building loads and soil conditions, the type of foundation suitable for high-rise buildings, types of fire extinguishers in high-rise buildings, types of clean water distribution systems in high-rise buildings, types of building maintenance and repairs in high-rise buildings, types of equipment and regulations for building maintenance and repairs applied in high-rise buildings

	2	Able to identify the making of columns, beams as planned, the installation of pre-cast walls for high-rise buildings, the making of concrete floor plates for high-rise buildings, the making of roofs for high-rise buildings, vertical transportation equipment to be used in high-rise buildings, electricity requirements in high-rise buildings, fire extinguisher requirements in high-rise buildings, clean water distribution systems requirements in high-rise buildings, sewage and used water systems for high-rise buildings, equipment and regulations for building maintenance and repairs used in high-rise buildings, implementation of building maintenance and repairs in high-rise buildings
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Able to analyze sewage and used water system in high-rise buildings, building maintenance and repairs in high-rise buildings
Content	This course discusses about building construction 2, which is related to Bachelor study program of Building Construction Engineering.	
Examination forms	Midterm Exam 30%, Final Exam 40%, Daily Assignments and Major Assignments 30%	
Study and examination requirements	Final Score > 55	
Reading List	Introduction to Foundation Engineering (Ir. Rudi Gunawan) 1992	
	Foundation Engineering I (Ir. Hary CH) 2006	
	Building Construction Science 1 & 2 (Ir. Heinz Frick) 1992	
	Building Construction (Dr. Ir. Zulkifli) 2012	
	Multi Storey Building Construction (Ir. Ing. Beny P) 2014.	
	Law No: 28 of 2002 concerning Buildings	
	Indonesian Plumbing Guidelines (PU) 2015	
	Plumbing System Design and Maintenance (Sofyan and Morimura) 2004	
	Plumbing System Design and Maintenance (Sofyan and Morimura) 2004	

Module Designation	Engineering Mechanics 5	
Semester(s) in which the Module is Taught	5 (Five)	
Person Responsible for the Module	Pratikto, S.T., M.Si.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study, Discussion	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes / week	
	Structured Learning: 2 x 60 = 120 minutes / week	
	Learning Process: 2 x 60 = 120 minutes / week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 5	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain about deformation of structural elements & the basic theories of forces and stiffness methods
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to calculate a matrix operation; truss; determinate and indeterminate static beams; portals; as well as inclined footing portals
Content	This course consists of three main parts, namely (1) basic theory, (2) operation of assistive devices in a matrix format and the application to building structures. It requires understanding on engineering mechanics from the previous semesters and (3) understanding on matrix operations. The structures studied are: trusses (building structure frames), two-dimensional beams and portals. Loads used are static gravity and lateral loads. The calculation results must be stated in the figure of force field in moments, latitude and normal.	
Examination Forms	Essays	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%	
Reading List	Supartono F.X. and Boen T., 1980, Structural Analysis Using Matrix Method, Faculty of Engineering, University of Indonesia, UI PRESS.	
	Wang C. K., 1999, Matrix Methods of Structural Analysis, Scrantons International Text Book, Co.	

	Pratikto, 2010, Analysis of Displacement in Structure using Excel and Calculator, PNJ PRESS.

Module Designation	Statistics	
Semester(s) in which the Module is Taught	5 (five)	
Person Responsible for the Module	Jonathan Saputra, S.Pd., M.Si.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lectures, Seminars/discussions, Contextual Instruction, Simulations, Discovery Learning, Case Studies	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Applied Mathematics	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module Objective
	1	To implement the concept of descriptive statistics and sampling techniques in the design and implementation of of building construction
	2	To implement data collection techniques in the design and implementation of building construction
	LO8	To be able to make building test and quality control reports.
	No	Module Objective

	1	To implement the concept of classical assumption testing (prerequisites) in the design and implementation of building construction using software
	2	To implement the concept of correlational and comparational analysis in the design and implementation of building construction using software
	3	To implement the concept of descriptive, comparative, and associative hypothesis testing in the design and implementation of building construction using software
Content	Applied Statistics course discusses the concepts and principles of Statistics required for Diploma 4 degree of study program of Building Construction Engineering. Study are held in the form of lectures, assignments, demonstrations, and practice using software to learn to process research data. This lecture material includes discussions on statistical concepts, descriptive statistics, sampling techniques, data collection techniques, classical assumption testing, correlational analysis, comparative analysis, hypothesis testing, and interpretation of data processing results for taking conclusions.	
Examination Forms	Essays	
Study and Examination Requirements	10%; Activity and discipline: 20% = Assignment Completion (knowledge and skills) 30%; Midterm Exam 40%; Final Exam	
Reading List	Sugiyono. (2014). Statistics for Research. Bandung: Alphabet.	
	Saputra, J. (2021). Introduction to Statistics for Civil Engineering Research. Bogor: Halaman Moeka.	
	Devore, J. (2010). Probability and Statistics for Engineering and Science, Eighth Edition. Cengage Learning.	
	Stolp, C., Dowdy, S., & Wearden, S. (2014). Statistics for Research. New York: John Wiley & Sons.	
	Vardeman, S. B., Walpole, R. E., Myers, R. H., Miller, I., & Freund, J. E. (2012). Probability and Statistics for Engineers and Scientists. Prentice Hall.	

Module Designation	Steel Construction 2	
Semester(s) in which the Module is Taught	5 (Five)	
Person Responsible for the Module	Erlina Yanuarini S.T., M.T., M.Sc.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	Lecture, Case Study Method, Group Discussion, Collaborative Learning	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits /3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 4, Concrete Structures 1, Steel Structures 1	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain the concept of building structure design
	2	Students are able to operate one of software for building structure analysis
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to calculate the nominal bearing strength of floor deck; nominal bearing strength of composite beams; nominal bearing strength of axial bending and their application to the surrounding structure; nominal bearing strength of base plate; nominal bearing strength of welded joint
	2	Students are able to design the steel structure components in multi storey building and to design shop drawings both manually or using BIM (Building Information Modeling) for modeling and structure analysis
Content	Steel Structure 2 course provides students with topics used in the design of steel structures for buildings which include the design of column structural components (flexible axial beam), base plates, composite beams, floor decks and welded joints as well as to enable students to realize design into shop drawings.	
Examination Forms	Essays	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and attendances: 30%	

Reading List	SNI: 1729-2020 Specification for structural steel building
	SNI 1727-2020 Minimum Load Design and Related Criteria for Buildings and Other Structures
	ANSI/AISC 360-16, Specification for Structural Steel Buildings
	STEEL STRUCTURE, Behavior, Analysis & Design – AISC 2010 (Wiryanto Dewobroto)

Module Designation	Concrete Structure 2	
Semester(s) in which the module is taught	5	
Person responsible for the module	Amalia, S.Pd., S.S.T., M.T.	
Language	Indonesian Language	
Relation to curriculum	Mechanics 1,2 and 3, Concrete Structure 1	
Teaching method	Lectures, Case Studies, Self Learning, Group Discussion	
Workload (incl. contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No.	Module objectives:
	1	Be able to explain the types of columns and structural behaviors combined with axial loads in the design of building structural elements, the basic principles in designing reinforced concrete structures in column design, the basic principles in designing pile caps and footing foundation
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No.	Module objectives:
	1	Able to design and make detailed reinforcement drawings for short and slender columns in accordance with SNI
	2	Able to design and make detailed reinforcement drawings for footing foundation and pile cap in accordance with SNI
	3	Able to make engineering design reports for column elements, pile cab, and footing foundation in building structures
Content	Concrete structure 2 course supports the competence of Bachelor program students in designing reinforced concrete structure in buildings. Concrete Structure 2 course discusses the design of reinforced concrete columns, footing foundation and pile caps in building structures.	

Examination forms	Midterm Exam 30%, Final Exam 40%, Assignment 30%
Study and examination requirements	Final Score > 55
Reading List	SNI 2847-2013 concerning Structural Concrete Requirements for Buildings
	SNI 1727-2013 concerning Minimum loads for building and other structures.

Module Designation	Foundation Engineering 2	
Semester(s) in which the Module is Taught	5th	
Person Responsible for the Module	Andikanoza Pradiptiya, S.T., M.Eng.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	1. Lecture, 2. Group Discussion 3. Collaborative learning 4. Structured learning 5. Case Study	
Workload (incl. Contact hours, self-study hours)	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks)	
Required and Recommended Prerequisiters for Joining the Module	Engineering Mechanics 1, Soil Mechanics 2	
Module Objectives/ Intended Learning Outcomes	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Students are able to explain the definitions, functions, types of shallow foundations (especially those related to building construction) and retaining walls
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to calculate the bearing capacity of shallow foundations using empirical methods (using Terzaghi, Meyerhoff, Brinch Hansen, and Vesic equations) and based on the results of SPT and sondir tests
	2	Students are able to plan shallow foundations and retaining walls and to control their stability
Content	Foundation Engineering 1 course will provide students with theoretical knowledge and applications of foundation design for building construction according to designing standards established by SNI-PUPR	
Examination Forms	Essays	

Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assigments and Attendances: 30%
Reading List	Das, B (2011). Principles of Foundation Engineering, Thompson, Canada.
	Joseph E Bowles, 1992, “Foundation Design”, Volume 1 Fourth edition, Erlangga Jakarta.
	Joseph E Bowles, 1992, “Foundation Design”, Volume 2 Fourth edition, Erlangga Jakarta.
	PEDC, “Foundation I”, Bandung
	PEDC, “Foundation II”, Bandung
	Suryono Sosrodaryono Ir, Kazuto Nakazawa., "Soil Mechanics and Foundation Engineering", Pradnya Paramita Jakarta.
	Zaenal Nur Arifin, Dipl Ing and Ir. Sri Respati N, 1995, "Foundation", Bandung Polytechnic Development Center.

Module Designation	Professional Ethics & Labor Laws	
Semester(s) in which the Module is Taught	5th	
Person Responsible for the Module	Arliandy Pratama, S.T., M.Eng	
Language	Indonesian Language	
Relation to Curriculum	Pancasila, Citizenship, Construction Management 1	
Teaching Methods	Lecture	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) (3.63 ECTS)	
Required and Recommended Prerequisites for Joining the Module	(1) Students with attendance below 80% without valid reason for absence (2) Students with attendance below 65% even with valid reason for absence	
	Assessment methods: Assessment methods: (1) Mid Exam, (2) Final Exam; (3) Assignment and Attendance	
Module Objectives/ Intended Learning Outcomes	L01	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module Objective
	1	Able to explain about the definition of professional ethics, the use of ethics, profession and professionalism, ethics related to the use of engineering technology
	2	Able to explain copyright laws to avoid modes of cyber crimes
	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module Objective
	1	Students are knowledgeable about construction industry employment applicable in Indonesia
	2	Students are expected to know and understand the concept of occupational safety and health (K3) and the application of occupational safety and health in the construction service industry
Content	Professional Ethics and Labor Law course introduces the meaning of ethics that apply in professional, legal, culture worlds and ethics that apply in building construction engineering businesses. Materials in this course include: knowledge on ethics and various types of professions in building construction, understanding on the role of profession in building construction towards the development of building construction science, as well as its impact and contribution to society. In this course, students are also	

	introduced to associations/ institutions/ standards/ bodies associated with the development of building construction. This course will provide students with knowledge on Indonesian workforce, labor, construction industry, concept of hazard and risk, occupational health and safety, safe working methods in construction industry, process/implementation of occupational safety and health in construction industry, concept of labor insurance, concept of CHS and its aspects.
Examination Forms	Midterm Exam: written Final Exam: written
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Presentation Assignments, Daily and Special Assignments: 30%
Reading List	ASTM Standards Soil Compaction (1992), American Society for Testing and Material, Philadelphia, PA
	Caterpillar Performance Handbook, Caterpillar Inc., Peoria, III (published annually) Machine data can also be found at: www.cat.com/eda/layout?m=37840&x=7
	Caterpillar Performance Handbook, Caterpillar Inc., Peoria, III (published annually)
	Construction and Controlling Compaction of Earth Fills, 2000, ASTM Special Technical Publication, 1384, D.W. Shanklin Ed. ASTM, Philadephia, April
	Guide to Earthwork Construction,1990, State of the Art Report 8, TRB, National Research Council, Washington, DC
	Handbook of Ripping, 7th. Ed. (January 1983), Caterpillar Tractor Co., Peoria,III. Land Clearing, Caterpillar Tractor Co., Peoria,III.
	Peurifoy, Schexnayder, Shapira, 2006, Construction Planning, Equipment, and Methods, Seventh Edition, McGraw-Hill, International Edition, New York.

Module Designation	Scaffolding Construction Work	
Semester(s) in which the module is taught	5th	
Person Responsible for the Module	Suripto, S.T., M.Si.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Practice	
Workload	Practice: 2 x 170 = 340 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Mould and Scaffolding Construction Work 2	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the meaning of scaffolding work, the requirements of scaffolding work, the scope of scaffolding work, as well as the materials and tools for scaffolding work
	2	Students are able to calculate the material strength for scaffolding construction works in Building Construction Project
	3	Students are able to plan scaffolding works in Building Construction Project
	4	Students are able to perform scaffolding work in building construction projects, do assessment to ready-to use scaffolding, demolition and tidying-up Scaffolding
	5	Students are able to present and report the results of scaffolding work practices
Content	Definition of Scaffolding, benefits and requirements of Scaffolding work, able to calculate, plan and perform Scaffolding construction to assist in work at a height including carrying out dismantling and tidying up	
Examination forms	Practice: 60 %; Report: 20 %; Test/ Assignment: 10% and Attendances: 10 %	
Study and examination requirements	Final Score > 55 (C)	
Reading List	2015-054 SKKNI Ministry of Manpower - Installation of Scaffolding and Mould	
	Regulation of Minister of Manpower and Transmigration No. PER. 01/MEN/1980 concerning Occupational Safety and Health in Building Construction	
	JG. Richardson. F, “Formwork Construction Practice”	
	F. Wigbout, Ing, 1992, Formwork Guidelines (Printing Box), Erlangga, Jakarta	

Module Designation	*Pre-Cast Steel Construction Work*	
Semester(s) in which the module is taught	*5th*	
Person Responsible for the Module	*A.Rudi Hermawan, S.T., M.T.*	
Language	*Indonesian Language*	
Relation to Curriculum	*Compulsory*	
Teaching Method	*Practice*	
Workload	*Practice: 2 x 170 = 340 minutes/ week*	
Credit Points	*2 credits (sks) / 3,63 ECTS*	
Required and recommended prerequisites for joining the module	*Steel Construction Work*	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain the concept of implementation and building structure design
	2	Students are able to operate one of software supporting building construction
	3	Students are able to calculate the lifting capacity of Foundation precast elements, Column precast elements, Beam precast elements, Floor precast elements
	4	Students are able to apply various types of building precast joints and connections, building structural components, and shop drawing design manually or using BIM (Building Information Modeling) for structural analysis modeling
Content	Precast Concrete Construction course provides students with topics used in drawing and determining connections and performing erections as well as controlling the strength of precast building elements	
Examination forms	*Practice: 60 %; Report: 40 %; Test/ Assignment: 30% and Attendances: 10 %*	
Study and examination requirements	*Final Score > 55 (C)*	
Reading List	*SNI-7833-2012*	

	SNI-2847-2019
	ACI 318M-14

Module Designation	Structural Dynamics	
Semester(s) in which the module is taught	6	
Person responsible for the module	Pratikto S.T., M.Si.	
Language	Indonesian Language	
Relation to curriculum	Engineering Mechanics 1, 2, 3, 4 and 5 , Steel Structure 1 and 2, Concrete Structure 1 and 2	
Teaching method	Lectures, Case Studies, Self Study	
Workload (incl. contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3.63 ECTS	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Students are able to explain the basic concepts of Structural Dynamics, structural response to dynamic loads, dynamic analysis to structures and degrees of freedom, single degree of freedom (SDOF) systems which include parameter modeling, mathematic modeling, free body diagrams and equations of motion of structure
	2	Students are able to explain free vibration of a SDOF system for harmonic motion for damped and undamped systems and viscous damped systems, SDOF for spatial form of excitation which includes viscous damped system response to ideal step input, undamped system response to rectangular pulses and loading ram, short duration impulse, impulse response unit, SDOF response to dynamic excitation using duhamel integral method, Spectrum Response,
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Students are able to calculate systems with a single degree of freedom (SDOF) which include parameter modeling, mathematic modeling, free body diagrams and equations of motion of structure.
	2	Students are able to calculate DOF system for harmonic motion, SDOF for spatial form of excitation which includes of viscous damped systems for ideal step inputs for damped and undamped systems and viscous damped systems, SDOF response to dynamic excitation using duhamel integral method, Spectrum Response, MDOF system
Content	Structural Dynamics course will provide students with knowledge on the fundamentals of of structural dynamics.	

Examination forms	Midterm Exam 30%, Final Exam 40%, Assignment 30%
Study and examination requirements	Final Score > 55
Reading List	Sugeng P Budio, Structural Dynamics Handout
	Mario Paz, Structural Dynamics

Module Designation	Engineering Economy	
Semester(s) in which the Module is Taught	6th	
Person Responsible for the Module	Sidiq Wcono, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Construction Management 2, Statistics	
Teaching Methods	Lecture	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) (3.63 ECTS)	
Required and Recommended Prerequisiters for Joining the Module	(1) Students with attendance below 80% without valid reason for absence (2) Students with attendance below 65% even with valid reason for absence	
	Assessment methods: Assessment methods: (1) Mid Exam, (2) Final Exam; (3) Assignment and Attendance	
Module Objectives/ Intended Learning Outcomes	L02	Able to estimate costs and cost points Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module Objective
	1	Students are able to explain about engineering economic theory, market mechanisms, production costs, time value of money
	LO7	To be able to make cost estimates with reference to technical drawings, technical specifications, able to arrange work implementation schedules.
	No	Module Objective
	1	Students are able to calculate a project investment value of and depreciation
Content	Engineering Economy course provides students with understanding about economic theory, project investment, interest formulas, project investment, depreciation and taxation valuation methods as well as provides students a competence to formulate investment problem solutions in building construction projects.	
Examination Forms	Midterm Exam: written Final Exam: written	
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Presentation Assignments, Daily and Special Assignments: 30%	
Reading List	1. Budiono, Synopsis of Introduction to Economic Science, FE UGM Publisher, Yogyakarta, 1995.	

	2. Marsudi Joyowiyono, Engineering Economy Volume 1 & 2, Department of Public Works, Jakarta 1992.
	3. Hendry Malcolm, Engineering Economic Principles, 2nd Edition, Mc Hill International 1996.
	4. Paul Degarmo Cs, “Engineering Economy, 10th Edition, Prentice Hall Inc, 1997.
	5. Donald Newnam, “Engineering Economic Analysis”, 10th Edition, Oxford University Press, 2009.

Module Designation	Earthquake Proof Building Structures	
Semester(s) in which the Module is Taught	6th	
Person Responsible for the Module	Dr. Anis Rosyidah	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Seminar, *Problem-based learning*	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Able to explain the concept & philosophy of earthquake proof buildings
	2	Able to determine a structural system to be used in earthquake proof buildings
	3	Be able to determine structural irregularities
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Able to calculate the design seismic load
	2	Able to do detailing in buildings with a moment-bearing structural system
Content	Earthquake Proof Building Structures course provides students with topics used in the design of earthquake-proof building structures including: the causes of earthquakes, the earthquake magnitude scale, the effects caused	

	by earthquakes, concepts & philosophies of earthquake proof buildings, Structural systems in earthquake proof buildings, irregularities structure, calculation of design seismic load, and detailing in moment-bearing structural system.
Examination Forms	Essays
Study and Examination Requirements	Midterm Exam: 30%; Final Exam: 40%; Assignments and Attendances: 30%
Reading List	SNI 1726-2019
	SNI 2847-2019
	ACI 318M-2014

Module Designation	Entrepreneurship	
Semester(s) in which the module is taught	6th	
Person Responsible for the Module	Nunung Martina	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Type of teaching, Contact Hours	Lectures, Debriefing, Case Studies, Independent Study	
Workload	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Requirements According to the Examination Regulations		
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives:
	1	Students are able to explain the concept of entrepreneurship according to the scientific discipline development in a business plan
	2	Students are able to identify business opportunities according to the characteristics and ethics of entrepreneurship in a business plan
	3	Students are able to develop their creativity, innovation and business strategy according to their business plan
	4	Students are able to conduct a business feasibility study in a business plan
	5	Students are able to design marketing, business promotion and product selling skills according to their business plan
Content	This course discusses the scope of entrepreneurship material which includes the definition of entrepreneurship, the development of entrepreneurial disciplines, the concept of entrepreneurship, the characteristics and ethics in entrepreneurship, business opportunities, identification of creativity and innovation in developing businesses, business feasibility studies, small businesses profiles and their development models, method for planning business marketing and promotion, designing sales skills and designing businesses as well as their business strategies	
Study and Examination Requirements and Forms of Examination	Mid Exam: 30%; Final Exam: 40%; and Assignments & Attendances: 30%	

Reading List	Annissa, R. D. 2013. The Importance of Understanding the Construction Business Ethics.
	Buchari, Alma, 2004. Marketing Management and Service Marketing. Alfabeta. Bandung
	Carol Kinsey Goman. 1991. Creativity in Business. Binarupa Aksara Publisher. Jakarta,
	Djalil, S. 2003. Theoretical and Practical Context of Corporate Social Responsibility. Journal of Economic Reform. Vol. 4 (1)
	Friedman, M. 1970. The Social Responsibility of Business is to Increase its profits. New York Times Magazine.
	Geoffrey, G. Meredith, et. Al.1996. Entrepreneurship Theory and Practice. PT. Pustaka Binaman Presindo. Jakarta
	Hisrich, R.D, Peters, M.P., & Shepherd, D.A .2008. Entrepreneurship: Mc Graw hill International edition.
	K. Bertens. 2000. Introduction to Business Ethics. Kanisius. Jakarta
	Peter F. Drucker. 1985. Innovation and Entrepreneurship Practice and Principles. Harper & Row. Publisher. Inc. New York
	Sjahdeini, Sutan R. 2007. Corporate Social Responsibility. Journal of Business Law Vol. 26 (3)
	Sukmadi, et al. 2008. To be a Reliable Entrepreneur. Humaniora. Bandung
	Suryana. 2001. Entrepreneurship. Salemba Empat. Jakarta
	Wijandi, Soesarsono. 1988. Introduction to Entrepreneurship. Sinar Baru. Bandung
	Wirasasmita, Yuyun.1994. Entrepreneurship Handbook. UPT-Penerbit IKOPIN. Bandung
	Martina, Nunung, 2019. Book of Professional Ethics and Entrepreneurship, PNJ Press, Depok

Module Designation	Prestressed and Precast Concrete Structures	
Semester(s) in which the module is taught	6th	
Person Responsible for the Module	Andrias Rudi Hermawan, S.T., M.T.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Method	Lectures and discussions, completion of exercises, case study method	
Workload	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Required and recommended prerequisites for joining the module	Engineering Mechanics 5 Concrete Structure 2	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Be able to explain about the stages in prestressed concrete beam construction, precast concrete systems in general, their advantages and disadvantages, the aspects related to precast concrete structure design and application, precast concrete construction methods.
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments
	No	Module objectives:
	1	Able to design prestressed concrete beam structures and precast concrete structures.
Content	Prestressed and Precast Concrete Structures course provides students with a competence in the calculation of prestressed and precast concrete structures including the design, analysis and application of prestressed and precast concrete structures.	
Examination forms	Final Exam: 40%; Midterm Exam: 30%; and Attendances, disciplines & Assignment: 30%	
Study and examination requirements	Final Score > 55 (C)	

Reading List	SNI 7833:2012 Procedures for designing precast and prestressed concretes for buildings.
	ACI, 2011, ACI 318M-14 – Building Code Requirements for Structural Concrete, Farmington Hills.
	E.G.Nawy, 2003, Prestressed Concrete, A Fundamental Approach, 4th Ed., Prentice Hall, Eng. Cliffs NJ.
	Elliot K.S. and Tovey, a.K., 1996, Precast Concrete Frame Building, Design Guide, British Cement Association, BCA's Publisher.
	PCI, Precast/Prestressed Concrete Institute, 2017, PCI Design Handbook, 8th edition, Chicago, Illinois.

Module Designation	Construction Management 3	
Semester(s) in which the module is taught	6th	
Person Responsible for the Module	Rizki Yunita Sari, S.Pd., MT	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Type of teaching, Contact Hours	Lectures, Debriefing, Case Studies, Independent Study	
Workload	Learning Process: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 Credits / 3,63 ECTS	
Requirements According to the Examination Regulations	-	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives:
	1	Students are able to identify Motivation & Leadership, Construction Project Organization, and Project Quality Design
	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Students are able to describe Resource Management (Tools, Machines, Methods, Money, Materials)
	LO8	To be able to make building test and quality control reports.
	No	Module objectives:
	1	Students are able to compile Construction Project Report
	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students are able to explain about Project Preparation, Field Layout Design, Meetings & Negotiations
	2	Students are able to explain about Construction Project Administration, Contract Change Order and Project Closing

Content	This course is the continuation of Construction Management 1 and Construction Management 2 courses. This course explains about the construction implementation process from project preparation to completion in an integrated manner.
Study and Examination Requirements and Forms of Examination	Midterm Exam: 30%; Final Exam: 40%; Assignments & Attendances: 30%
Reading List	Ervianto, Wulfam; "Construction Project Management Application Theory", ANDI-Yogyakarta Publisher, 2004
	Irika, Widiasanti; "Construction Management", Rosda-Jakarta Publisher, 2013
	Kamarwan, Sidhartha, et al. "Construction Management Science for Higher Education", Tarumanegara University Publishing Body, Jakarta, 1998.
	Nurhayati, "Project Management", Industrial Engineering, University of North Sumatra, 2004
	Santosa, Budi; "Project management": Concept & Implementation, Graha Ilmu Publisher -Yogyakarta, 2009
	Suharto, Iman, "Project Management, from Concept to Operation" Erlangga, Jakarta, 1998.
	Tarumanegara University; "Construction Management for Higher Education"; Jakarta, 1998

Module Designation	Research Methodology	
Semester(s) in which the Module is Taught	6th	
Person Responsible for the Module	Dr. Dyah Nurwidyaningrum, S.T., M.M., M.Ars.	
Language	Indonesian Language	
Relation to Curriculum	Compulsory	
Teaching Methods	1. Lecture 2. Inquiry 3. Problem Base Learning	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits / 3,63 ECTS	
Required and Recommended Prerequisiters for Joining the Module	Statistics, Building Construction, Scientific Report Writing.	
Module Objectives/ Intended Learning Outcomes	LO1	To have ability to be responsible, ethical, adaptable, cooperative and communicative in carrying out tasks.
	No	Module objectives:
	1	Students are able to choose a multi-storey Building research topic
	2	Students are able to formulate a research background, problems, objectives and benefits
	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey Buildings.
	No	Module objectives:
	1	Students are able to use literature review as a literature study
	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method

Module Designation	Special Topics	
Semester(s) in which the module is taught	6	
Person responsible for the module	Dr. Anis Rosyidah	
Language	Indonesian Language	
Relation to curriculum	Engineering Mechanics 1, 2, 3, 4 and 5, Steel Structure 1 and 2, Concrete Structure 1 and 2	
Teaching method	Lectures, Case Studies, Self-Study, Presentation	
Workload (incl. contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	2 credits (sks) / 3,63 ECTS	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Able to conduct building investigations
	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Able to identify the steps in obtaining Certificate of Occupancy, in evaluating the existing buildings, types of destructive and non-destructive testing, structural strengthening methods
	2	Able to compile Certificate of Occupancy
	3	Able to operate nondestructive test tools
	LO8	To be able to make building test and quality control reports.
	No	Module objectives:
	1	Able to make recommendations on the buildings being evaluated
Content	Special Topic course provides students with topics in building forensics, including the scope of certificate of occupancy, existing building investigations, destructive & non-destructive testing, structural strengthening, NDT tool use method, and existing building inspection practices	
Examination forms	Midterm Exam 30%, Final Exam 40%, Assignment 30%	

Study and examination requirements	Final Score > 55
Reading List	Regulation of Minister of Public Works Number: 25/PRT/M/2007 Dated August 9, 2007 concerning Guidelines for Obtaining Certificate of Occupancy for a Building
	ASTM 1997 C 597–83,1991, Standard Test Method for Pulse Velocity Through Concrete
	ASTM C805/C805M -13a. (2013). Standard Test Method for Rebound Number of Hardened Concrete. ASTM International
	ASTM C42/C42M -13. (2013). Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete. SE International

Module Designation	Building Construction Project Design Work	
Semester(s) in which the Module is Taught	6th	
Person Responsible for the Module	Amalia, S.Pd., SST., MT., Dr. Anis Rosyidah, S.Pd., SST., MT, Rinawati, ST., MT., A. Rudi Hermawan, ST., MT., Yanuar Setiawan, ST., MT.	
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Problem -based learning	
Workload (incl. Contact hours, self-study hours)	Face to Face: 2 x 50 = 100 minutes/ week	
	Structured Learning: 2 x 60 = 120 minutes/ week	
	Self-Study: 2 x 60 = 120 minutes/ week	
Credit Points	3 Credits (SKS) / 5,44 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO2	Able to apply mathematics, natural science (physics) and engineering principles to design, implement and supervise multi-storey buildings.
	No	Module objectives:
	1	Able to design building layout, longitudinal and transverse sections and the appearance of an 8-storey building designated for public
	LO3	To be able to identify and solve clearly-defined building construction problems, by analyzing data, using technical standards and guidelines, and able to choose the right solution method
	No	Module objectives:
	1	Able to design superstructures on 8-storey buildings according to regulations
	2	Able to design substructures on 8-storey buildings according to regulations
	LO4	Able to make engineering designs of multi-storey buildings, which meet the construction standards and adopt the construction digitalization technology developments

	No	Module objectives:
	1	Able to make detailed engineering design (DED) drawings of an 8-storey building structure according to the guidelines
	2	Able to make an engineering design report for 8 floors building structure.
Content	Building Construction Project Design Work course is one of courses that supports the competence of Bachelor (D-IV) students in designing medium-rise building structures (8 storey) in areas with high seismic risk. This course combines several courses that support the design of medium-rise building structures, including the design of roof structures using steel trusses, the design of floor plates, stairs and lifts, the design of beams, columns and foundations along with detailing for areas with high seismic risk	
Examination Forms	Presentation of design of an 8-storey building structure in an area with high seismic risk	
Study and Examination Requirements	Presentation: 30%; Design report: 40%; active and Attendances: 30%	
Reading List	SNI 2847-2019 concerning Structural Concrete Requirements for Buildings	
	SNI 1727-2020 concerning Minimum loads for building and other structures.	
	SNI 1726-2019 concerning Procedures for Designing Earthquake Proof Building and Non-Building Structures	
	SNI 1729-2020 concerning Specification for Steel Structure Building	

Module Designation	Job Training	
Semester(s) in which the Module is Taught	7th	
Person Responsible for the Module		
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Project Based Learning	
Workload (incl. Contact hours, self-study hours)	Learning Process 20 x 170 = 3400 minutes/ week	
Credit Points	20 Credits (SKS) / 36,27 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Systematically plan the work field and work implementation standards in the apprenticeship area according to the area of expertise. Carry out work at the apprenticeship in accordance with their expertise in a guided / independent, measurable and responsible manner
	2	Report the work at the internship according to their area of expertise in a guided / independent, measurable, and responsible manner. Identify problems at the internship critically and responsibly according to their area of expertise. Analyze problems in the internship critically and responsibly according to their area of expertise
	3	Solve problems at the internship critically and responsibly according to their field of expertise. Demonstrate the attitude and behavior of interacting, communicating, and collaborating with colleagues, staff, and leaders at the internship
Content	This course provides insight and practical experience to students of the Undergraduate Program about activities in the work field so that they have adequate competence in carrying out the Assignment according to their field of expertise.	

Examination Forms	Presentation of Internship Report
Study and Examination Requirements	Attitude, Cooperation, Knowledge, Initiative, Skill, Presence from Industry supervisor: 50%; Assessment of internship report from Internship supervisor: 50%
Reading List	Buku Pedoman Praktik Kerja Lapangan/ Magang Industri Politeknik Negeri Jakarta
	Peraturan Presiden Nomor 8 Tahun 2012 tentang Kerangka Kualifikasi Nasional Indonesia (KKNI)
	Undang-Udang RI Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional

Module Designation	Undergraduate Thesis	
Semester(s) in which the Module is Taught	8th	
Person Responsible for the Module		
Language	Indonesian Language	
Relation to Curriculum	*Compulsory*	
Teaching Methods	Lecture, Problem -based learning	
Workload (incl. Contact hours, self-study hours)	Face to Face: 4 x 50 = 200 minutes/ week	
	Structured Learning: 4 x 60 = 240 minutes/ week	
	Self-Study: 4 x 60 = 240 minutes/ week	
Credit Points	4 Credits (SKS) / 7,25 ECTS	
Required and Recommended Prerequisiters for Joining the Module	-	
Module Objectives/ Intended Learning Outcomes	LO9	To be able to carry out, supervise and control the building construction process by taking into account health, public safety, environment (CSMS) aspects, legal and economic aspects
	No	Module objectives:
	1	Students practice applying scientific principles in studying various problems in civil engineering education and teaching
Content		
Examination Forms	Presentation of Thesis project report	
Study and Examination Requirements	Presentation: 20%; Basic Skill: 25%; Problem Identification and Methodology: 15%; Literature: 20%; Thesis completion plan: 20%	
Reading List	Pedoman Skripsi D4 Politeknik Negeri Jakarta	