COURSE IDENTITY OF BACHELOR CIVIL ENGINEERING

FACULTY OF ENGINEERING
UNIVERSITY OF BENGKULU
2022

DAFTAR ISI

1st Semester Course Identity

Course name	: Calculus		
Code	:		
Semester	: 1 (One)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Annisa Fitria, S.T., M.Eng.St.; Makmun Reza R, S.T., M.T.		
Course Coordinator	: Makmun Reza R, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments /homework	20%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	35%	Final Exam
Nature of Courses	Required		
Course Description: The Calculus course discusses the basics of calculus regarding real numbers, limits, derivatives and integrals.			

Course name	**:** Civil Engineering Drawing
Code	:
Semester	: 1 (One)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	: 50 minutes
Teaching Staff	: Yuzuar Afrizal, S.T., M.T.; Dr. Khairul Amri, S.T., M.T.
Course Coordinator	: Yuzuar Afrizal, S.T., M.T.

Evaluation	Participatory	10%	Student Activity in class
	Project Results	40%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: Introduction to Civil buildings, Autocad basics, Drawing a 1-story house, Volume Calculation.			

Course name	: Geodetic Engineering		
Code	:		
Semester	: 1 (One)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Makmun Reza, S.T., M.T.; Besperi, S.T., M.T.; Dr. Hardiansyah, S.T., M.T.; Dr. Gusta Gunawan, S.T., M.T.		
Course Coordinator	: Besperi, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Project Result	25%	Student Project
	Assignments/homework	20%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	35%	Final Exam
Nature of Courses	Required		

Course Description:
The scope of the lecture material consists of: Definition of land surveying, angle measuring tools, distance measuring tools, scale definitions, contour definitions, map definitions, elements on maps, optical distance measuring tools, angle measuring tools, height difference measurements with leveling, corrections height difference, measuring angles and distances with optical instruments with theodolith, measuring horizontal distances and angles, closed polygon theory, open polygon theory, measuring closed polygons and their corrections, measuring open polygons and their corrections, correcting polygons with two fixed points, measuring height differences with tools theodolite, measuring angles and distances with a total station, Measurement of horizontal and vertical angles, inclined distances, basics of map measurement, polygon calculation and correction as a horizontal map framework, vertical skeleton calculations, detailed point measurements, detailed point calculations, technical map drawing. Determination of the area and volume of civil works, Making detail points, straight lines in the field, making arc detail points in the field, Introduction to software for map making.

2nd Semester Course Identity

Course name	: Engineering Statics		
Code	:		
Semester	: 2 (Two)		
Number of Credits	: 4		
Number of meetings	: 16		
Length of each meeting	:150 minutes		
Teaching Staff	: Ade Sri Wahyunu, S.T., M. Eng, Ph.D., Agustin Gunawan, S.T., M. Eng.		
Course Coordinator	: Agustin Gunawan, S.T., M. Eng.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam

Nature of Courses	Required
Course Description: Supporting, Reaction, Equilibrium Conditions, Internal Forces (Moment, Latitude, Axial), Inclined Beam, Function Load, Line of Influence, Maximum Moment Maximum, Indirect girder, Gerber Beam, 3-joint Portal, Truss Construction Simple.	

Course name	: Engineering Material Technology		
Code	:		
Semester	: 2 (Two)		
Number of Credits	: 4		
Number of meetings	: 16		
Length of each meeting	:150 minutes		
Teaching Staff	: Ade Sri Wahyuni, S.T., M.Eng., Ph.D.; Yuzuar Afrizal, S.T., M.T.		
Course Coordinator	: Ade Sri Wahyuni, S.T., M. Eng., Ph.D.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: Concrete as a building material, concrete quality control, durability of concrete, concrete mix design, concrete testing, assessment and proposal for concrete improvement, special concrete technology, Steel technology.			

Course name	: Building Structures
Code	:

Semester	: 2 (Two)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Yuzuar Afrizal, S.T., M.T. Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Yuzuar Afrizal, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Project Results	35%	Student Project
	Assignments/homework	15%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: Provide an overview of the Structural parts of the building and its supporting elements and their functions, introduction of detailed Structural drawings, a brief description of the implementation method.			

Course name	: Engineering Geology
Code	:
Semester	: 2 (Two)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	:100 minutes
Teaching Staff	: Mawardi, S.T., M.T. Lindung Zalbuin, S.T., M.Eng., Ph.D.
Course Coordinator	: Mawardi, S.T., M.T.

Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the Engineering Geology course material consists of: understanding of engineering geology, the relationship between civil engineering work and natural forces (Indogen and Exogenous), working on the earth, the layers that make up the earth, types of rocks and minerals and their properties. its nature, rock and soil classification in engineering geology, Structural geology, geomorphology, ground motion, earthquakes, and geological investigations (engineering).			

Course name	: Environmental Engineering		
Code	:		
Semester	: 2 (Two)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Dr. Khairul Amri, S.T., M.T.		
Course Coordinator	: Dr. Khairul Amri, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		

Course Description: Climate change; Air pollution; water pollution; Raw water and clean water treatment; household, industrial, and IPLT waste; waste law; waste management and case S.Tudies on landfill; AMDAL basics; EIA case S.Tudy FGD.

Course name	: Engineering Mathematics		
Code	:		
Semester	: 2 (Two)		
Number of Credits	: 4		
Number of meetings	: 16		
Length of each meeting	:200 minutes		
Teaching Staff	: Ir. Mawardi, M.T. Annisa Fitria Edriani, S.T., M.Eng.St		
Course Coordinator	: Ir. Mawardi, M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Matrices, vector operations, Elementary Row Operations, SPL, Space analytic geometric plane equations, Linear transformations, Vector differentials, Laplace transforms, differential equations with Laplace transforms, Infinite series, functions of multiple variables, Taylor and Mclaurin series of functions of two variables, Vector differential, vector integral, triple integral, Mass calculation, center of gravity, moment of inertia, Triple integral in cylindrical and spherical coordinates, Special functions (Beta, Gamma, Bessel, Legendre, Bernoulli, Lagrange), Double Fourir series, and their uses in calculations, analysis in the field of civil engineering, and also to solve civil engineering problems.			

3rd Semester Course Identity

Course name	: Mechanics of Materials		
Code	:		
Semester	: 3 (Three)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:150 minutes		
Teaching Staff	: Ade Sri Wahyuni, S.T., M.Eng., Ph.D; Agustin Gunawan, S.T., M.Eng.		
Course Coordinator	: Agustin Gunawan, S.T., M.Eng.		
Evaluation	Participatory	10%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	15%	Group and Individual tasks
	UTS	25%	Mid-Term Test
	UAS	25%	Final Exam
Nature of Courses	Required		
Course Description: 1) Stress Strain, 2) Bending Stress in Beam, 3) Shear Stress in Beam, 4) Torque Stress, 5) Combination of Stresses, 6) Analysis of Field Stresses, 7) Design of Bars Based on Stress, 8) Specific Static Beam Deformation, 9) Compression Rod Stability.			

Course name	: Reinforced Concrete Structure
Code	:
Semester	: 3 (Three)
Number of Credits	: 2
Number of meetings	: 16

Length of each meeting	:100 minutes		
Teaching Staff	: Ade Sri Wahyuni, S.T., M. Eng, Ph.D; Agustin Gunawan, S.T., M.Eng.		
Course Coordinator	: Agustin Gunawan, S.T., M.Eng.		
Evaluation	Participatory	10%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	25%	Mid-Term Test
	UAS	30%	Final Exam
Nature of Courses	Required		
Course Description: The basics of planning for reinforced concrete Structures which include design concepts, planning of flexural elements (beams and plates), analysis of serviceability, shear and torsion planning, two-way plates.			

Course name	: Basic Soil Mechanics		
Code	:		
Semester	: 3 (Three)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Dr. Rena Misliniati, S.T., M.T. Mawardi, S.T., M.T.		
Course Coordinator	: Dr. Rena Misliniati, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks

	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the lecture material consists of knowledge of the definition of soil and rock, dry soil volume/dry density, saturated density, wet density, void ratio, porosity, degree of saturation, effective volume weight and its relationships, clay minerals, granular soil composition. , Grain size analysis, Atterberg boundaries, Soil classification, Compaction test, properties of compacted clay, shrinkage swelling of clay soils, Specifications for compaction of soil in the field, Control of density in the field, Groundwater, Capillary pressure, Effect of capillary pressure, Permeability, Flow line, Water flow in soil, Laboratory permeability test, Permeability test in the field, Permeability coefficient calculation, Permeability relationship with soil void ratio, Seepage, Flownet, Seepage pressure,Non-isotropic soil conditions, Layered soil conditions, hydrostatic pressure, Seepage in bending Structures, Filters, soil Stress, Effective Stress, total Stress, pore water Stress, Soil shear Strength, Soil shear Strength testing, Sand soil shear Strength, Soil shear Strength clay, Sensitivity of clay, Shear Strength of unsaturated soil, Coefficient of lateral earth pressure at rest Ko, Stress path.			

Course name	: Fluid Mechanics		
Code	:		
Semester	: 3 (Three)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Besperi, S.T., M.T. Dr. Gusta Gunawan, S.T., M.T.		
Course Coordinator	: Besperi, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test

	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Definition of Fluids and parameters determining Fluid properties, hydrostatic forces, application of hydrostatics to water infrastructure, basic hydraulic equations, energy lines, open channel characteristics, critical flow, simple open channel/uniform flow, Energy loss in closed channels, slow changing water level profile gradually, water jumps and plunges, Able to understand the principles of flow.			

Course name	: Basic of Transportation Planning		
Code	:		
Semester	: 3 (Three)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Samsul Bahri, S.T., M.T. Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Samsul Bahri, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Overview of traffic and transportation, traffic data collection techniques, road segment performance capacity, capacity and performance of intersections, road traffic safety, traffic management; land-use systems, transport networks and services,			

Course name	: Highway Engineering		
Code	:		
Semester	: Three (Three)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Samsul Bahri, S.T., M.T. Makmun R. Razali, S.T., M.T. Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Dr. Hardiansyah, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		

Course Description:

The concept of road geometric planning, horizontal alignment, vertical alignment, Planning and geometric depiction of highway segments on topographic maps; types, functions and problems of road pavements and is able to calculate the bearing capacity of subgrade, types of asphalt and asphalt testing, types of road pavement Structure layers and calculate the bearing capacity (CBR) of road foundations, planning of asphalt concrete pavement mixes, manufacture of asphalt concrete mixtures (Asphalt Concrete), the implementation of laying and compacting asphalt concrete, planning the thickness of the flexible pavement Structure, planning the thickness of the rigid pavement.

Course name	: Computer Programming		
Code	:		
Semester	: 3 (Three)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	: 50 minutes		
Teaching Staff	: Dr. Hardiansyah, S.T., M.T. Lindung Zalbuin Mase, S.T., M.T., Ph.D. Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Dr. Hardiansyah, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The basics of programming in general, number systems and binary algebra operations, introduction to flowcharts, programming logic and an introduction to programming with excel, make simple programs to solve civil engineering problems.			

Course name	: Statistics
Code	:
Semester	: 3 (Three)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	: 100 minutes

Teaching Staff	: Dr. Khairul Amri, S.T., M.T. Fepy Supriani, S.T., M.T.		
Course Coordinator	: Dr. Khairul Amri, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Introduction to Statistics for Civil Engineering, Probability Concepts, Normal Distribution, Sampling Distribution, Parameter Estimation, Hypothesis Testing and SPSS.			

Course name	: Structural Analysis		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Agustin Gunawan, S.T., M.Eng; Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Agustin Gunawan, S.T., M.Eng.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test

	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: Understanding of indeterminate Static Structures, slope deflection method, matrix method Structural analysis, Structural modeling with auxiliary programs, Structural loading, running auxiliary programs, reading results and verifying output results of auxiliary programs,			

4th Semester Course Identity

Course name	: Advanced Concrete Structure		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Ade Sri Wahyuni, S.T, M.Eng., Ph.D. Agustin Gunawan, S.T, M.Eng. Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Ade Sri Wahyuni, S.T, M.Eng., Ph.D.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Earthquake-resistant concrete Structure design concept, Structure configuration, Static and dynamic loading, Structural analysis, element capacity design, Gravity and non-structural frames			

Course name	: Steel Structure		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Yuzuar Afrizal, S.T., M.T. Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: This course Studies knowledge about the design of Steel Structures I including Introduction, tensile Structural elements, concentric compression Structural elements, Structural connection elements and welded joints.			

Course name	: Applied Soil Mechanics
Code	:
Semester	: 4 (Four)
Number of Credits	: 3
Number of meetings	: 16
Length of each meeting	: 100 minutes

Teaching Staff	: Mawardi, S.T., M.T. Lindung Zalbuin, S.T, M.Eng., Ph.D		
Course Coordinator	: Lindung Zalbuin, S.T, M.Eng., Ph.D		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the lecture material consists of knowledge of the definition of soil Strength, identifying soil, especially related to soil Strength in practice, The theory of Stress distribution, The theory of consolidation in clay soils, Theory of lateral forces on soils, Theory of retaining walls, Theory of subsidence in soils, The theory of power support soil, slope Stability theory,			

Course name	: Hydraulics		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Besperi, S.T., M.T. Gusta Gunawan S.T., M.T.		
Course Coordinator	: Besperi, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks

	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: In this hydraulics course, students study the flow of real liquids, flow through pipes, steady flow through pipe systems, steady flow through open channels, models and dimensional analysis.			

Course name	: Pavement Material		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Samsul Bahri, S.T., M.T. Makmun R. Razali, S.T., M.T. Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Samsul Bahri, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		

Course Description:
History of road Structure development, road pavement Structure models, various types of road pavement Structures, parts of road pavement Structures, road foundation Structure planning (base course, sub-base course, subgrade), types of road foundation layer materials and road surface layers, CBR calculation, flexible pavement thickness calculation, flexible pavement thickness calculation, and rigid pavement thickness planning.

Course name	: Traffic Engineering		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Samsul Bahri, S.T., M.T.		
	Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Samsul Bahri, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		

Course Description:
The scope of the lecture material consists of understanding traffic, its general nature, traffic flow, road capacity, parking, service levels, meetings at roads/intersections, intersection arrangements, traffic safety.

Course name	: Hydrology		
Code	:		
Semester	: 4 (Four)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Dr. Khairul Amri, S.T., M.T. Dr. Gusta Gunawan, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: This course discusses the tracing of groundwater, hydrology of groundwater, hydrology of coastal areas, mathematical models and hydrological simulations			

Course name	: Numerical Analysis
Code	:
Semester	: 4 (Four)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	:100 minutes

Teaching Staff	: Dr. Khairul Amri, S.T., M.T. Fepy Supriani, S.T., M.T.		
Course Coordinator	: Fepy Supriani, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Students are ablemastering various techniques and theoretical numerical methods to solve engineering problems; using numerical calculations and certain computer programs/software.			

5th Semester Course Identity

Course name	: Mechanized Soil Excavation		
Code	:		
Semester	: 5 (Five)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Fepy Supriani, S.T., M.T. Annisa Fitria Edriani, S.T., M.Eng.St		
Course Coordinator	: Fepy Supriani, S.T., M.T.		
Evaluation	Project Results	10%	Student Project
	Assignments/homework	15%	Group and Individual tasks
	UTS	35%	Mid-Term Test

	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Students are able to calculate the productivity of heavy equipment from various types of equipment for construction projects and explain the definition, function and operation of heavy equipment. students are able to take advantage of the latest available technology in carrying out their work.			

Course name	: Earthquake Engineering		
Code	:		
Semester	: 5 (Five)		
Number of Credits	: 3		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Agustin Gunawan, S.T, M.Eng. Yuzuar Afrizal, S.T., M.T. Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Agustin Gunawan, S.T, M.Eng.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: Structures and building materials, hierarchy of drawings, building elements detailing Steel and concrete Structures, introductory Structural concepts and analysis of horizontal and vertical system designs, loads and forces on Structures, Structural loading analysis.			

Course name	: Prestressed Concrete Structure		
Code	:		
Semester	: 5 (Five)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Yuzuar Afrizal, S.T., M.T. Ade Sri W, S.T., M.Eng., Ph.D.		
Course Coordinator	: Yuzuar Afrizal, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: 1) Basic Concepts of Prestressing, 2) Materials and Prestressing Systems, 3) Loss of Prestress, 4) Analysis and Design of Flexural Prestressed Concrete, 5) Analysis and Design of Shear S.Trength and Torque, 6) Indeterminate Prestressed Concrete Structures, 7) Camber, Deflection, and Crack Control, 8) Prestressed Tensile and Compressive Structural Components, 9) Earthquake Design of Concrete Structures Prestressing (Introduction)			

Course name	: Advanced Steel Structure
Code	:
Semester	: 5 (Five)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	:100 minutes

Teaching Staff	: Yuzuar Afrizal, S.T., M.T.; Mukhlis Islam, S.T., M.T.		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the lecture material consists of knowledge of the purpose of analysis and design of Steel Structures including beams with lateral support, beams with lateral torsional buckling, beam-columns, connections in building construction and grider plates.			

Course name	: Shallow Foundation Engineering		
Code	:		
Semester	: 5 (Five)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Mawardi, S.T., M.T.; Dr. Rena Misliniati, S.T., M.T.		
Course Coordinator	: Mawardi, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test

	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the lecture material consists of knowledge about the definition of shallow foundations, foundation design procedures that must be carried out, determination of ultimate bearing capacity and permit carrying capacity, foundation soil testing, shallow foundation bearing capacity theory based on lab data, shallow foundation bearing capacity theory based on field data, Shallow foundation settlement theory, cantilever foundation, combined footing foundation, raft/raft foundation, pile Stability and retaining wall, shallow foundation Structure, shallow foundation description.			

Course name	: Irrigation and Drainage		
Code	:		
Semester	: 5 (Five)		
Number of Credits	: 4		
Number of meetings	: 16		
Length of each meeting	:150 minutes		
Teaching Staff	: Dr. Gusta Gunawan, S.T., M.T.; Besperi, S.T., M.T.		
Course Coordinator	: Besperi, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The concept of drainage, a component in drainage system planning, urban drainage, surface and subsurface drainage, complementary			

buildings in the drainage system.

Course name	: Entrepreneurship		
Code	:		
Semester	: 5 (Five)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Dr. Gusta Gunawan, S.T., M.T.; Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: Introduction to entrepreneurship and its urgency, the character of an entrepreneur, motivation, teamwork, business opportunities for construction services (planning consultants, supervisory consultants, construction management consultants, general contractors, specialist contractors, construction industry, property) entrepreneurial risk, morals and business ethics and responsibilities social responsibility, personality development, ability to deliver ideas and academic innovation, time management, quality control, communication and leadership, as well as group/team collaboration development.			

Course name	: Coastel Engineering
Code	:

Semester	: 5 (Five)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Besperi, S.T., M.T.; Muhammad Ali, S.T., M.T.		
Course Coordinator	: Besperi, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the lecture material consists of knowledge of beach definition, ocean wave theory, wave deformation, sea level fluctuations, wave Statistics and forecasting, coastal processes, coastal Structures.			

6th Semester Course Identity

Course name	: Construction Management
Code	:
Semester	: 6 (Six)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	:100 minutes
Teaching Staff	: Fepy Supriani, S.T., M.T.

Course Coordinator	: Fepy Supriani, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: This course explains the objectives and scope of the development management process. General understanding and development of construction management and construction service industry. Definitions and terms in management in general and their relation in the field of civil engineering. Elements of implementing development, procedures for tendering, methods of preparing Work Plans and Conditions (RKS). Kinds of cost budget and its composition. Preparation of work plans, work plans, critical path methods, network planning, slack and float. Creation of bar and S. curve diagrams			

Course name	: Building Structural Design		
Code	:		
Semester	: 6 (Six)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Mukhlis Islam, S.T., M.T.; Yuzuar Afrizal, S.T., M.T.; Agustin Gunawan, S.T., M.Eng.		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	40%	Student Activity in class
	Project Results	60%	Student Project
Nature of Courses	Required		

Course Description:
The concept of the Structure of the building, the layout of the Structural elements of the plan building, the analysis of the load calculation Structure, the analysis of the modeling Structure, the analysis of the running Structure and the evaluation, the analysis of the Structure of the recap of the analysis results, the detail of the slab design, the detail of the beam design, the detail of the column design, the design of checking the Structural requirements, the detail of the design fine tuning and adjustment of requirements, standard drawing Structure drawings, Structural drawing plans, detailed Structural drawings, response.

Course name	: Bridge Structural Design		
Code	:		
Semester	: 6 (Six)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	:100 minutes		
Teaching Staff	: Mukhlis Islam, S.T., M.T.; Yuzuar Afrizal, S.T., M.T.; Agustin Gunawan, S.T., M.Eng.		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	40%	Student Activity in class
	Project Results	60%	Student Project
Nature of Courses	Required		

Course Description:
Understanding bridges, bridge components, bridge loads on superstructures, calculation of bridge Structures (vehicle floors, longitudinal beams, transverse beams, main bearers, bridge loads on substructures, bridge materials), knowledge of other kinds of short span bridges (bridge girders, composite, plate girder, hybrid, orthotropic, concrete girder and prestressed concrete girder), determination of bridge location, selection of bridge type, economical span.

Course name	: Foundation Engineering		
Code	:		
Semester	: 6 (Six)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 50 minutes		
Teaching Staff	: Mawardi, S.T., M.T. Lindung Zalbuin, S.T., M.Eng, P.hD		
Course Coordinator	: Mawardi, S.T., M.T.		
Evaluation	Participatory	25%	Student Activity in class
	Project Results	25%	Student Project
	Assignments/homework	10%	Group and Individual tasks
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
Nature of Courses	Required		
Course Description: The scope of the lecture material consists of knowledge of the definition of deep foundations and kaison foundations, theory of bearing capacity of deep foundations and kaison foundations, types of deep foundations and kaison foundations, settlement of deep foundations and kaison foundations, calculation of deep foundation Structures and kaison foundations, drawing of deep foundations and foundations. Kaison foundation.			

Course name	: Water Resources Infrastucture design
Code	:
Semester	: 6 (Six)
Number of Credits	: 2
Number of meetings	: 16

Length of each meeting	: 100 minutes		
Teaching Staff	: Besperi, S.T., M.T. Dr. Gusta Gunawan, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T.		
Evaluation	Participatory	15%	Student Activity in class
	Project Results	25%	Student Project
	UTS	30%	Mid-Term Test
	UAS	30%	Final Exam
Nature of Courses	Required		
Course Description: Irrigation System in Indonesia, Irrigation Channel Planning, Tertiary Plot Planning, Sharing / Tapping Building Planning, Crossing / Auxiliary Building Planning, Irrigation Main Building, Weir Stability Calculation.			

Course name	: Harbor Engineering		
Code	:		
Semester	: 6 (Six)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Besperi, S.T., M.T.		
Course Coordinator	: Besperi, S.T., M.T.		
Evaluation	Participatory	15%	Student Activity in class
	Project Results	25%	Student Project
	UTS	30%	Mid-Term Test
	UAS	30%	Final Exam
Nature of Courses	Required		

Course Description: The scope of the lecture material consists of knowledge of port definitions, port planning, wind, tides and waves, shipping lanes, breakwaters, piers, fenders and mooring equipment, onshore port facilities and shipping guidance tools.

Course name	: Water Resources Development		
Code	:		
Semester	: 6 (Six)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Dr. Gusta Gunawan, S.T., M.T. Dr. Khairul Amri, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T.		
Evaluation	Participatory	15%	Student Activity in class
	Project Results	25%	Student Project
	UTS	30%	Mid-Term Test
	UAS	30%	Final Exam
Nature of Courses	Required		
Course Description: Water resources, water potential, hydrological cycle, water resource problems, water resource infrastructure systems, flood control systems, soil flow systems and water resource conservation management, clean water systems			

Course name	: Airport Engineering
Code	:
Semester	: 6 (Six)
Number of Credits	: 2

Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Samsul Bahri, S.T., M.T. Makmun R. Razali, S.T., M.T. Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Samsul Bahri, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Student Project
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: Airport history, airport features, site selection and accessibility, regulations airport legislation and Standardization, aircraft characteristics, runway geometry, taxiway geometry, exit locations taxiway, gate position, apron area, air side capacity, and airport navigation aids.			

Course name	: Research methodology
Code	:
Semester	: 6 (Six)
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	: 100 minutes
Teaching Staff	: Dr. Khairul Amri, S.T., M.T. Hardiansyah, S.T., M.T. Lindung Zalbuin Mase, S.T., M.T., Ph.D. Ade Sri Wahyuni, S.T, M.Eng., Ph.D.

Course Coordinator	: Ade Sri Wahyuni, S.T, M.Eng., Ph.D.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments/homework	15%	Student Project
	UTS	35%	Mid-Term Test
	UAS	40%	Final Exam
Nature of Courses	Required		
Course Description: The basics of scientific research methods, steps of scientific research, preparation of proposals, implementation of research, preparation of research reports.			

7th Semester Course Identity

Course name	: Engineering Economics		
Code	:		
Semester	: 7 (Seven)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Annisa Edriani, S.T., M.Eng.St. Fepy Supriani, S.T., M.T.		
Course Coordinator	: Fepy Supriani, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Project Results	40%	Student Project
	UTS	25%	Mid-Term Test
	UAS	25%	Final Exam
Nature of Courses	Required		

Course Description:
In this course, students learn about economic principles, cash flow, interest, the effect of time on the value of money, investment feasibility analysis, investment feasibility comparison, depreciation analysis, break-even point, and sensitivity, as well as termination and replacement analysis.

Course name	: Hydropower Infrastructure		
Code	:		
Semester	: 7 (Seven)		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 50 minutes		
Teaching Staff	: Dr. Gusta Gunawan, S.T., M.T. Besperi, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments / homework	20%	Student Project
	UTS	35%	Mid-Term Test
	UAS	35%	Final Exam
Nature of Courses	Required		
Course Description: This course discusses the concept of converting water energy into electrical energy, management and design of supporting infrastructure.			

Course name	: Profession ethics
Code	:
Semester	: 7 (Seven)

Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 50 minutes		
Teaching Staff	: Fepy Supriani, S.T., M.T. Dr. Khairul Amri, S.T., M.T.		
Course Coordinator	: Fepy Supriani, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Assignments / homework	20%	Student Project
	UTS	35%	Mid-Term Test
	UAS	35%	Final Exam
Nature of Courses	Required		
Course Description: This course provides knowledge about the importance of professional ethics in everyday life, especially in the world of work related to the field of Engineering.			

Elective Courses Identity

Course name	: Composite Steel Structure		
Code	: TSS-411		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	5%	Student Activity in class
	Project Results	50%	Student Project

	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Response	15%	
Nature of Courses	Required		
Course Description: In this course, S.Tudents learn about Composite Steel beams, slabs, columns and frames, design. Properties of shear connection, partial interaction, slip effect on S.Tress, longitudinal shear in composite slab. Properties of shear connection, partial interaction, slip effect on Stress, longitudinal shear in composite slab. Nonsway frame composite design			

Course name	: Railway Engineering		
Code	: TST-411		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Samsul Bahri, S.T., M.T. Makmun R. Razali, S.T., M.T. Dr. Hardiansyah, S.T., M.T.		
Course Coordinator	: Samsul Bahri, S.T., M.T.		
Evaluation	Participatory	10%	Student Activity in class
	Project Results	25%	Student Project
	UTS	20%	Mid-Term Test
	UAS	20%	Final Exam
	Response	25%	
Nature of Courses	Required		

Course Description:
In this course, students learn about rail, bearing, rail fastening, ballast, sub grade and railways, Horizontal and vertikal alingement on railways planning, Station design, Operating and safety systems on railways, Modern railways And rail road maintenance

Course name	: Dam Engineering		
Code	: TSA-411		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Dr. Gusta Gunawan, S.T., M.T. Dr. Khairul Amri, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T..		
Evaluation	Participatory	20%	Student Activity in class
	Project Results	25%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Tasks	25%	Group and Individual task
Nature of Courses	Required		

Course Description:
In this course, S.Tudents learn about Irrigation channel planning procedure, calculating irrigation channel dimensions, Types of fixed and moving weirs, selection of bending types, elevation heights. The effective width of the dam required, calculating the flood water, determining the guard height and the height of the pillar upstream of the bending, bending foundation, calculating the uplift pressure under the foundation, calculating the Stability against seepage.

Course name	: Soil Improvement Engineering		
Code	: TSG-412		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Ir. Mawardi, M.T. Dr. Rena Misliniyati, S.T., M.T. Lindung Zalbuin Mase, S.T., M.T., Ph.D.		
Course Coordinator	: Ir. Mawardi, M.T.		
Evaluation	Participatory	20%	Student Activity in class
	Project Results	25%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Tasks	25%	Group and Individual task
Nature of Courses	Required		
Course Description: In this course, Students learn about improvement technology concept, Mechanical dan chemical soil improvement methods or heavy equipment to change the soil condition, methods used to accelerate consolidation. Soil improvement development method.			

Course name	: River Engineering
Code	: TSA-421
Semester	: elective courses
Number of Credits	: 2
Number of meetings	: 16
Length of each meeting	: 100 minutes

Teaching Staff	: Dr. Gusta Gunawan, S.T., M.T. Dr. Khairul Amri, S.T., M.T.		
Course Coordinator	: Dr. Gusta Gunawan, S.T., M.T.		
Evaluation	Participatory	20%	Student Activity in class
	Project Results	25%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Tasks	25%	Group and Individual task
Nature of Courses	Required		
Course Description: In this course, Students learn about River type problem, analysis of hydraulic, hydrological and morpgological for solving river cases.			

Course name	: Retaining Wall and Slope S.Tabilization		
Code	: TSG-421		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Teaching Staff	: Ir. Mawardi, M.T. Dr. Rena Misliniyati, S.T., M.T. Lindung Zalbuin Mase, S.T., M.T., Ph.D.		
Course Coordinator	: Ir. Mawardi, M.T.		
Evaluation	Participatory	5%	Student Activity in class
	Project Results	10%	Student Project
	UTS	35%	Mid-Term Test

	UAS	35%	Final Exam
	Tasks	15%	Group and Individual task
Nature of Courses	Required		
Course Description: In this course, Students learn about Lateral earth pressure, Rankine theory, Landslide field at passive earth pressure and Turap, Anchored sheet pile, Free end and fixed end method.			

Course name	: Dynamics of Structures		
Code	: TSS-421		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	20%	Student Activity in class
	Project Results	25%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Tasks	25%	Group and Individual task
Nature of Courses	Required		
Course Description: In this course, Students learn about Characteristics and characteristics of the dynamics of civil Structures, Analysis of the response of the MDOF and SDOF Structure, seismic dynamic load analysis are in accordance.			

Course name	: Legal Aspects and Introduction to Project Administration
Code	: TSM-422

Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Course Coordinator	: Fepy Supriani, S.T., M.T.		
Evaluation	Participatory	20%	Student Activity in class
	Project Results	25%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Tasks	25%	Group and Individual task
Nature of Courses	Required		
Course Description: In this course, Students learn about Administration and contract, organization, Default, sanctions, claims and compensation, Disputes and settlements in construction law.			

Course name	: Structural Performance Assesment and Evaluation		
Code	: TSS-422		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	5%	Student Activity in class
	Project Results	50%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam

	Response	15%	Building Structural reliability assessment practice test
Nature of Courses	Required		
Course Description: In this course, Students learn about the cause of Structural defect, material test (concrete, Steel dan rebar), load test, quick assessment, prosedure and analysis of Structural reliability			

Course name	: Construction and supervision methods of buildings		
Code	: TSS-423		
Semester	: elective courses		
Number of Credits	: 2		
Number of meetings	: 16		
Length of each meeting	: 100 minutes		
Course Coordinator	: Mukhlis Islam, S.T., M.T.		
Evaluation	Participatory	5%	Student Activity in class
	Project Results	50%	Student Project
	UTS	15%	Mid-Term Test
	UAS	15%	Final Exam
	Response	15%	Building Structural reliability assessment practice test
Nature of Courses	Required		
Course Description: In this course, students learn about construction method, standard operational procedure in construction supervision, occupational safety and health management system.			