Description: Mechanical Practice 4

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
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<td>MEC</td>
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<td>ONC</td>
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Academic Group: FOENS
Academic Org: FOES02
HECS Band: 2
ASCED Code: 030799

STAFFING
Examiner: Ruth Mossad
Moderator: Bob Fulcher

RATIONALE
The successful practice of the profession of Mechanical Engineering requires a clear understanding of the relationship between engineering and engineering practice. An ability to recognise when a particular theory is applicable and an ability to accommodate the deviations from the theory that occur in the real world is essential. Some knowledge of a wide range of practical techniques, proprietary devices, materials, construction methods etc is also necessary. The engineer must be able to assess a complex situation, identify the critical elements and develop a workable, cost effective solution. All of this requires considerable self-confidence, and the ability to work with and lead teams.

SYNOPSIS
This course aims at providing you with practical skills needed in many industrial processes. It is designed to teach you the different ways of measuring velocity of a fluid (gas or liquid), forces due to fluids and temperature of a fluid or a solid and heat flux. You will learn to estimate flow rates and head losses in fluid systems, and heat flux in thermal systems. The course is designed to help you review some of the basis of fluid mechanics and heat transfer as well as validate and relate these to practical situations.

OBJECTIVES
On completion of this course, students should be able to:

- conduct tests in accord with a general requirement;
- measure a variety of engineering quantities of an importance to many engineering processes;
- estimate the uncertainty in measuring the characteristics of fluid and gas flows;
- participate constructively in and lead a team.
TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Liquid flow rate measurements</td>
<td>15.00</td>
</tr>
<tr>
<td>2. Measuring forces due to the flow of fluids</td>
<td>10.00</td>
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<tr>
<td>3. Flow rate of gases and forces due to the flow of gases over bodies</td>
<td>25.00</td>
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<td>4. Head losses in straight pipes and fittings</td>
<td>25.00</td>
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<tr>
<td>5. Measuring temperature and estimate heat flux</td>
<td>25.00</td>
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</table>

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.


STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Directed Study</td>
<td>5</td>
</tr>
<tr>
<td>Laboratory or Practical Classes</td>
<td>20</td>
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<td>Private Study</td>
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ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<tr>
<td>INDIVIDUAL SKILLS COMPETENCY</td>
<td>500.00</td>
<td>50.00</td>
<td>Y</td>
<td>03 Oct 2003</td>
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<td></td>
<td></td>
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<td>(see note)</td>
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<td>GROUP SKILLS COMPETENCY</td>
<td>500.00</td>
<td>50.00</td>
<td>Y</td>
<td>03 Oct 2003</td>
</tr>
</tbody>
</table>

NOTES:

. All assessments must be completed by the end of the residential school for this course.
IMPORTANT ASSESSMENT INFORMATION

1 Attendance requirements:
   It is the students' responsibility to attend and participate appropriately in all activities
   (such as lectures, tutorials, laboratories and practical work) scheduled for them,
   and to study all material provided to them or required to be accessed by them to
   maximise their chance of meeting the objectives of the course and to be informed
   of course-related activities and administration.

2 Requirements for students to complete each assessment item satisfactorily:
   To complete the practical component satisfactorily, students must submit, by the
   due date, a practical report which meets the requirements of the assessment scheme.

3 Penalties for late submission of required work:
   Practical reports submitted after the due date will not be assessed.

4 Requirements for student to be awarded a passing grade in the course:
   To be assured of receiving a passing grade students must complete at least 80% of
   the practical and other activities at a satisfactory standard, as stated in 2 above.

5 Method used to combine assessment results to attain final grade:
   As P is the only passing grade available for this course, all students who are
   qualified for a passing grade, under the requirements in 4 above, will be given a
   grade of P. Other students will be given either a Failing grade or an Incomplete
   grade.

6 Examination information:
   There is no examination in this course.

7 Examination period when Deferred/Supplementary examinations will be held:
   Not applicable.

8 University Regulations:
   Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10
   Academic Misconduct for further information and to avoid actions which might
   contravene University Regulations. These regulations can be found at the URL
   http://www.usq.edu.au/SECARIAT/calendar/Part5/ or in the printed version of the
   current USQ Handbook.

ASSESSMENT NOTES

1 The due date for an assignment is the date by which a student must despatch the
   assignment to the USQ. The onus is on the student to provide proof of the despatch
   date, if requested by the Examiner.

2 Students must retain a copy of each item submitted for assessment. This must be
   despatched to USQ within 24 hours if required by the Examiner.

3 In accordance with University's Assignment Extension Policy (Regulation 5.6.1),
   the examiner of a course may grant an extension of the due date of an assignment
   in extenuating circumstances.

4 The Faculty will normally only accept assessments that have been written, typed
   or printed on paper-based media.

5 The Faculty will NOT accept submission of assignments by facsimile.
6 Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.

7 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.

8 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non-directed personal study.

9 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination; IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).