UNIVERSITY OF PERADENIYA  
DEPARTMENT OF CIVIL ENGINEERING  
POSTGRADUATE PROGRAMME IN SUSTAINABLE BUILT ENVIRONMENT YEAR 2018/2019

INTRODUCTION

Conventional practices of global development have caused many issues such as climate change due to Green House Gas emissions, and reduction in limited natural resources. The built environment and operation of associated industrial activities have been identified as the main consumer of resources and the major contributor to the climate change and other environmental issues. As such, a significant improvement of global environmental conditions could be achieved through effective interventions at planning, design, construction and operation stages of built environment. Accordingly sustainable built environment has been identified as a global trend in the infrastructure development.

This course focuses on introducing the concepts and methods of reducing the environmental burden of activities related to the built environment. The students of this programme will have an opportunity to expose themselves to the concept of “Green Building Techniques” applicable in many disciplines of engineering. The main objective of this programme is the capacity building in the area of sustainable built environment. Further, the graduates will be capable of practicing the concepts of green building techniques in their respective areas of specializations. In addition, they will be eligible to apply to become a Green Building Certified Professional (GBCP) who is authorized by the Green Building Council Sri Lanka (GBCSL) to assess buildings for the award of „Green Building Rating” in Sri Lanka.

This postgraduate programme is conducted by the Department of Civil Engineering, University of Peradeniya. The students have the option of registering either for a postgraduate diploma or a master degree. The course consists of taught courses, industrial assignments, laboratory and design exercises and a research project. The Faculty of Engineering, University of Peradeniya, has excellent physical facilities and a team of highly qualified academic staff to conduct the programme. Further, visiting national and international experts from industry and academia will contribute as resource personnel.

ADMISSION REQUIREMENTS

(a) BSc degree in Engineering with first or second class honours or  
(b) A Bachelor’s degree in Architecture, Town & Country Planning, Building Economics or Transport and Logistics Management with first or second class honours or  
(c) A Bachelor’s degree in Engineering/Architecture/Town & Country Planning/Building Economics/ Transport and Logistics Management or equivalent qualification; AND minimum one year experience in a related field.

(The degree should be an accredited and recognized degree by the University of Peradeniya)
ELIGIBILITY AND DURATIONS

Award of the postgraduate degrees is subject to university rules and regulations and following are relevant excerpts.

Postgraduate Diploma

Course Requirements
In order to be eligible for the award of the Postgraduate Diploma of the program in sustainable built environment, a student shall have satisfied a total of 20 credits earned from prescribed courses with a grade point average of at least 2.75 and successful completion of an advanced study or research.

Minimum and Maximum Duration
The minimum period required for the completion of the Postgraduate Diploma shall be eight (8) months on a full-time basis and twelve (12) months on a part-time basis. To be eligible for the award of the Postgraduate Diploma, a student shall fulfill all stipulated requirements within 24 months from the date of registration.

Degree of Master of Science

Course Requirements and Eligibility
In order to be eligible for the award of MSc Degree of the program in sustainable built environment a student shall have a total of 24 credits earned from prescribed courses with a grade point average of at least 3.0 and successfully completed a research study of at least four (4) months of full-time research or its equivalent on part-time basis.

Minimum and Maximum Duration
The minimum period required for the completion of the MSc/Msc Eng. Degree is twelve (12) months on a full-time basis or eighteen (18) months on a part-time basis. In order to be eligible for the award of the MSc. Degree, a student shall fulfill all stipulated requirements within three academic years from the date of registration.

COURSE FEES

Course fee is Rs. 300,000/- for the MScEng/MSc degrees and Rs. 225,000/- for the PG Dip.

In addition to above fee a refundable library deposit of Rs.10,000.00 should be paid at the time of the registration for the postgraduate programme.

APPLICATION PROCEDURE

Every application for enrolment must be made on the prescribed form obtained from the Assistant Registrar, Faculty of Engineering, University of Peradeniya. Perfected applications should reach the Assistant Registrar, Faculty of Engineering, University of Peradeniya on or before 31st October, 2018.

The following items should be submitted along with the application:
a. Two letters of recommendation. At least one should be from the applicant’s teacher at the University. (Letters of recommendation are considered confidential)
b. Degree/Diploma/Professional membership certificate/s (Photostat copy/copies)
c. Birth certificate (Photostat copy)
d. Letter of consent from the employer (if funded by the employer)
e. 2 self addressed envelops (22x10 cm) with 15/- stamp

Originals of documents of which Photostat copies are submitted should be produced before admission, on request.

Applicant should arrange to have official copies of transcripts sent direct to the Assistant Registrar, Faculty of Engineering, University of Peradeniya, Peradeniya.

In the event of any discrepancy between the names appearing in the applicant’s academic/professional/birth certificates and the name given by the applicant in the application, an affidavit to the effect that the applicant is the one and the same person known by such names should be sent together with the application form.

Documents submitted in support of an application shall become the property of the University.

Application which are received late/or incomplete in any respect are liable to be rejected.

The applicants will be informed of their acceptance/non-acceptance to the particular postgraduate programme for which admission has been sought. The University may at its discretion refuse admission to any applicant.

The course will be started from January 2018 and will be conducted on Saturdays and Sundays from 8.00 am to 5.00 pm.

**SUBJECTS**

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<tr>
<th>Code</th>
<th>Subject</th>
<th>Type</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CE 690</td>
<td>Fundamentals of Architecture and Economics for Sustainable Planning</td>
<td>Core</td>
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<td>CE 692</td>
<td>Global Environmental Issues and Built Environment</td>
<td>Core</td>
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<td>CE 693</td>
<td>Building Services Engineering</td>
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<tr>
<td>CE 694</td>
<td>GreenSL Rating System for Built Environment</td>
<td>Core</td>
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<tr>
<td>CE 691</td>
<td>Infrastructure Planning for Sustainable Cities</td>
<td>Elective</td>
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<td>CE 696</td>
<td>Sustainable Construction</td>
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<td>CE 605</td>
<td>Seminar - Technology and Management</td>
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<td>CE 672</td>
<td>Environmental Technology and Management</td>
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<td>CE 673</td>
<td>Water and Wastewater Engineering</td>
<td>Elective</td>
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<tr>
<td>CE 675</td>
<td>Water and Environmental Resources and Management</td>
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<tr>
<td>CE 711</td>
<td>Building energy systems</td>
<td>Elective</td>
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<td>CE 698</td>
<td>Independent Study</td>
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<td>CE 699</td>
<td>Advanced Research Project</td>
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Details of Subjects

**CE 690 - Fundamentals of Architecture and Economics for Sustainable Planning**
Economics for sustainable planning: economic appraisal methods, lifecycle costing, asset management, human resources management, value engineering, environmental economics, society, heritage and nature.
Fundamentals of architecture; Sustainable architecture, Building regulation requirements, Space efficiency of buildings, Economical design of buildings. Sustainable landscape practices, plant selection, outdoor and indoor landscaping,

**CE 691 - Infrastructure Planning for Sustainable Cities**
Fundamentals of Infrastructure Planning; Concept of Sustainability as applied to Infrastructure Planning
Land-Use Planning and Urban Form for Energy-Efficiency (Urban Growth Patterns)
Urban and Rural Transport Planning (Sustainable Accessibility for Cities and Communities)
Social Infrastructure Planning (Shelter Health, Education, Employment, Administration, Safety, Recreation and Cultural)
Utility Networks and Facility Location, Infrastructure Planning for Emergencies
Social Organisation and Urban Psychology
Discussion of case studies

**CE 692 - Global Environmental issues and built environment**
Global environmental issues: Global warming & climate change, Acid rains, Ozone layer depletion, Overconsumption of resources and loss of biodiversity.
Environmental Impact from Industry and mitigation of impact: evaluation of overall impacts through LCA and carbon footprint.

**CE 693 - Building Services Engineering**
Introduction to building services engineering: HVAC Systems and thermal comfort design, Fire and safety, Acoustics, Lighting, Electromechanical systems, Building management systems (BMS), Preventive maintenance for sustainable operations. Mitigation of indoor air pollution: causes of indoor air pollution, health effect and mitigation.
ISO 50001 in built environment, Introduction to energy auditing methods.

**CE 694 - GreenSL Rating System for Built Environment**
Introduction to the Green SL rating system, Management, Sustainable sites, Water efficiency, Energy and atmosphere, Materials and resources, Indoor environmental quality, Society and Cultural awareness.
Green SL Rating system - applications, Case studies.

**CE 696 - Sustainable Construction**
The principles of sustainable manufacturing and construction, Construction management principles, Push & Pull planning and last planner system, Modular and lean construction techniques, Procurement procedures and logistics, Supply chain management, Case studies.

**CE 698 - Independent Study**
Formulation and carrying out of an individual research or design project on sustainable built environment under the guidance of a supervisor. At the completion of the project each student submits a technical report and presents the results orally.

**CE 699 - Advanced Research Project (Only for MSc. Degree)**

The research programme should cover aspects such as formulation of research proposal, literature review, research methodology, analysis of results and drawing conclusions, presenting the research work leading to the thesis.