Civil (Engineering) Systems major

Year and Campus:	2016
Coordinator:	Dr Graham Moore Email: grahamam@unimelb.edu.au
Contact:	**Currently enrolled students**: # General information: **https://ask.unimelb.edu.au (https://ask.unimelb.edu.au/)** # **Contact Stop 1 (http://students.unimelb.edu.au/stop1)**
Overview:	**THERE IS NO FURTHER ENTRY INTO THIS COURSE. THE COURSE STRUCTURE BELOW ONLY APPLIES TO RE-ENROLLING STUDENTS WHO COMMENCED THEIR STUDIES PRIOR TO 2015.** Civil Engineering involves the planning, design and construction of the built environment and the provision of essential services and infrastructure. Civil Engineers use their sophisticated understanding of these concepts to create solutions to improve quality of life. Construction of the built environment, which includes structures such as buildings, bridges and tunnels, requires engineers at the forefront of technology with a breadth of knowledge and experience. Similarly, our transport systems, water supply, drainage systems, ports and harbours are all examples of essential services where civil engineers are vital in providing the most effective way of interacting with the natural environment. **Careers and Further Study:** Students pursuing a career in civil engineering will complete the Bachelor of Environments with a major in Civil Systems, followed by the two-year Master of Engineering (Civil or Structural). The five-year Bachelor-Masters Combination leads to professional accreditation by Engineers Australia, The Institution of Engineers. For more information about the Master of Engineering and graduate careers, please visit the Melbourne School of Engineering web site: **www.eng.unimelb.edu.au (http://www.eng.unimelb.edu.au/)**
Learning Outcomes:	By the end of a three year Bachelor of Environments degree with a Civil (Engineering) Systems major, students will have breadth of knowledge across a wide range of Engineering issues. For more information visit: **www.benvs.unimelb.edu.au (http://www.benvs.unimelb.edu.au/)**
Structure & Available Subjects:	112.5 points (9 subjects) of Civil Systems subjects.
Majors/Minors/ Specialisations	Course planning for a Civil (Engineering) Systems major A major in Civil (Engineering) Systems in the Bachelor of Environment consists of: # 112.5 points (9 subjects) of Civil Systems subjects; # 37.5 points (3 subjects) of core first year subjects (Natural Environments, Reshaping Environments and Urban Environments); # 12.5 points (1 subjects) of first year subjects that are core to the major (Structural Environments); # 25-37.5 points (2-3 subjects) of mathematics breadth subjects required for the major (see below under Required Level 1 breadth subjects). This is in addition to electives and breadth to make up the 300 points required for the degree. Specific details of the Bachelor of Environments course structure can be found at: **https://handbook.unimelb.edu.au/view/current/B-ENVS (../../view/current/B-ENVS)**
Subject Options:	The following description of the Civil (Engineering) Systems major aligns with the Study Plan Structure viewable on the Portal for students who commenced the Bachelor of Environments in 2013 or later. The components within the structure of this major have been designed to enforce the requirements of both this specific major and of the course overall, e.g. the requirement that at least 62.5 points of Environments discipline subjects (which can include subjects taken within the major) are taken at each of Level 2 and Level 3. It is strongly recommended that students refer to the full description of this major. The layout of this description is not necessarily in the order in which subjects are taken.

E.g. breadth subjects should be taken in a student's first year and the information on breadth is displayed at the end of this entry.

Students who commenced the Bachelor of Environments prior to 2013 should refer to the handbook entry for the year they commenced in conjunction with 2013 handbook listings for Environments elective and Breadth subjects.

Level 1 Core subjects - Bachelor of Environments (37.5 points)

Core subjects that must be taken by all Bachelor of Environments students.

All of

Subject	Study Period Commencement:	Credit Points:
ENVS10001 Natural Environments	Semester 1, Semester 2	12.50
ENVS10002 Reshaping Environments	Semester 1, Semester 2	12.50
ENVS10007 Urban Environments	Semester 1, Semester 2	12.50

Level 1 Environments Electives (37.5 points)

Select three of the following subjects.

(N.B. ENVS10009 Structural Environments must be taken by students intending to undertake the Civil (Engineering) Systems major.)

Subject	Study Period Commencement:	Credit Points:
ENVS10003 Constructing Environments	Semester 1, Semester 2	12.50
ENVS10004 Designing Environments	Semester 1, Semester 2	12.50
ENVS10005 Governing Environments	Semester 2	12.50
ENVS10006 Mapping Environments	Semester 1	12.50
ENVS10009 Structural Environments	Semester 2	12.50
ENVS10010 Owned Environments	Semester 1	12.50
ENVS10011 Productive Environments	Semester 2	12.50
ABPL10003 Visualising Environments	Semester 1, Semester 2	12.50

Civil (Engineering) Systems major - core subjects (100 points)

All of

Subject	Study Period Commencement:	Credit Points:
ENEN20002 Earth Processes for Engineering	Semester 2	12.50
ENGR20003 Engineering Materials	Semester 2	12.50
ENGR20004 Engineering Mechanics	Summer Term, Semester 1, Semester 2	12.50
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50
CVEN30008 Engineering Risk Analysis	Semester 1	12.50
CVEN30009 Structural Theory and Design	Semester 2	12.50
CVEN30010 Systems Modelling and Design	Semester 2	12.50
ENGR30002 Fluid Mechanics	Semester 1, Semester 2	12.50

Civil (Engineering) Systems major - elective subject (12.5 points)

Select one of

Subject	Study Period Commencement:	Credit Points:
ABPL20047 Site Tectonics	Semester 2	12.50
GEOM20015 Surveying and Mapping	Semester 2	12.50
ABPL30039 Construction Contract Administration	Semester 2	12.50
GEOM20013 Applications of GIS	Semester 1	12.50

Level 2 Environments elective subject (12.5 points)

Select one x 12.5 point subject at Level 2 from the list of **Environments Discipline subjects (../../view/current/%21B-ENVS-SPC%2B1000)**

Level 3 Environments elective subject (12.5 points)

Select one x 12.5 point subject at Level 3 from the list of **Environments Discipline subjects (../../view/current/%21B-ENVS-SPC%2B1000)**

Level 2 or Level 3 Environments elective subject (12.5 points)

Select one x 12.5 point subject at Level 2 or Level 3 from the list of **Environments Discipline subjects (../../view/current/%21B-ENVS-SPC%2B1000)**

Breadth subjects

Bachelor of Environments students must complete between 50 and 75 credit points of subjects selected from those available as breadth for Bachelor of Environments students; with no more than 37.5 points at Level 1. For a complete listing of available subjects please click the 'Find breadth subjects' link on the **Handbook homepage (../../)** and perform a search.

The breadth requirements for the Bachelor of Environments include the restriction of some subjects as breadth options, depending on an individual student's choice of major. Subjects in the Handbook that are marked as available as breadth in the Bachelor of Environments may be subject to further restrictions, depending up which major a student is completing in that course. Detailed information on these **Restrictions for Breadth Options (../../view/CURRENT/%21B-ENVS-SPC%2B1001)** is available.

Required Level 1 breadth subjects

Please note the following regarding the mathematics sequence of subjects that are essential to the Civil Systems Major (students must check the prerequisite requirements of subjects before enrolling to ensure it is appropriate and should consult a student advisor if they are unsure):

Students who have completed VCE Mathematical Methods Units 1 and 2 only, should enrol in MAST10012 Introduction to Mathematics, followed by MAST10005 Calculus 1, MAST10006 Calculus 2, and MAST10007 Linear Algebra. One of these subjects must contribute to the Free Points component of the B-ENVS as only 37.5 points at Level 1 can be included in the 50 point required breadth component.
Students who have completed VCE Mathematical Methods Units 3 and 4 with a study score of 25 or more should enrol in MAST10005 Calculus 1, MAST10006 Calculus 2, and MAST10007 Linear Algebra.
Students who have completed VCE Specialist Maths Units 3 and 4 with a study score of 30 or more are not permitted to enrol in MAST10005 Calculus 1 but should enrol in MAST10006 Calculus 2, and MAST10007 Linear Algebra.

Subject	Study Period Commencement:	Credit Points:
MAST10012 Introduction to Mathematics	Summer Term, Semester 1	12.50
MAST10005 Calculus 1	Semester 1, Semester 2	12.50
MAST10006 Calculus 2	Semester 1, Semester 2	12.50
MAST10007 Linear Algebra	Summer Term, Semester 1, Semester 2	12.50

Breadth restrictions for Civil Systems major students

Students undertaking the Civil Systems major are not permitted to take as breadth:

- any Chemistry subjects (subject codes beginning CHEM)
- any Civil Engineering subjects (subject codes beginning CVEN)
- any Earth Science subjects (subject codes beginning ERTH)
- any Engineering subjects (subject codes beginning ENGR)
- any Geology subjects (subject codes beginning GEOL)
- any Geomatics subjects (subject codes beginning GEOM)
- any Mathematics and Statistics subjects (subject codes beginning MAST) - with the exception of MAST10006 Calculus 2 and MAST10007 Linear Algebra (and any required prerequisites for these subjects such as MAST10005 Calculus 1 and MAST10012 Introduction to Mathematics)
- any Physics subjects (subject codes beginning PHYC)
- any of the following Level 2 or Level 3 Construction subjects:

Subject	Study Period Commencement:	Credit Points:
ABPL20033 Construction Analysis	Semester 2	12.50
ABPL20036 Environmental Building Systems	Semester 1, Semester 2	12.50
ABPL20041 The Construction Context	Semester 1	12.50
ABPL30039 Construction Contract Administration	Semester 2	12.50
ABPL30040 Measurement of Building Works	Semester 1	12.50
ABPL30041 Construction Design	Semester 1	12.50
ABPL30046 Structures and Construction Systems	Semester 1	12.50
ABPL30055 Construction Management	Semester 1	12.50
ABPL20042 Residential Construction and Structures	Semester 1	12.50
ABPL20053 Concrete Structures and Construction	Semester 2	12.50

Notes:

For more information on this major and to view a sample course plan please visit: **http://edsc.unimelb.edu.au/sample-course-plans-bachelor-environments (http://edsc.unimelb.edu.au/sample-course-plans-bachelor-environments)**