ENGR 2022 DESIGN PRACTICE: SUSTAINABLE MANUFACTURING

Credit Points 10

Legacy Code 301308

Coordinator Toktam Bashirzadeh Tabrizi (https://directory.westernsydney.edu.au/search/name/Toktam Bashirzadeh Tabrizi/)

Description Reflecting upon the life cycle of products and their components is important in understanding how decisions at the design level impact on people, resources, sustainable goals and how these contribute towards sustainability-oriented local and global value chains. This subject focuses on sustainable decision-making at the design level. It challenges and motivates students towards using sustainability principles to promote good Design for Disassembly (DfD) practices with linkages to material durability, and material reuse. Through a project-based approach, students will appraise manufacturing considerations for product design applying in succession Design for Manufacturing, Assembly and Disassembly (DfM, DfA, DfD) principles to their products and reflect on product lifecycle management best practice.

School Eng, Design & Built Env

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 2 subject

Assumed Knowledge

The ability to communicate a design proposal using 2D or 3D computer software with annotations, and application of Australian Standards AS 1100 is desirable.

Learning Outcomes

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

1. Conduct a product review and re-design based on principles on DfM, DfA and DfD focusing on durability in regard for fit-for-purpose, and circular economy principles
2. Improve sustainable outcomes by applying Design for Manufacturing, Assembly and Disassembly techniques and approaches
3. Employ design methods that enhance the ease of manufacturing component assemblies and ease of disassembly
4. Effect positive sustainable change in design, manufacture, and end-of-life-cycle use of components supporting a sustainable systems approach

Subject Content

1.Emergent local and global perspectives in Sustainable Manufacturing

2.Design for Assembly (DfA), Manufacturing (DfM), and Disassembly (DfD)

3.Design parts with: self-fastening features, handling & insertion, component symmetry, component minimisation, standardisation, modularity, and waste and part minimisation
4.Product Lifecycle Management (PLM) with emphasis on disposal and reuse of manufactured products material resource legacies

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	Mandatory
Proposal	1,000 words	20	N	Group	Y
Applied Project	500 words (10%) 6 X A2 size concept developmer (20%)	30	N	Individual	Y
Applied Project	Engineering drawings (15 pages)	30	N	Individual	Y
Poster	A1 research poster	20	N	Individual	Y

Teaching Periods

Autumn (2025)

Parramatta City - Macquarie St

On-site

Subject Contact Toktam Bashirzadeh Tabrizi (https://directory.westernsydney.edu.au/search/name/Toktam Bashirzadeh Tabrizi/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR2022_25-AUT_PC_1#subjects)