ENGR 1004 DESIGN SCIENCE (WSTC)

Credit Points 10

Legacy Code 700126

Coordinator Robert Paluzzano (https://directory.westernsydney.edu.au/search/name/Robert Paluzzano/)

Description An explanation and description of how the built environment works is essential to designers and construction professionals. This subject provides an introduction to physical units of measurement, tolerance, statics, dynamics, acoustics and thermal properties. It also allows students to interpret and apply the concepts of electricity, energy, work and power to the built environment. Students engage with these concepts through a hands-on learning experience including practical projects and live demonstrations.

School Computer, Data & Math Sciences

Discipline Other Engineering And Related Technologies

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 1 subject

Pre-requisite(s) Students enrolled in 7015 Diploma in Construction Management or 7065 Diploma in Construction Management Extended or 7042 Bachelor of Construction Management (WSTC FYP) or 7081 Bachelor of Construction Management Extended (WSTC FYP) must pass MATH 0027 Scientific Methods for Construction Management (WSTC Prep) before enrolling in this unit

Equivalent Subjects ENGR 1003 Design Science

Restrictions Students must be enrolled at Western Sydney University, The College in a Construction Management program. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory subjects listed in the program structure prior to enrolling in this University level subject. Students enrolled in the combined Diploma/Bachelor programs listed below must pass all College Preparatory subjects listed in the program structure before progressing to the Year 2 subjects.

Assumed Knowledge

The content of any NSW HSC Mathematics subject.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Apply SI units for measurements
2. Explain and apply the principles of industrial design and construction
3. Explain and use the concepts of forces, equilibrium and electricity
4. Explain and use the thermal properties of materials and use the principles of design in acoustics
5. Prepare a design portfolio to professionally document the design process
6. Plan, manage and actively contribute to a team based project

Subject Content

1. SI units and measurements.
2. Principles for design and construction.
3. Forces and equilibrium.
4. Introduction to electricity.
5. Thermal properties of matter.
6. Acoustics and design principles.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task
Quiz (In Class)	30 minutes	5	N	Individual
Portfolio	20 hours	20	N	Group
Presentation	10 slides	10	N	Group
Report	3,000 words	40	N	Individual
Critical Review	2,000 words	25	N	Individual