



MECH 9325

**FUNDAMENTALS OF ACOUSTICS
AND NOISE**

Contents

1. Course S

1. COURSE STAFF

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2. COURSE DETAILS

Units of Credit

This is a six (6) unit of credit course.

Course Aims

This course is intended to provide an introduction to acoustics and noise. It constitutes a self-contained and practically useful body of knowledge in the field of acoustics. Important matters such as the measurement of sound and the effect of noise on people are considered. It is of particular value to students who are undertaking noise and vibration thesis projects. A laboratory component is included in this course.



Student learning outcomes

At the conclusion of this course, it is expected that you will be able to:

Describe the basic features of sound and noise including cause of sound, pure tones, decibel scales, loudness, and Australian standards for occupational noise management.

Describe the measurement and analysis of sound pressures using sound level meters and microphones.

Calculate the speech interference level and voice effort required for

- (c) capable of operating within an agreed Code of Practice
4. Global Citizens who are:
- (a) capable of applying their discipline in local, national and international contexts
 - (b) culturally aware and capable of respecting diversity and acting in socially just/responsible ways
 - (c)  

5. ASSESSMENT

Assignments (x2 @ 5% each)	10%
Laboratory exercises (x2 @ 10% each)	20%
Test	10%

6. RECOMMENDED READING

Smith, B.J., Peters, R.J. and Owen, S. Acoustics and noise control, 2nd edition, Addison Wesley Longman, 1996.

Norton, M.P. and Karczub, D. Fundamentals of noise and vibration analysis for engineers, 2nd Edition, Cambridge University Press, Cambridge, 2003.

Bies, D. A. and Hansen C.H. Engineering Noise Control: Theory and Practice, 3rd Edition, E&FN Spon, 2003.

7. RESOURCES FOR STUDENTS

All material corresponding to the units (lecture material), unit exercise solutions, assignments and practical handouts will be provided in UNSW Moodle. Extra handouts and further useful material will be posted periodically in Moodle. You are advised to check it regularly.

8. COURSE SCHEDULE

Lectures: Tuesday 2-5pm (OMB 232)

Laboratory 1: Descriptors for time varying noise levels

Laboratory 2: Measurement of sound power levels by the direct and the comparison methods

Enclosed footwear must be worn for the laboratories. Lab bookings for the laboratories will become available during lecture time.

9. ACADEMIC HONESTY AND PLAGIARISM

Plagiarism is using the words or ideas of others and presenting them as your own. Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a booklet which provides essential information for avoiding plagiarism:

<https://my.unsw.edu.au/student/academiclife/Plagiarism.pdf>

11. ADMINISTRATIVE MATTERS

Information about each of the following matters is presented in a School handout, *Administrative Matters*, available from the School website

https://www.engineering.unsw.edu.au/mechanical-engineering/sites/mech/files/u41/S1-2015_Admin-Matters.pdf