Mechanical and Manufacturing Engineering

Course Outline

# ENGG3002

# Automotive Engineering

# Contents

# 1. Staff contact

**Contact details and consultation times for course convenor**

Name: Daniel Eggler
Office location: 402H
Email: d.eggler@unsw.edu.au
Consultation time: Thursday 2-3pm

Generally, problem-solving session time should be used for direct consultation. If you require further consultation beyond problem-solving sessions, then you may contact me via email to set up a consultation appointment.

**Contact details and consultation times for additional lecturers/demonstrators/lab staff**

Please see the course Moodle.

# 2. Important links

Moodle
Lab Access
Computing Facilities
Student Resources
Course Outlines
Engineering Student Support Services Centre
Makerspace
UNSW Timetable
UNSW Handbook
UNSW Mechanical and Manufacturing Engineering

# 3. Course details

**Credit points**

This is a 6 unit-of-credit (UoC) course and involves 12 hours per

**Contact hours**

| | Day | Time | Location |
|---|---|---|---|
| **Lectures** | Monday | 10am – 12noon | Ainsworth G01 |
| | Tuesday | 10am – 12noon | Ainsworth G01 |
| | Wednesday | 10am – 12noon | Ainsworth G01 |
| | Thursday | 10am – 12noon | Ainsworth 201 |
| **Problem-Solving Class** | Monday | | |

| Learning Outcome | EA Stage 1 Competencies |
|---|---|
| 3. Define the key components used in vehicle design and how these affect automotive performance outcomes. | 1.1, |

A case study will be used to help students enhance their understanding of the fundamental course concepts. A field trip will be organised to provide a hands-on experience to enrich the learning experience. Upon completion of the field trip, students will complete a technical report. The students will be provided with guided questions and feedback to support their technical writing.

## 5. Course schedule

| Week | Topic | Location | Day and Time |
|---|---|---|---|
| 1a | Introduction to automotive engineering | AW G01 | Mon 10am-12noon |
| 1b | Engine Technology | AW G01 | Tue 10am-12noon |
| 1c | Transmissions and Drivelines | AW G01 | Wed 10am-12noon |
| 1d | Transmissions and Drivelines | AW 201 | Thur 10am-12noon |
| 2a | Vehicle handling | AW G01 | Mon 10am-12noon |
| 2b | Industry Guest Speaker | AW G01 | Tue 10am-12noon |
| 2c | Tyres | AW G01 | Wed 10am-12noon |
| 2d | Brakes | AW 201 | Thur 10am-12noon |
| 3a | Ride and Vibration | AW G01 | Mon 10am-12noon |
| 3b | Suspension | AW G01 | Tue 10am-12noon |
| 3c | Vehicle Aerodynamics | AW G01 | Wed 10am-12noon |
| 3d | Revision | AW 201 | Thur 10am-12noon |

# Appendix A: Engineers Australia (EA) Competencies

*Stage 1 Competencies for Professional Engineers*

| | **Program Intended Learning Outcomes** |
|---|---|
| **PE1: Knowledge and Skill Base** | PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals |
| | PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing |
| | PE1.3 In-depth understanding of specialist bodies of knowledge |