C L e L e

Se e 2 2016

MECH3110

MECHANICAL DESIGN 1

C e

1. Staff contact details

Dr Kana Kanapathipillai
Room: J17/408J
Tel (02) 9385 4251
Fax (02) 9663 1222
Email

Summary of the course

This course will continue the development of a systematic approach to problem solving and design that commenced in earlier courses. It will focus on mathematical modelling for design applications; force flow through components and assemblies; belt and chain drive design; rolling element bearing selection; dynamically-loaded bolted connections and welded-joint design; shaft design and explore these ideas in terms of practical applications.

Aims of the course

The course follows on from the introduction provided by ENGG1000, extends the machine element design approach introduced in MMAN2100 and provides an opportunity to apply the me [(el)G80.002 Tw 6.272 0 Td [(ou)11.2(r)-4.3k10.2c 6.272 0 49(N)2.2 .6(l)-8.3(l)2.6(f)-6.p.36(nt)-6(t)-

3. Teac a e e

This course attempts to approximate a typical design workplace environment in which accurate and professional quality results are required against cost and time constraints, information is incomplete or conflicting and team interaction is essential.

Lectures in this course are designed to cover the terminology, core concepts and techniques in the design of machines. They show how the various techniques are applied in practice and the details of when, where, and how they should be applied.

Problem solving guidance sessions are designed to provide feedback and discussion on the assignments, and to investigate problem areas in depth. Problem solving guidance will assist you to develop the capacity to make judgements based on sound engineering practice and solid theory. You will be expected to seek out necessary information, or ask for help.

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5. A e e

General

You will be assessed by way of assignments and quizzes, both of which involve calculations and descriptive material. The assignments consist of both individual and team based contribution as listed below.

Individual Assignments (2)	22%
Group Assignments (3)	50%
Quizzes (3)	28%
Total	100%

In order to pass the course, you must achieve an overall mark of at least 50%.

Assessment overview

The following table outlines the list of tasks associated with the course. The set assignments will be available on Moodle. The course will have 3 quizzes. The f.u5.72 592m 1 listd have l3e cour 368[0.

Assignments

The submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work. Presenting them clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

Submission

Late submissions will be penalised 5 marks per calendar day (including weekends). An extension may only be granted in exceptional circumstances. Where an assessment task is worth less than 20% of the total course mark and you have a compelling reason for being unable to submit your work on time, you must seek approval for an extension from the course convenor ***before the due date***. Special consideration for assessment tasks of 20% or greater must be processed through student.unsw.edu.au/special-consideration.

It is always worth submitting late assessment tasks when possible. Completion of the work, even late, may be taken into account in cases of special consideration.

Examination

There will be no final examination for this course during the formal university examination period.

Calculators

You will need to provide your own calculator, of a make and model approved by UNSW, for the quizzes. The list of approved calculators is shown at

There are numerous valuable resources available on the web.Students seeking additional resources can also obtain assistance from the UNSW Library. One starting point for assistance is: http://info.library.unsw.edu.au/web/services/services.html

7. Course evaluation and development

Feedback on the course is gathered periodically using various means, including the Course

(like plagiarism in an honours thesis) even suspension from the university. The Student Misconduct Procedures are available here: www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Further information on School policy and procedures in the event of plagiarism is available on the intranet.

9. Additional Policies

All students are expected to read and be familiar with School guidelines and polices, available on the intranet. In particular, students should be familiar with the following:

- Attendance, Participation and Class Etiquette
- UNSW Email Address
- Computing Facilities
- Assessment Matters (including guidelines for assignments, exams and special consideration)
- Academic Honesty and Plagiarism
- Student Equity and Disabilities Unit
- Health and Safety
- Student Support Services

Dr Kana Kanapathipillai
20/07/2016

10. Appendix A: Engineers Australia (EA) 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
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice
PE2: Engineering Application Ability	PE2.1 Application of established engineering methods to complex problem solving
	PE2.2 Fluent application of engineering techniques, tools and resources
	PE2.3 Application of systematic engineering synthesis and design processes
	PE2.4 Application of systematic approaches to the