



STUDENT HANDBOOK ACADEMIC YEAR 2020/2021



DEPARTMENT OF CIVIL AND
ENVIRONMENTAL ENGINEERING



Department of Civil and Environmental Engineering

**Faculty of Engineering
University of Ruhuna
Hapugala, Galle, Sri Lanka**

**Undergraduate Student Handbook
Academic Year 2020/2021**

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1 Introduction to Department of Civil and Environmental Engineering

1.1 Vision and Mission of the Department

The vision of the Department is to become an outstanding, well-recognised academic centre of excellence in Civil and Environmental Engineering in the country.

It is the mission of the Department, to produce highly skilled, dedicated and knowledgeable civil and environmental engineers who will excel in their chosen careers.

1.2 Aims

The Department intends to produce graduates with necessary skills and knowledge to handle the real-world issues in the field of Civil and Environmental Engineering. Towards this objective the department aims to;

- ❖ Provide advanced knowledge in Civil and Environmental Engineering related subjects.
- ❖ Expose students to laboratory techniques, use of laboratory and field equipment during their practical programmes.
- ❖ Provide knowledge on Civil and Environmental Engineering design concepts and applications through the well-organized design sessions.
- ❖ Expose students to different civil and environmental engineering practices and to allow them to gauge the true scale of the civil and environmental engineering projects through field visits.
- ❖ Provide opportunities for students to work independently, identify problems, design experiments, use analytical and statistical tools to process information, present, report and defend their results.
- ❖ Expose the students to real civil engineering projects and research through the surveying camp, comprehensive design project, and undergraduate research and allowing them to apply the theory that they learn into practice and develop systematic solutions for complex civil engineering problems.

1.3 Programme Educational Objectives

The Department, in consultation with Industrial Consultative Committee (ICC) and Ruhuna Alumni Association of Civil and Environmental Engineering (RACEE) has developed six programme educational objectives to support the program objectives. Program Educational Objectives (PEOs) explained below is the expected outlook of graduates after five years from their graduation.

- ❖ Have the knowledge, skills and tools needed to solve complex civil and environmental engineering problems.
- ❖ Are aware of environmental issues associated with air, land and water systems, as well as concerns on sustainability, environmental health and safety issues.
- ❖ Are capable of working efficiently with the others in their community, through; effective communication; public relationship and leadership skills.
- ❖ Have an understanding of ethical and professional responsibilities of civil and environmental engineers and the impact that their engineering solutions will have on the environment and society.
- ❖ Are willing to appreciate the value of a broad-based civil and environmental engineering education, and engage in continuous professional development through lifelong learning, higher education and memberships in professional bodies.
- ❖ Are competent in management concerning economics, business, decision making and human resource management.

These educational objectives are promoted and supported by the departmental community of students, faculty and staff, characterised by integrity and by respect for individuals, society, the environment and the engineering profession.

1.4 Programme Outcomes

To achieve PEOs of the department, in consultation with the Institution of Engineers, Sri Lanka (IESL) accreditation requirements, the department has defined Program Objectives (POs) of their undergraduate program as follows. It is expected that the graduates possess these attributes at the time of their graduation.

PO1	Apply knowledge of mathematics, basic sciences and engineering fundamentals to the analysis of complex engineering problems
PO2	Identify, formulate, research literature, conduct investigations and solve complex engineering problems to provide valid conclusions.
PO3	Design systems, components or processes that meet specified needs.
PO4	Conduct investigations of complex problems using research-based knowledge and research methods.
PO5	Create, select and apply appropriate techniques, resources, and modern engineering and IT tools to complex engineering activities
PO6	Assess societal, health, safety, legal, cultural and environmental issues related to professional engineering solutions
PO7	Demonstrate broad knowledge of sustainable development concepts and practices required for dealing with contemporary issues related to professional engineering practice.
PO8	Demonstrate broad knowledge of ethical responsibilities and professional standards.
PO9	Demonstrate ability to function effectively as an individual and in multidisciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member.
PO10	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
PO11	Demonstrate broad knowledge of management and business practices, including financial management, risk and change management.
PO12	Engage in independent and lifelong learning in the broad context of technological change.

1.5 Career Opportunities

Civil and Environmental Engineering graduates are well sorted after by both public and private sector enterprises in the field of civil engineering and associated services in almost all sub disciplines; buildings, roads, bridges, water supply, sewerage, coastal and maritime etc. Following are some leading public and private organizations where our graduates are employed.

Name of the organization	Ownership	Field of specialization
Department of Buildings	Public	Buildings
Central Engineering Consultancy Bureau (CECB)	Public	Buildings, bridges, roads, irrigation, geotechnical investigation, coastal
State Development and Construction Corporation (SD&CC)	Public	Construction of buildings, bridges, tunnels
Irrigation Department	Public	Regulation and control of inland water
National Water Supply and Drainage Board (NWS&DB)	Public	Water supply, wastewater treatment
Provincial and Municipal Councils	Public	Public health, solid waste management, buildings, bridges
Road Development Authority (RDA)	Public	Development and maintenance of national highway
Ministry of Agriculture	Public	Agriculture related infrastructure developments
Sri Lanka Ports Authority	Public	Development and maintenance of commercial ports

International Construction Consortium Limited (ICC)	Private	Construction of infrastructure
Lanka Hydraulics Institute (LHI)	Private	Coastal and Hydraulics Engineering
Maga Engineering (Pvt) Limited	Private	Buildings, roads, bridges
Lakdhanavi Ltd.	Private	Power Plant Construction
Nawaloka Construction Company (Pvt.) Ltd.	Private	Buildings, roads, bridges
Finex Engineering (Pvt) Ltd.	Private	Waterproofing, geochemical Solutions
Sanken (Pvt) Ltd.	Private	Buildings
Central Engineering Services (Pvt) Ltd.	Private	Buildings
Home Lands	Private	Real Estate
Civil and Structural Engineering Consultants (Pvt) Limited	Private	Building construction
LEGO International (Pvt) Ltd	Private	Buildings, Bridges, Water Supply
Access Engineering (Pvt) Limited	Private	Building, bridges, roads
ECO International Engineering Consultants	Private	Buildings, Infrastructure Development

2 Overview of Department of Civil and Environmental Engineering

2.1 History

From the beginning of the Faculty of engineering back in 1999, the Department of Civil and Environmental Engineering has been the largest academic department in the Faculty with respect to students and staff members. The department has commenced its postgraduate research degree programs (PhD and MPhil) in 2008 and postgraduate taught (MEng and PG Diploma) programs in 2012.

The Department currently has the full-time service of four professors, sixteen senior lecturers, which makes it the strongest academic department in the Faculty of Engineering. To deliver the academic program more effectively, the department is arranged under four main sub divisions.

- ❖ Building and Structural Engineering
- ❖ Geotechnical and Geo-environmental Engineering
- ❖ Infrastructure Development and Management
- ❖ Water and Environmental Engineering

2.2 Building and Structural Engineering

The Building and Structural engineering division has two well equipped laboratories namely; Structural Mechanics laboratory and Building Materials and Construction laboratory.

By conducting modules, laboratory experiments and other relevant programs, building and Structural Engineering division contributes to develop the professional career of the undergraduate students in the field of structural Engineering. Teaching, consultancy services and research under this division is conducted under supervision of three professors and three senior lecturers qualified at postgraduate level from leading universities in the Japan, United Kingdom and Australia.

The members of academic staff of the building and structural engineering division are actively involved with the industry, and professional institutes like the Society of Structural Engineers Sri Lanka (SSESL) and the Institution of Engineers Sri Lanka (IESL). The division contributes to the continuing professional development of the practicing Civil and Structural engineers in a

major way by conducting postgraduate programs and short courses on specialized topics as and when required.

Areas of research (selected): Improvement to serviceability limit state performance of reinforced concrete, Use of advanced composite in civil in repair and retrofitting work, Concrete material research, Use of natural fibers as composite material in fiber reinforced polymer applications , Retrofitting of existing masonry building for dynamic Loads induced by natural hazards, Condition assessment, damage detection, life cycle evaluation, repair and retrofitting of existing bridges in Sri Lanka due to environmental impacts and Application of high strength cold-formed steel sections in steel structures.

2.3 Geotechnical and Geo-environmental Engineering

The Geotechnical and Geo-environmental Engineering division has a well-equipped laboratory capable of conducting most of the standard laboratory tests related to Soil Mechanics and Rock Mechanics. It also has the equipment needed to conduct number of field tests.

The division consists of two senior lecturers with postgraduate qualifications obtained from Universities in Japan, Canada and Thailand. They have gained experience in research and consultancy through numerous industrial projects in Sri Lanka and overseas.

Areas of research (selected): Ground improvement, Innovative earth retention systems, cost effective liners for landfills, Slope stability of waste dump sites, Slope stabilization using soil nails, Unsaturated soil.

2.4 Infrastructure Development and Management

The Infrastructure Development and Management division focuses on the planning, design and construction management of infrastructure facilities, and Surveying and Transportation Engineering areas. The division is served by five academics with postgraduate qualifications obtained from foreign universities. Surveying and Transportation Engineering Laboratory provides the basic research infrastructure for the division.

Introduction of relevant software training sessions such as MS Project, BIM are also conducted to enhance the competence of students to work in current construction industry. Lessons conducted by the division in the areas of traffic engineering, highway engineering, transportation planning and economics ensure that the students are equipped with the theoretical

knowledge and the necessary know-hows in the areas of traffic and highway engineering.

The division is also responsible for the all surveying modules which include conducting lectures, practical sessions as well as the organization and execution of the outbound surveying work camp based on real industrial requirements.

Areas of research (selected): Integrated project management system, Investigation of bidding and procurement methods, Effects of road geometry on traffic accidents, Highway design, BIM, Lean construction, Risk Analysis

2.5 Water and Environmental Engineering

Water and Environmental Engineering division provides a platform for engineering students to become skilled at environmental and water resources engineering areas. Division's expertise ranges from fluid mechanics to water resources planning and, from environmental pollution assessment to treatment processes. The division of Water and Environmental Engineering is well-resourced with one professor and five senior lecturers who have obtained postgraduate qualifications from foreign universities. The division has two well-equipped laboratories namely Environmental Engineering and, Hydraulics and Coastal Engineering.

Practical and demonstration sessions of Water Engineering related modules (Fluid mechanics, Hydraulic engineering, Hydrology, Coastal engineering, Irrigation engineering) of the undergraduate study programme are conducted in the Hydraulics and Coastal engineering laboratory while the Environmental Engineering laboratory takes the responsibilities to carry out many of the standard water and wastewater quality tests under undergraduate modules. The division has established links with the industry and Central Environmental Authority, Sri Lanka and performs regular consultancy work such as Environment Impact Assessment apart from many routine experimental works in relation to environmental conditions as a Central Environmental Authority accredited laboratory.

Areas of research (selected): Innovative methods of restoring polluted aquatic ecosystems, Solid waste management, Mathematical modelling of aquatic ecosystems, Hydrological modeling, Flood control, Tsunami and flood disaster management and Waves and Hydrodynamic modelling.

2.6 International Partnerships and Collaborative Studies

The department has been able to expand its horizons by starting collaborative work with foreign universities through participating in different research collaborative work and, exchange programs for students and academic staff members. Through these programs, the department has been able to get a better exposure to the international research and academic environment. The department disseminates the outcomes of research work to the international arena by publishing in reputed local and foreign Journals. In addition, the annual international research symposium “Advances in Civil and Environmental Engineering Practices for Sustainable Development” (ACEPS) organised by the department provides a platform to present sustainability-oriented research in the region. The department is having international partnerships and collaborations with following universities and institutes.

Royal Melbourne Institute of Technology (RMIT) University, Australia

University of Stavanger, Norway

Malmo University, Sweden

European and Asian Infrastructure Advantage Project, Salford University, UK

Saitama University, Japan

University of Yamanashi, Japan

Czech University of Life Science, Czech Republic

University of Tokyo, Japan

Toyama Prefectural University, Japan

Thammasat University, Thailand

Asian Network for Energy and Environment (Anergy), Incheon National University, South Korea

Toyo University, Japan

Ochanomizu University, Japan

Indian Institute of Technology (IIT) Gandhinagar, India

Northumbria University, New Castle

Japan Tezpur University, India

Kanazawa University, Japan

Ceylon Steel Cooperation Ltd.

Siam City Cement Ltd.

Irrigation Department.

2.7 Academic Staff

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Prof. G.S.Y. De Silva

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Chair Professor



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Email: sudhira@cee.ruh.ac.lk

Division: Building and Structural Engineering

Research Interests: Seismic vulnerability assessment and retrofitting of existing buildings, Durability of Concrete Structures, Application of Innovative and Sustainable Materials in Construction

Professor



Prof. (Mrs.) G.H.M.J. Subashi

Ph.D. (Saitama), PG. Dip (Strut), B.Sc.Eng.(Hons.) (Moratuwa), C.Eng., MIE (SL)

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Division: Building and Structural Engineering

Research Interests: Human responses to vibration, Human-structure dynamic interaction, Sustainable building materials, Noise and Vibration control techniques.

Professor



Prof. G.G.T. Chaminda

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Email: tusharac@cee.ruh.ac.lk

Division: Hydraulics and Environmental Engineering

Research Interests: Water and wastewater engineering, Micro-pollutants in water environment.

Professor



Prof. K.S. Wanniarachchi

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Division: Building and Structural Engineering

Research Interests: Design of light steel structures using cold-formed steel section, Current status of existing steel bridges along coastal belt in Sri Lanka.

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Division: Building and Structural Engineering

Research Interests: Alternative reinforcing material & their interaction with concrete, Construction innovation, design of innovative/low-cost structures.

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Division: Geotechnical Engineering

Research Interests: Soft ground treatment, Foundation design, Liquefaction, Development of clay liner using local materials, Utilization of waste material for road/highway pavement construction.

Senior Lecturer**Dr. (Mrs.) W.K.C.N. Dayanthi**

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Division: Hydraulics and Environmental Engineering

Research Interests: Water reclamation and reuse, Groundwater, Surface water and soil pollution, Unsaturated zone-modelling, Solid waste management, Water quality modelling, Wastewater treatment and disposal.

Senior Lecturer**Dr. (Mrs.) T.N. Wickramaarachchi**

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Division: Hydraulics and Environmental Engineering

Research Interests: Irrigation Water Management, Hydrologic Modelling and Geoinformatics Applications, Water Quality Modelling, Climate Change, Land use Dynamics

Senior Lecturer**Dr. S.N. Malkanthi**

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Division: Infrastructure Development & Management

Research Interests: Integrated project management system, Investigation of bidding and procurement methods.

Senior Lecturer**Dr. T. M. Rengarasu**

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Division: Infrastructure Development & Management

Research Interests: Transportation safety, Effects of road geometry on traffic accidents, Highway design.

Senior Lecturer**Dr. (Mrs.) Champika Ellawala**

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Division: Hydraulics and Environmental Engineering

Research Interests: Behaviour of aquatic ecosystems, Resource use management, Water and wastewater treatment technologies.

Senior Lecturer**Dr. (Mrs.) B.M.L.A. Basnayake**

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Division: Hydraulics and Environmental Engineering

Research Interests: Hydro informatics, Data driven modelling, Data assimilation, Flood modelling and forecasting, Hydrological modelling.

Senior Lecturer**Dr. W.M.R.K.T.W. Bandara**

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Division: Hydraulics and Environmental Engineering

Research Interests: Sewerage treatment, Anaerobic processes, Water reclamation technologies, Solid waste management.

Senior Lecturer**Dr. J.M.R.S. Appuhamy**

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Division: Building and Structural Engineering

Research Interests: Structural health monitoring of aged infrastructures, Earthquake engineering and seismic retrofitting of structures, Sustainable construction materials, Disaster mitigation.

Senior Lecturer**Dr. Vidura Vithana**

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Division: Hydraulics and Environmental Engineering

Research Interests: Coastal and maritime civil engineering, Coastal and river modelling, Environmental fluid mechanics.

Senior Lecturer**Dr. (Mrs.) S.W. Seneviratne**

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Division: Infrastructure Development & Management

Research Interests: Project Management, Disaster Management, Urban Environmental Management, Sustainable Construction

Senior Lecturer



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Division: Infrastructure Development and
Management

Research Interests: Project management,
Construction waste management, Lean construction
and Building Information Modelling (BIM).

Senior Lecturer



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Division: Geotechnical Engineering

Research Interests: Geo-mechanics of methane
hydrate bearing offshore sediments of South-East-
Asian region, Geo-hazards mitigation and
management.

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3 Equipment and Facilities

3.1 Building and Structural Engineering Division

3.1.1 Building and Construction Laboratory

3.1.1.1 Personnel in Charge

Lecturer-in-charge	: Dr. H. P. Sooriyaarachchi
Technical officer-in-charge	: Mr. T.G.P. Wasantha Kumara
Laboratory Attendant	: Mr. N.P. Ashoka

3.1.1.2 Testing Facilities

Investigation	Equipment
Air entrainment for fresh concrete	Air entrainment Meter
Compaction Factor for fresh concrete	Compaction Factor Apparatus
Field testing involving USPV, Rebound hammer etc.,	USPV Apparatus and Rebound hammer
Fineness for cement	Vicat Apparatus
Flexural testing for prisms	Flexural Testing Machine
Flexural testing for wall panels	Flexural Testing Machine
Kerbs and other precast elements testing in flexure	Flexural Testing Machine
Mix Design (03 Nos. Trail mixers)	Concrete mixer
Re-bend Test	Steel Property Testing Machine
Setting time for fresh concrete	Air entrainment Meter
Setting time for cement	Vicat Apparatus
Slump Cone Test for fresh concrete	Slump Cone
Soundness for cement	Vicat Apparatus
Splitting tensile test	Compression Testing Machine
Testing concrete cubes and cylinders	Compression Testing Machine
Testing wall panels	Compression Testing Machine
Yield stress, Ultimate stress, Elongation at braking, etc.,	Steel Testing Apparatus

3.1.1.3 Equipment



Concrete Mixer



Concrete Cutting Machine



Concrete Grinder



Compression Testing Machines



Cube Testing Machine

3.1.2 Structural Mechanics Laboratory

3.1.2.1 Personnel in Charge

Lecturer-in-charge

: Prof. K.S.Wanniarachchi

Technical officer-in-charge

: Mr.T.G.P. Wasantha Kumara

Attendant

: Mr. M.M.I. Vipula Shantha

3.1.2.2 Testing Facilities

Investigation	Equipment/ Software
Assessment of Environmental Noise Levels	Sound testing
Measuring Air Blast over Pressure and Ground Vibration in Blasting Activities	Seismograph
Yield Stress, Ultimate Stress, Elongation at Braking, Bending test etc.	Universal Testing Machine

3.1.2.3 Equipment



Strut Testing Apparatus



Universal Testing Machine



Impact Testing Machine



Seat Pad Accelerometer and Vibration Meter



Noise level Meter



Tensometer and Torsion Test Apparatus

3.2 Geotechnical Engineering Division

3.2.1 Geotechnical Engineering Laboratory

3.2.1.1 Personnel in Charge

Lecturer-in-charge	: Dr. Anuruddhika Jayasinghe
Technical officer-in-charge	: Ms. Sandhamali Nandasena
Laboratory Attendant	: Mr. N.P.Ashoka

3.2.1.2 Testing Facilities

Testing Facilities	Equipment
Classification Tests	
Hydrometer Analysis	Hydrometer
Liquid Limit and Plastic Limit	Casagrande apparatus
Sieve Analysis	Sieve set with sieve shaker
Specific Gravity	Density bottle
Compaction Tests	
CBR Value – Soaked/Unsoaked	CBR test apparatus
Proctor Compaction Test(Standard Modified)	Proctor Compaction apparatus
Sand Cone Test (Insitu Density Test)	Sand Cone Apparatus
Cone Cutter Test (Insitu Density Test))	Core Cutter Apparatus
Compressibility and Permeability	
One dimensional consolidation test –	Oedometer test apparatus
Permeability test	Constant head apparatus/Falling Head Apparatus
Strength Tests	
Direct shear test	Direct shear apparatus
CD/CU/UU test	Triaxial machine
Aggregate/Rock Tests	
Aggregate Impact Value (AIV) test	Aggregate Impact Value apparatus
Bulk density, specific gravity and water absorption	Buoyancy balance test apparatus
Flakiness Index test	Flakiness Gauges

Loss Angeles Abrasion Value (LAAV)	Loss Angeles Abrasion apparatus
Point Load Index test	Point Load test apparatus
Slake Durability test	Slake Durability test apparatus

3.2.1.3 Equipment



Automated Consolidation Test Apparatus



Los Angeles Abrasion Value Test Apparatus



Automated Triaxial Test Apparatus



CBR Test Machine



Automated Direct Shear Test Apparatus



Automated Proctor Compaction Apparatus

3.3 Infrastructure Development and Management Division

3.3.1 Surveying and Transportation Engineering Laboratory

3.3.1.1 Personnel in Charge

Lecturer-in-charge : Dr. Terrance M. Rengarasu
 Technical officer-in-charge : Ms. Sandhamali Nandasena
 Laboratory Attendant : Mr. M.M.I. Vipula Shantha

3.3.1.2 Testing Facilities

Investigation	Equipment/ Software
Project Planning Techniques	Microsoft Project
Geo-referencing and Geo coding	Global Positioning Sytem device and related software
Data Base management and Transport Planning work	Geographic Information System related software
Traffic Studies - Traffic counts, Turning Movement Counts	Manual and Automatic Traffic counters, Television and DVD player
Streetscape Analysis	Digital Camera, Digital Voice Recorder
Visual Impact Assessment	Digital Camera, Digital Voice Recorder

Surveying

Investigation	Equipment
Aerial map reading	Mirror Stereoscope
Angle measurements, levelling, tacheometric surveying	Total Station
Field surveying - Tape and offset survey and plotting	Arrows, Circular level, Measuring wheel, Tapes, Bow and beam compasses, Protractor, Double prisim optical square
Field Surveying -Levelling	Tilting level, Staffs/tapes,
Field Surveying - Tachometric Survey	Theodolite(manual and digital), Staff

Field Surveying- Traverse	Theodolite(mannual and digital), Staff, Tapes
Observing magnetic north and approximate slope	Compass with clinometer
Plane table survey	Alidade set
Star observation and surveying at night	Illuminator
Measuring the area of maps	Planimeter

3.3.1.3 Equipment



GPS Instrument



Levelling Instrument



Marshall Testing Machine



Skid Resistance Apparatus



Total Station and Target



Rammer and Compaction Pedestal

3.4 Water and Environmental Engineering Division

3.4.1 Environmental Engineering Laboratory

3.4.1.1 Personnel in Charge

Lecturer-in-charge	: Dr. W.M.K.R.T.W. Bandara
Technical officer-in-charge	: Ms. D.A.M. Nimal Shanthi
Laboratory Attendant	: Mr. B.G.N. Ashoka

3.4.1.2 Testing Facilities

Testing Facilities	Equipment
Conductivity/ Salinity/ Total Dissolved Salt	Conductivity/TDS/Salinity Meter (Multi-Probe meter)
pH	pH Meter
Temperature	Thermometer
To bake out the moisture, heating up to high temperatures 550°C	Muffle Furnace
To conduct extraction/ distillation under safe environment	Fume Hood
Total Solids	Evaporating bath
Total Suspended Solids/ Total Dissolved Solids	Vacuum Filter
Turbidity	Turbidity meter
Total Alkalinity, dissolved oxygen etc	Titration equipment
Total phosphorous, total Nitrogen, chlorophyll etc	UV Spectrophotometer
Dissolved Oxygen	Dissolved Oxygen Meter
Chemical Oxygen Demand	Kjeldhal Apparatus
Oil and Grease	Separatory Funnel
Total and Faecal Coliform	Millipore Kit/Glassware/Membrane Filtration apparatus
Steaming and Sterilising	Autoclave
Volatile organic substances	Gas Chromatograph

3.4.1.3 Equipment



Atomic Absorption Spectrophotometer



Jar Test Apparatus



Spectrophotometer



Fume Hood



BOD5 Track Apparatus and Incubator



Bio Safety Cabinet

3.4.2 Hydraulics and Coastal Engineering Laboratory

3.4.2.1 Personnel in Charge

Lecturer-in-charge : Dr. T.N. Wickramaarachchi
 Technical officer-in-charge : Ms. D.A.M. Nimalshanthi
 Laboratory Attendant : Mr. B.G.N.Ashoka

3.4.2.2 Testing Facilities

Testing facilities	Equipment/ Software
Measurement of flow head loss through pipes, fittings and accessories	Pipe friction apparatus
Measurement of hydrostatic pressure	Hydraustatic pressure apparatus

Demonstration of rainfall-runoff, carrying out pumping tests	Hydrology study system
Demonstration and testing of water jets	Impact of a jet apparatus
Demonstration of formation of streamline patterns around two dimensional objects	Laminar flow table
Demonstration and pressure monitoring in free and forced vortices	Free and forced vortex
Hydraulic and Hydrologic Modelling	Sobek, Mike, Hec, iRIC, ArcGIS
Demonstration of stability and measurement of metacentric height of a pontoon	Metacentric height apparatus
Demonstration of open channel flow and testing of different hydraulic structures	Multipurpose teaching flume
Testing of hydraulic behaviour of different orifices	Orifice and jet apparatus
Testing of pump characteristics when connected in series and in parallel	Pump system apparatus
Demonstration of pipe surge due to sudden closure and opening of valves	Pipe surge apparatus
Demonstration of Pelton wheel turbine	Pelton turbine apparatus
Monitoring and recording of rainfall, temperature, atmospheric pressure, wind	Weather station

3.4.2.3 Equipment



Tilting Flume



Fluid Friction Apparatus



Hydrology Study System Apparatus



Pelton Turbine Apparatus



ArcGIS, HEC HMS and IRIC Software



River Flow Simulator

4 Civil and Environmental Engineering Degree Programme for Undergraduates

4.1 Structure of the Degree Programme

Degree programme	: Bachelor of the Science of Engineering Honours
Abbreviated title	: BScEngHons
SLQF	: 6
Field of Specialisation	: Civil and Environmental Engineering
Course duration	: 4 years - full time
Medium of instruction	: English
Annual ceiling	: 125 students (2022 onwards)
Minimum credit requirement	:

- A minimum total of 150 credits that comprising all the core modules, a number of technical elective (TE) modules, General elective (GE) modules and Industrial training satisfying the conditions as relevant.
- Technical elective modules and general elective modules must be chosen from the list offered by the department satisfying the accreditation requirements for an engineering degree as specified by Institution of Engineers, Sri Lanka (IESL).
- Completion of the development program, Industrial training any other mandatory requirements prescribed by the faculty board with approval of the senate.
- A minimum overall grade point average (OGPA) of 2.00.
- A residence requirement of four academic years as a duly registered full time student of the university.

4.2 Coordinators for Specialized Activities

Academic advisers	: Each student will be allocated with a permanent staff member
Engineering Education Centre	: Mr.Saman De Silva
Surveying work camp	: Dr. W.M.R.K.T.W. Bandara
Comprehensive Design Project	: Dr. J.M.R.S. Appuhamy

Undergraduate Research Project	: Dr. S.W.Seneviratne
Safety Coordinator	: Dr. Sujeewa Wimalasena
Student Consultative Committee	: Dr. Anuruddhika Jayasinghe
Industrial Consultative Committee	: Dr. Champika Ellawala
Civil and Environmental Engineering Society (CEES)	: Dr. W.M.R.K.T.W. Bandara (Advisor) : Dr. Anuruddhika Jayasinghe (Senior Treasurer)
Student Councilors	: Dr. Ruwan Appuhamy : Dr S.W. Seneviratne : Dr. Anuruddhika Jayasinghe

4.3 Examinations and Assessment

All modules are assessed by continuous assessments followed by a final examination. Different modules will have different weights of continuous assessment component. Students should have a minimum of 80% class attendance to be eligible to sit for the final examination of the module and 50% of the continuous marks to pass the module. Students with valid reasons like illness may provide a medical certificate from a recognised medical officer as mode of excuse in accordance with the relevant guidelines stipulated by relevant format stipulated by the university administration. Guidelines and requirements for continuous assessment components of the module will be given by the coordinator of each module at the beginning of the module.

4.4 Curriculum Development of the Department

Curriculum development at the department can be essentially considered as a bottom up approach and is conducted after due consultation with all the stakeholders involved especially after gauging the requirement of the industry. Changing requirements of the Employers and the changing requirement of the industry are brought into the curriculum development activities based interviews conducted on employers, graduates with more than 5 years of experience and fresh graduates. Student consultation and consultation of specially appointed Industrial Consultative Committee (ICC) are the other two

pillars of the consultative process involved in the curriculum development process. Department usually revises the curriculum and assessment criteria every five years. Internal quality assurance cell is entrusted with processing all the suggestions and take the decisions on curriculum development activities giving feedback to stakeholders on the revisions of curriculum. Complete overhaul of curriculum development process making it a bottom up process was first initiated in the year 2013 along with the inception of Outcome Based Education (OBE). The next major curriculum revision is due in 2018.

4.5 Curriculum

The curriculum of the degree of the Bachelor of the Science of Engineering Honours (BScEngHons) offered by the Civil and Environmental Engineering Department is delivered in terms of several core, technical elective, and general elective modules as listed in the following sections. First two letters of a module code signify abbreviated form of the name of the department offering the subject. Accordingly, a module code starting with CE denotes that the subject is offered by the Department of Civil and Environmental Engineering. The first and second digits of the module code indicate the level at which the module is offered and the number of credits it carries, respectively. Last two digits are semester based subject codes assigned by the respective Department based on the alphabetical order of the module name. All modules of a semester are allocated numbers from 1-50, except for technical elective modules which are allocated numbers from 51.

4.5.1 Core Modules

Semester	Module
1	CE 1101 Basic Concepts in Environmental Engineering
1	CE 1202 Introduction to Infrastructure Planning
1	EE 1101 Computer Programming I
1	EE 1302 Introduction to Electrical Engineering
1	ME 1201 Engineering Drawing
1	ME 1202 Introduction to Mechanical Engineering
1	IS 1301 Communication for Engineers
1	IS 1402 Mathematical Fundamentals for Engineers

2	CE 2201 Fundamentals of Fluid Mechanics
2	CE 2302 Mechanics of Materials
2	EE 2201 Computer Programming II
2	EE 2202 Introduction to Electronic Engineering
2	ME 2201 Fundamentals of Engineering Thermodynamics
2	ME 2302 Introduction to Materials Science and Manufacturing Engineering
2	IS 2401 Linear Algebra and Differential Equations
3	CE 3201 Concrete Technology
3	CE 3204 Structural Analysis I
3	CE 3302 Engineering Surveying
3	CE 3303 Fluid Mechanics
3	IS 3302 Complex Analysis and Mathematical Transforms
3	IS 3307 Society and the Engineers
4	CE 4204 Structural Analysis II
4	CE 4301 Building Planning and Cost Estimating
4	CE 4302 Design of Concrete Structures I
4	CE 4303 Engineering Geology and Soil Mechanics
4	CE 4305 Water and Wastewater Engineering
4	IS 4305 Probability and Statistics
5	CE5202 Design of Steel Structures
5	CE 5204 Integrated Solid Waste Management
5	CE 5205 Structural Analysis III
5	CE 5301 Construction Processes and Technology
5	CE 5303 Hydraulic Engineering
5	CE 5306 Traffic and Transportation Engineering
5	IS 5101 Engineering Ethics
5	IS 5306 Numerical Methods
6	CE 6106 Surveying Work Camp
6	CE 6301 Design of Concrete Structures II
6	CE 6302 Engineering Hydrology
6	CE 6303 Environmental Engineering Design
6	CE 6304 Geotechnical Engineering
6	CE 6305 Highway and Pavement Engineering Design
6	IS 6303 Mathematical Modelling

7	CE 7202 Computer Analysis of Structures
7	CE 7205 Introduction to Research Methodology (1 Credit)
7	CE 7303 Construction Environmental Management
7	CE 7304 Geotechnical Engineering Design
7	CE 7401 Comprehensive Design Project (1 Credit)
7	CE 7606 Undergraduate Research Project (1 Credit)
8	CE 8301 Construction Management
8	CE 7401 Comprehensive Design Project (3 Credits)
8	CE 7606 Undergraduate Research Project (5 Credits)
8	CE 7205 Introduction to Research Methodology (1 Credit)
	Industrial Training (6 Credits)

4.5.2 Technical Electives (TE)

4	CE 4251 Building Services Engineering (TE)
5	CE 5251 Design of Timber and Masonry Structures (TE)
5	CE 5252 Remote Sensing and GIS (TE)
5	CE 5253 Uncertainty in Engineering (TE)
5	CE 5254 Building Information Modelling for Project Management (TE)
6	CE 6251 Coastal Engineering (TE)
6	CE 6252 Dynamic & Control of Structures (TE)
6	CE 6253 Ecological Engineering (TE)
7	CE 7251 Coastal and Port Engineering Design (TE)
7	CE 7252 Ground Improvement Techniques (TE)
7	CE 7253 Highway Maintenance (TE)
7	CE 7254 Water Reclamation and Reuse (TE)
7	CE 7255 Irrigation Engineering (TE)
8	CE 8251 Bridge Design Engineering (TE)
8	CE 8253 Water Resource Planning and Management (TE)

4.5.3 General Electives (GE)

3	IS3105	Oriental Ballet and Creative Dance
3	IS3206	Physical Development and Health Management

3	IS3307	Society and the Engineers
4	IS4201	Aesthetics and Design
4	IS4102	Appreciation of Music
4	IS4103	Digital Modelling and Animation
4	IS4304	Management and Organizational Behaviour
4	IS4106	Mindfulness
4	IS4307	Technology and Society
5	IS5101	Engineering Ethics
5	IS5302	Financial Management
5	IS5303	Industrial Management
5	IS5204	Industrial Safety and Resource Management
5	IS5205	Information Literacy and Scientific Communication Skills
6	IS6201	Entrepreneurship and Project Management
6	IS6202	Introduction to Sociology
8	IS8201	English for the Professional World

Based on the availability of resource persons, at the beginning of each semester the department announces the GE and TE modules offered in a particular semester. Students are advised to contact respective departments at the beginning of the semester for relevant information.

4.6 Credit Requirement at each Level

Sections 4.5.1 to 4.5.3 show the module offered under different level of the undergraduate program and the classification of the modules into Core (C), Technical Electives (TE) and General Electives (GE). Compulsory core modules are called the common core as they are offered before students are selected to fields of specialisation. Each level consists of two semesters odd and even. Core modules and Technical Electives are GPA modules. All General Elective modules are categorised as GPA optional or non GPA modules. Department reserves the right to change the classification of General elective modules from time to time depending on the requirements of the department. Students are

advised to check status of General Elective modules before registering for the semester. Further, in selecting the General Elective modules students are advised to pay special attention to the category of the General Elective modules ranging from GE-1 to GE-4 as there are minimum requirement from each category for accreditation the degree. Students will be further advised on these minimum requirements under the section 4.6.1.

4.6.1 Credit requirement for IESL accreditation

Table below summarizes the minimum credit requirement in each of the optional category that students should satisfy as the minimum credit requirements for accreditation of the degree. This minimum requirement can change from time to time based on revisions to IESL accreditation manual. This requirement has been derived under the guidelines of the latest version of the accreditation manual available at the time of preparation of the handbook.

Category	Module Code and Module Name	Minimum Credit Requirement
Engineering Sciences and Engineering Design	CE 4251 Building Services Engineering (TE) CE 5251 Design of Timber and Masonry Structures (TE) CE 5252 Remote sensing and GIS (TE) CE 5253 Uncertainty in Engineering (TE) CE 5254 Building Information Modelling for Project Management (TE) CE 6251 Costal Engineering (TE) CE 6252 Dynamic & Control of Structures (TE) CE 6253 Ecological Engineering (TE) CE 7251 Costal and Port Engineering Design (TE) CE 7252 Ground Improvement Techniques (TE) CE 7253 Highway Maintenance (TE) CE 7254 Water reclamation and reuse (TE) CE 7255 Irrigation Engineering (TE) CE 8251 Bridge Design Engineering (TE) CE 8253 Water Resource Planning and Management (TE)	Minimum 7 credits should be obtained from this category
Management, Engineering Economics and Communication	IS3301 Basic Economics* (GE) IS4304 Management and Organizational Behaviour* (GE) IS5302 Financial Management* (GE) IS5303 Industrial Management* (GE) IS5204 Industrial Safety and Resource Management* (GE)	Minimum 6 credits should be obtained from this category

	IS5205 Information Literacy and Scientific Communication Skills (GE) IS6201 Entrepreneurship and Project Management* (GE) IS8201 English for the Professional World (GE)	
Humanities, Social Sciences, Arts and Professional Ethics	IS3103 Graphics Design (GE) IS3105 Oriental Ballet and Creative Dance (GE) IS3206 Physical Development and Health Management (GE) IS4201 Aesthetics and Design (GE) IS4102 Appreciation of Music (GE) IS4103 Digital Modelling and Animation (GE) IS4106 Mindfulness (GE) IS4307 Technology and Society* (GE) IS6202 Introduction to Sociology (GE)	Minimum 1 credits should be obtained from this Category

Note: * All General Elective modules are categorized as GPA optional or non-GPA modules.

5 Industrial Training

Schedule	: At the end of Semester 4 and Semester 6
Number of Credits	: Minimum 5 credits are required

Industrial Training forms a compulsory element of the undergraduate curriculum at the Faculty of Engineering, University of Ruhuna. The Engineering Education Centre (EEC) is responsible for arranging the Industrial training in liaison with the National Apprentice and Industrial Training Authority (NAITA).

The core module INDUSTRIAL TRAINING is conducted outside the normal semesters, inside or outside the Faculty from which at least minimum of five credits are mandatory to satisfy the graduation requirement. INDUSTRIAL TRAINING comprises Industrial Training attachments, Work Camps and/or Training Courses prescribed by the Faculty Board as may be required.

The number of credits awarded shall be as described under the note 1 (below). A grade Pass-H indicating high achievement, a grade M indicating Mediocre achievement or a grade Pass-S indicating satisfactory achievement shall be awarded on successful completion of this module. Graduation shall be withheld if INDUSTRIAL TRAINING is not successfully completed by a student.

Note:

1. A Work Camp/Training Course of two weeks' duration or Industrial Training attachment of four weeks' duration shall be considered as the equivalent of one credit.

6 Other Relevant Information

6.1 Getting help and Advice

Students are expected to discuss issues or problems of the academic program with their academic advisors. In addition, they can seek assistance from the module coordinator and the head of the department in relation to subject specific or specialization specific issues. Problems or issues common to many students may be best resolved through the batch representatives.

6.2 Standard of Conduct

The students are expected to behave responsibly by respecting the codes of academic conduct and the safety of all members of the university community safeguarding the faculty property. In this respect, they are expected to act as responsible individuals, to conduct themselves with honesty and integrity both personally and academically, and should respect the rights of others.

All forms of academic dishonesty such as misrepresentation in coursework, cheating, submission of the work of another person, making false statements to a member of the faculty and alteration or misuse of university documents are considered serious offences.

Following forms of misconduct are considered serious offences and may be reported for disciplinary action.

- Student conduct which makes it difficult or impossible to proceed with scheduled lectures, seminars, discussion group meetings and related activities, and examinations.
- Students conduct which leads to damage to or theft of University properties or the personal properties of members of faculty and staff, or of fellow students. This also include conducts which leads to physical injury to, or emotional disturbances to the members of the university community.
- Violations of the rules and regulations of the Government and the University
- Safety violations
- Failure to remit, return or submit financial obligations, property or records of the department, within the time prescribed by the University

6.3 Academic Concessions

Students who missed the examinations of one or more subjects due to bad health may request for academic concession on medical grounds. The following procedure has to be adopted to be eligible for academic concession.

In case of student missing one exam paper or the whole exam, the student should inform the assistant Registrar within 48 hours that he/she is unable to sit the examination by telegram, registered letter or a fax. Student should submit a valid medical certificate within the two weeks after the last date of the examination. The documents the student needs to submit include;

- Proof of informing the Assistant Registrar
- Medical certificate issued by a government hospital supported by the diagnosis card, receipt of payment for the private medical certificate, results of the blood tests and prescription forms
- In case when the treatment took place outside the hospital, a medical certificate issued by a qualified consultant or the district medical Officer supported by the Diagnosis card, results of the medical checks and prescription forms
- In the case of students with psychiatric illness, a letter issued by consultant psychiatrist

6.4 Conduct during Examinations

- Students registered for proper semester in the Faculty do not have to register for the examinations/ evaluations of the same semester.
- Applicants for any repeat/ supplementary examination/ evaluation shall register for the said examination/ evaluation during the period prescribed by the Faculty.
- Students duly registered for the proper semester and those who registered for repeat examinations/ evaluations shall collect the admission cards during the period prescribed by the Faculty.
- Candidates sitting for any examination conducted by the Faculty:
 - Must reach the examination hall at least 10 minutes before the scheduled time.
 - Must make sure to carry the University Identity Card/ Record Book and Admission Card with them in to the examination hall and produce them to duty staff whenever requested.

- Must make sure that no mobile phones and any unauthorised materials are brought into the examination hall.
- Must make sure that no short notes, equations or any subject related notes are written on calculator case, pencil case, palm or any part of the body or dress before entering in to the examination hall.
- Are only allowed to use non-programmable calculators. FX991-ES plus Calculator is allowed to use subject to the condition that memory of the calculator is erased before entering in to the examination hall.
- Are not permitted borrow calculators, drawing equipment or any stationary from other candidates in the examination hall.
- Must observe strict silence during examination.
- Must make sure that answer sheets, rough sheets are blank and date stamped before starting answering.
- Must not remove any used or unused examination stationary from examination hall.
- Continuous assessment marks of modules will be displayed prior to the end semester examinations.

6.5 Safety in the Department

The department consider it an obligation to provide a safe environment within its premises. All students are expected to adhere to the safety standards and procedures laid down in the department. It is the department policy to update the safety standards from time to time and the student is required to be vigilant of the changes in the safety policy of the department. As a policy all the technical officers of the department are trained on the safety procedures. Student should consider technical officers are the first contact point in the case of an emergency or issues relating to health and safety in laboratory activities. In addition, students are advised of the following general health and safety procedures to be followed.

- Students must not enter workshops or laboratories that display hazard signs unless accompanied by a member of departmental staff. Unauthorised visitors are not allowed into laboratories or workshops unless they are being conducted by a member of staff.
- Do not work alone in a laboratory or workshop. All laboratory and workshop activities must be supervised by a member of academic or

technical staff. Do not operate laboratory or workshop equipment without permission and supervision.

- For practical work, loose clothing, jewellery or long hair could be a danger and compliance with Health and Safety requirements is necessary. Similarly, when outside the University on industrial visits or training programmes, safety requirements of the organisation must be complied with.
- As part of the course activities, if any safety equipment like gloves, goggles, overalls, helmet, earmuffs and film badges was issued, it must be used in the correct fashion. While being engaged in any activity where safety equipment should have been issued and was not, a member of academic or technical staff must be consulted.
- Any hazardous spillages, accidents or broken or defective equipment should be reported to a member of academic or technical staff. Do not attempt to clean up or rectify the matter without supervision.

6.6 Student Activities

While their stay at the university, students are encouraged to engage in extracurricular activities. Students find that exposure to extracurricular activities enriches their university experience. There are a wide range of extracurricular activities organized by the university and the department. Participation in these activities provides opportunities for social association, leadership and professional development. Most of the students join student chapters of a professional society and take part in these societal activities. The department supports student chapters of the Institution of Engineers Sri Lanka, Association of Engineers in Roads and Highways, Society of Structural Engineers and Sri Lanka Geotechnical Society.

6.6.1 *Civil and Environmental Engineering Society*

Civil and Environmental Engineering Society (CEES) is the main society within the department that consists of the academic staff and students working in a collaborative environment to promote various activities related to professional development of students. Academic staff play an advisory role within the society.



The goal of the Civil and Environmental Engineering Society is to upgrade student's life in the department giving them opportunity to improve their leadership and interpersonal qualities. Apart from that, CEES represents the department in inter-university, national and international activities. Some of the specific activities carried out by the CEES include:

- Organizing guest lectures by inviting key personnel from industry and research organizations
- Organizing charity work to promote and encourage students to serve underprivileged sectors of the society
- Organizing a public awareness campaign to celebrate the World Environmental Day, June 5.
- Organizing an annual job fair for final year students with the participation of companies as potential recruiters
- Participating in annual inter-university Spaghetti Bridge Competition organized by the Institution of Engineers, Sri Lanka
- Participating in annual inter-university concrete mix design competition organized by the Institution of Engineers, Sri Lanka
- Conducting annual Undergraduate Research Symposium to share the research outcomes of final year undergraduate research projects

6.7 Industrial Collaborative Activities



The department undertakes collaborative research activities with numerous industrial institutions. In addition, the department has signed MOUs with “INSEE” and “LANWA”. Under the MOUs these organizations provide funds for various initiatives including arranging visiting lectures, scholarship offers for students and sponsorships for department annual international symposium ACEPS. In addition, “Tokyo Cement” is the sole sponsor of the Annual Undergraduate Research Symposium.

6.8 Annual Students Awards

6.8.1 Gold Medals

Recipients of Gold Medals are recommended by the Faculty Board of Engineering considering the overall academic performance during the course and will be awarded at the convocation ceremony.

Lambert Weerasekara Memorial Gold Medal - Awarded for the Best Engineering Graduated who obtained the highest Overall Grade Point Average with a First Class in the Civil and Environmental Engineering degree Programme.

6.8.2 Vice Chancellor's and Dean's Awards

Vice Chancellor's and Dean's Awards shall be awarded annually to the students with the best overall performances in the Faculty of Engineering. Undergraduate students who achieve prescribed criteria laid down by the Senate and have no disciplinary actions against them, are eligible for awards. The Vice Chancellor's Award shall also be noted on students' academic transcript.

6.8.3 Best Student Award Certificates for the Graduates in Different Specializations in the Civil Engineering Degree Program

In addition to the above department also arranges specially awards to recognised student achievements in different civil engineering fields of specialisations as follows.

Awards Categories:

- Best Student in Structural Engineering
- Best Student in Geotechnical Engineering
- Best Student in Hydraulics and Environmental Engineering
- Best Student in Surveying and Transportation Engineering
- Best Student in Building and Construction Management
- Best Undergraduate Researcher

6.8.3 Module Distribution for each Award Category

Major subject specializations considered for each of the awards are shown below.

<i>Best Student in Structural Engineering</i>	
CE3201	Concrete Technology
CE3204	Structural Analysis I
CE4302	Design of Concrete Structures I
CE4204	Structural Analysis II
CE5202	Design of Steel Structures
CE5205	Structural Analysis III
CE6301	Design of Concrete Structures II
CE7202	Computer Analysis of Structures
<i>Best Student in Geotechnical Engineering</i>	
CE4303	Engineering Geology and Soil Mechanics
CE6304	Geotechnical Engineering
CE7304	Geotechnical Engineering Design
<i>Best Student in Hydraulics and Environmental Engineering</i>	
CE3303	Fluid Mechanics
CE4305	Water and Wastewater Engineering
CE5303	Hydraulic Engineering
CE5204	Integrated Solid Waste Management
CE6302	Engineering Hydrology
CE6303	Environmental Engineering Design
CE7303	Environmental Management
<i>Best Student in Surveying and Transportation Engineering</i>	
CE3302	Engineering Surveying
CE5306	Traffic and Transportation Engineering
CE6305	Highway and Pavement Engineering Design
CE6106	Surveying Work Camp
<i>Best Student in Building and Construction Management</i>	
CE4301	Building Planning and Cost Estimating
CE5301	Construction Processes and Technology
CE7401	Comprehensive Design Project
CE8301	Construction Management
<i>Best Undergraduate Researcher</i>	
CE7205	Introduction to Research Methodology
CE7606	Undergraduate Research Project

Note: Only core modules are considered for these awards.

6.8.4 Selection Criteria

Selection of students to the above award categories is done as shown below.

The students with the highest DGPA (Divisional Grade Point Average) in each award categories will be awarded the best student certificate for that category. The calculation of DGPA is based on the summation of Grade points (GP) earned for each module, which belongs to that award category, weighted according to the number of credits using the equation (1):

$$DGPA = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i} \quad (1)$$

In which

C_i – Credit value of i^{th} module

GP_i – Grade Points earned for the i^{th} module

n – Number of modules in the award category

If the highest DGPA is achieved by two or more students in a particular award category, then the students with the maximum number of A+ earned for the modules in that category will be given the award. If the number of A+ are equal, the number of A, A-, B+, B, B-, C+, C will be considered in that order and will be awarded to the student with higher grades. If still equal, the student with the highest OGPA will be qualified to receive the certificate. In case, the OGPAs are identical, the students with the identical OGPAs will jointly be awarded.

6.9 Academic requirement for graduation

To be admitted to the degree of the Bachelor of the Science of Engineering Honours (BScEngHons) a student shall satisfy the following requirements:

- A minimum total of 150 credits that comprising all the Core modules, a number of Technical Elective (TE) modules, General Elective (GE) modules and Industrial Training satisfying the conditions as relevant.
- Technical Elective (TE) modules and General Elective (GE) modules must be chosen from the list offered by the relevant Department

satisfying the accreditation requirements for an engineering degree as specified by the Institution of Engineers, Sri Lanka (IESL).

- Completion of the Development Programme, Industrial Training, English Language Proficiency Test and any other mandatory requirements prescribed by the Faculty Board with the approval of the Senate.
- A minimum Overall Grade Point Average (OGPA) of 2.00.
- A residence requirement of four academic years as a duly registered full-time student of the University.

The calculation of Cumulative Grade Point Average (CGPA) is based on the summation of final grade points earned for each Core, Elective module (Technical Elective module or General Elective Module which is counted for GPA), using only the highest grade for repeated modules weighted according to the credits assigned and the module level as given below.

Semesters 1 - 2	Weight of 0.05
Semesters 3 - 8	Weight of 0.15

The Overall Grade Point Average (OGPA) is the CGPA calculated at the end of the student’s study programme in the Faculty, considering all the Core modules and, from the requisite number of Technical Elective (TE) modules and General Elective (GE) modules which is counted for GPA. The requisite numbers of Technical Elective and General Elective modules are counted from the list offered by the relevant Department satisfying the accreditation requirements for an engineering degree as specified by the Institution of Engineers Sri Lanka (IESL). If the number of Technical Elective and General Elective Module which is counted for GPA completed by a student exceeds the requisite number, the module grades are ranked and the requisite number from the top is selected. The OGPA is calculated using the equation (2).

$$OGPA = \sum_i^8 \frac{\sum_{j=1}^n C_j GPV_j}{\sum_{j=1}^n C_j} (w_i) \quad (2)$$

Where n is the number of modules taken to satisfy the graduation requirements in the i th semester, GPV_j is the Grade Point Values earned for the module j , C_j is the number of credits of the module j , and w_i is the weight assigned for the i th semester.

A student shall not qualify for the award of the BScEngHons degree if the graduation requirements are not satisfied within eight academic years from the time of admission to the Common Core Course except with the consent of the Senate on the recommendation of the Faculty.

A student admitted to the degree programme in the Faculty shall be a candidate for a degree with a class. A student shall be deemed to be eligible for the award of the degree of BScEngHons with a class on satisfying the following requirements.

- A minimum total of 150 credits that comprising all the Core modules, a number of Technical Elective (TE) modules, General Elective (GE) modules and Industrial Training satisfying the conditions as relevant.
- Technical Elective (TE) modules and General Elective (GE) modules must be chosen from the list offered by the relevant Department satisfying the accreditation requirements for an engineering degree as specified by the Institution of Engineers, Sri Lanka (IESL).
- Completion of the Development Programme, Industrial Training, English Language Proficiency Test and any other mandatory requirements prescribed by the Faculty Board with the approval of the Senate.
- Completion of all programme requirements to the satisfaction of the Senate within a period of four academic years from the commencement of the common core course.
- A residence requirement of four academic years as a duly registered full time student of the University.
- An Overall Grade Point Average (OGPA) is not less than 3.00.

The academic standings of BScEngHons degree shall be according to the Overall Grade Point Average values stipulated below.

OGPA valueOGPA \geq 3.70 $3.30 \leq$ OGPA $<$ 3.70 $3.00 \leq$ OGPA $<$ 3.30 $2.00 \leq$ OGPA $<$ 3.00Academic Standing

First Class

Second Class Upper Division

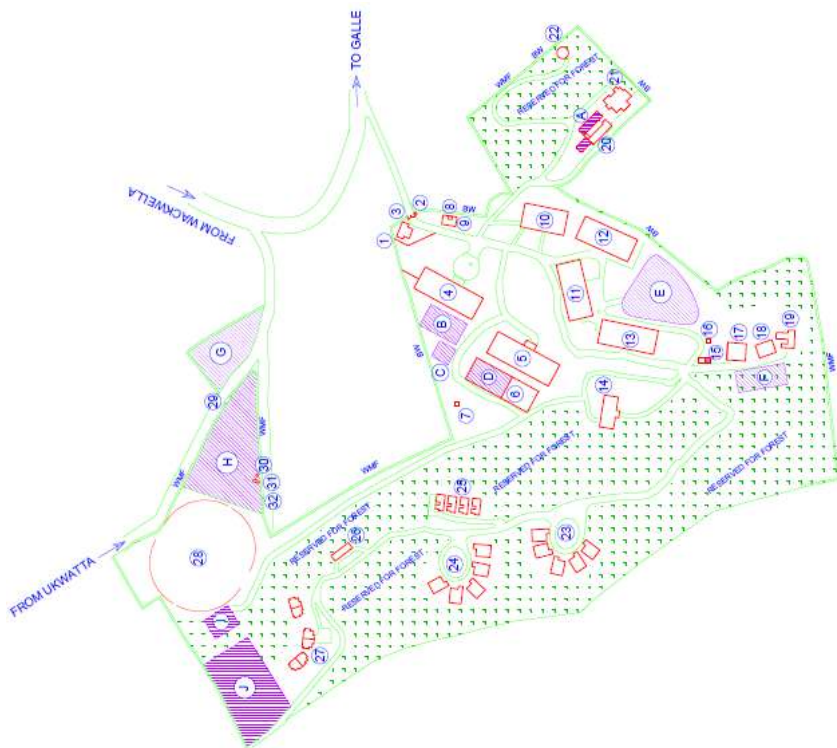
Second Class Lower Division

Pass

A student who satisfies the OGPA requirement for a Class but takes longer than four academic years to complete the programme requirements may be deemed to be eligible for the award of a BScEngHons degree with a Class as decided by the Senate on the recommendation of the Faculty Board under extenuating circumstances.

Notwithstanding the above provisions, individual cases may be dealt with based on their own merits with the approval of the Senate on the recommendation of the Board of Examiners and the Faculty Board.

6.10 Location and Floor Arrangement of the Department

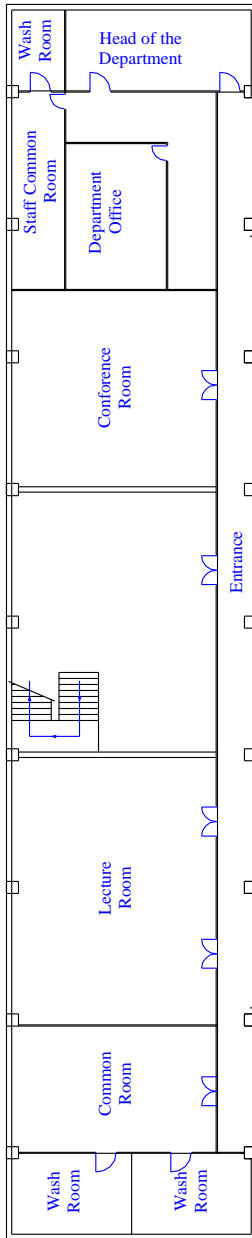


EXISTING BUILDINGS AND STRUCTURES

1. SECURITY OFFICE
2. SECURITY HUT
3. MAIN ENTRANCE
4. ADMINISTRATION BUILDING
5. LECTURE THEATRE BUILDING
6. LECTURE ROOMS AND AUDITORIUM COMPLEX (PARTLY COMPLETED)
7. BUNHUMBU (RA AND BO TREE)
8. PUMP HOUSE
9. WATER SUMP
10. STUDENT SERVICE CENTER BUILDING
11. DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING BUILDING
12. DEPARTMENT OF ELECTRICAL AND INFORMATION ENGINEERING BUILDING
13. DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING BUILDING
14. GUESTHOUSE
15. GENERATOR HOUSE AND PANNEL BOARD ROOM
16. TRANSFORMER
17. GIRLS' HOSTEL BLOCK-1
18. GIRLS' HOSTEL BLOCK-2
19. GIRLS' HOSTEL BLOCK-3
20. BOYS' HOSTEL BLOCK-2 (PARTLY COMPLETED)
21. WATER TANK
22. WATER TANK
23. STAFF QUARTERS (A TYPE)
24. STAFF QUARTERS (A TYPE)
25. STAFF QUARTERS (B TYPE)
26. GARAGE FOR STAFF QUARTERS (C TYPE)
27. STAFF QUARTERS (C TYPE)
28. PLAYGROUND
29. MAIN GATE OF PLAYGROUND
30. WELL
31. WATER TANK FOR PLAYGROUND
32. ADDITIONAL GATE OF PLAYGROUND

LAND RESERVATIONS FOR PROPOSED BUILDINGS AND STRUCTURES

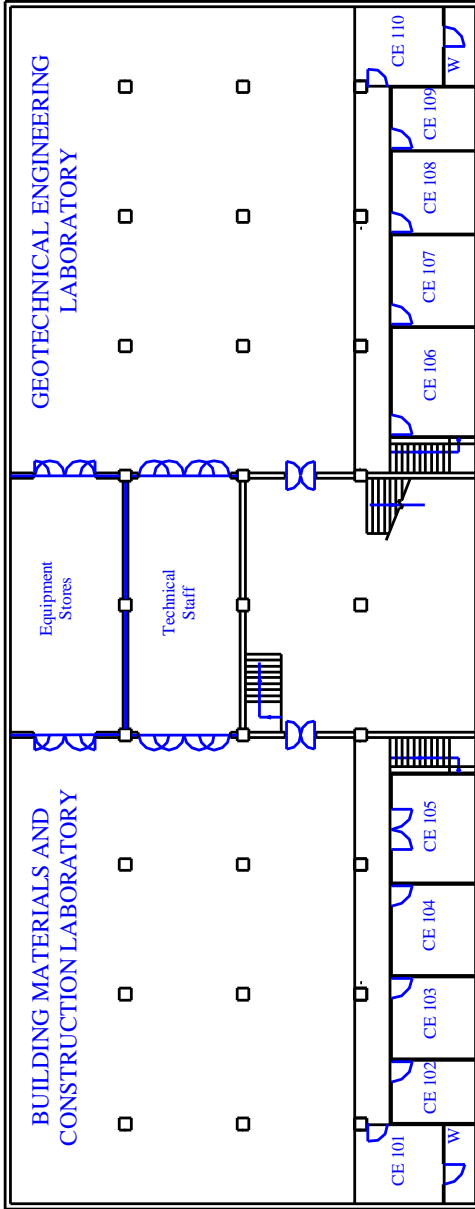
- A - RESERVED FOR COMPLETION OF BOYS' HOSTEL BLOCK-2
- B - RESERVED FOR LIBRARY BUILDING
- C - RESERVED FOR CANTINEEN BUILDING
- D - RESERVED FOR COMPLETION OF LECTURE ROOMS AND AUDITORIUM COMPLEX
- E - RESERVED FOR OPEN AIR THEATER
- F - RESERVED FOR NEW GIRLS' HOSTEL
- G - RESERVED FOR NEW BOYS' HOSTEL
- HJ - RESERVED FOR GYMNASIUM, PAVILION AND DEVELOPMENT OF SPORT FACILITIES
- J - RESERVED FOR STAFF QUARTERS



GROUND FLOOR PLAN

CE - 101	Common Room
CE - 102	Dr. Champika Ellawala
CE - 103	Prof. G.H.M.J. Subashi De Silva
CE - 104	Dr. H.P. Sooriyaarachchi
CE - 105	Researcher/ Instructor
W	Wash Room

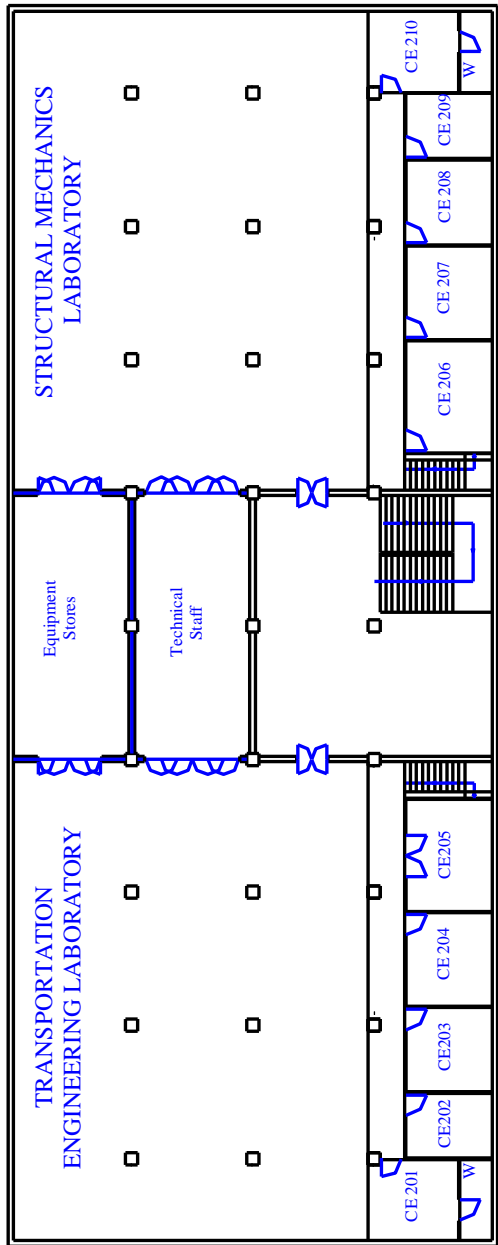
CE - 106	-N/A
CE - 107	Dr. N.H. Priyankara
CE - 108	Dr. A.G.Jayasinghe
CE - 109	Prof. Tushara Chaminda
CE - 110	Common Room
W	Wash Room



FIRST FLOOR PLAN

CE - 201	Common Room
CE - 202	N/A
CE - 203	Dr. S.N. Malkanthi
CE - 204	Dr. S.W.Seneviratne
CE - 205	Dr. T.M. Rengarasu
W	Wash Room

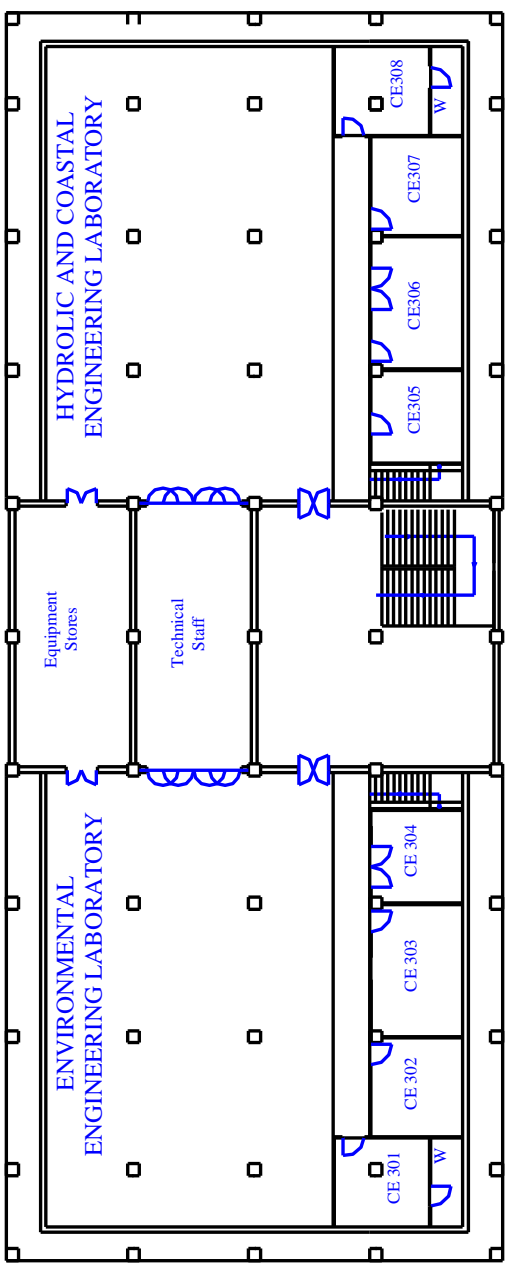
CE - 206	Prof. K.S. Wanniarachchi
CE - 207	Prof. G.S.Y. De Silva
CE - 208	Dr. Vidura Vithana
CE - 209	Dr. B.A.D.S. Wimalasena
CE - 210	Common Room
W	Wash Room



SECOND FLOOR PLAN

CE - 301	Common Room
CE - 302	Dr. W.M.R.K.T. Bandara
CE - 303	Dr. (Mrs) T.N. Wickramarachchi
CE - 304	Dr. (Mrs) W.K.C.N. Dayanthi
W	Wash Room

CE - 305	N/A
CE - 306	Dr. J.M.R.S. Appuhamy
CE - 307	Dr. B.M.L.A. Basnayake
CE - 308	Common Room
W	Wash Room



THIRD FLOOR PLAN