# ENGR 2035 MODERN DIGITAL DESIGN AND DEVELOPMENT

**Credit Points** 10

**Coordinator** Richard Yang (https://directory.westernsydney.edu.au/search/name/Richard Yang/)

**Description** This subject provides fundamental knowledge and skills development in Digital Manufacturing and Design (DMD) technologies for Advanced Manufacturing, Product Design and Industry 4.0. Digital transformation happens throughout the world in Product Development and Design (PDD). Students will engage with digital technologies which stimulate innovative, integrated and sustainable product development processes and workflows from design to manufacturing. As part of their engagement with real-world design projects, students will apply their skills to areas such as design, scenario analysis, rapid prototyping and testing for improved manufacturing outcomes. A number of opportunities, such as the WSU Formula SAE Race Car project, will allow students to work alongside industry partners and develop job ready practices for their future careers.

**School** Eng, Design & Built Env

**Discipline** Other Engineering And Related Technologies

**Student Contribution Band** HECS Band 2 10cp

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

**Level** Undergraduate Level 2 subject

## Learning Outcomes

1. Develop fundamental knowledge and skills in Digital Manufacturing and Design (DMD) technologies.
2. Solve a design problem using digital technologies and processes.
3. Implement appropriate digital design processes and workflows in designing a component for a real-world application.
4. Discuss the importance of social aspects of Industry 4.0 and digital engineering including economics, ethics, safety and societal impact.
5. Work collaboratively for a digital design project.
6. Communicate in a clear, concise manner to a diverse audience in a range of formats, verbal and written, following ethical and academic integrity guidelines.

## Subject Content

- Engineering Drawing and Drafting
- Australian and International Standards for Engineering Drawing
- Product Design and Development (PDD)
- Fundamentals of Design for X (DfX)
- Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM)
- Virtual Reality (VR) and Augmented Reality (AR)

## 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 |
|---|---|---|---|---|
| Quizzes x 2 | 60 minutes (per Quiz) | 30 | N | Individual |
| Log/ Workbook | 60 minutes (per activity) | 30 | N | Individual |
| Applied Project | 1500 words (including visuals) And 10 minutes (presentation) | 40 | Y | Group |

Teaching Periods