Course topics:
- Introduction to modeling and scientific computing,
- Root finding,
- Systems of linear algebraic equations,
- Systems of nonlinear algebraic equations,
- Functional approximations,
- Numerical integration and differentiation,
- Ordinary differential equations: initial value problems,
- Ordinary differential equations: linear boundary value problems,
- Ordinary differential equations: nonlinear boundary value problems (time permitting).

Instructor and TAs: Dr. Morris R. Flynn (4-31D MEC; mrflynn@ualberta.ca), Ms Alexis Kaminski (kalexis@ualberta.ca), Ms Amanda Kotchon (akotchon@ualberta.ca) and Mr. MingZhao Jin (mingzhao@ualberta.ca).


Lectures: Tuesday-Thursday 8:00 AM to 9:20 AM (ETLE 2-002).

Labs: Beginning the week of Jan. 16, Monday, Wednesday or Friday 10:00 AM to 10:50 AM (MEC 3-3).

(Hard) prerequisites: MATH 102, 201 and some exposure to computer programming. Experience with Matlab will prove beneficial but is not essential.

Dr. Flynn's office hours: beginning Jan. 19, Thursdays 9:30 AM to 11:00 AM or by appointment. Dr. Flynn will also participate in the labs the weeks of Jan. 16 and 23.


Weekly problem sets: Beginning Jan. 23, problem sets will be due Mondays by 10:00 AM in the box on the 4th floor of MEC. Problem sets will be distributed electronically through the course homepage listed above. Students are permitted to collaborate with one another in completing their assignments, but any submitted material must be one's own (see Academic honesty below).

Exams: 80 minute mid-term (Tuesday, March 6 in class), two hour final (day and time to be determined by the Registrar's Office). Both exams are closed book. For the midterm and final, respectively, a single- and double-sided 8.5 x 11 formula sheet is permitted.

1 Grading: Problem sets (20%), mid-term (30%), final (50%).

CEAB accreditation: The University of Alberta's engineering programs are evaluated on a periodic basis to ensure quality of instruction. As part of this evaluation process, copies of students' problem sets and exams (midterm and final) will be made and catalogued. Before making this material available to the accreditation review panel, student names and ID numbers will be removed, i.e. the department will endeavor to safeguard your privacy. Questions regarding the accreditation process can be directed to the department's chair of undergraduate studies, Dr. C.R. Koch.

Academic honesty: The University of Alberta is committed to the highest standards of aca-
demic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.uofaweb.ualberta.ca/secretariat/studentappeals.cfm) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Additional information: Policy about course outlines can be found in x23.4(2) of the University Calendar.

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Dr. Flynn’s grading policy
Summarized in table 1 is a generic grading scheme for a representative problem as might appear in an assignment or examination. Note that in order to adequately distinguish between mediocre and superlative students, the average mark on the mid-term(s) and _nal will typically fall between 55% and 75%. Please do not be overly discouraged if your mark is lower than you had hoped: your relative rather than your absolute standing will determine your _nal grade for the course. For undergraduate classes, the average _nal grade will typically fall between 2.5 and 3.2. For graduate courses, the average _nal grade will typically fall between 3.0 and 3.5. Students who are concerned that they may fail the course are strongly encouraged to speak to me well in advance of the _nal exam to see what avenues may be pursued.

Table 1: Generic grading scheme.
% of marks Material presented obtained
10 Little or no material presented. Equations irrelevant to the problem at hand.
20 Correct equations presented with little or no subsequent calculations.
40 Correct equations presented with incomplete or badly misguided follow-up calculations.
50 Correct approach marred by multiple conceptual aws OR right answer obtained using an incorrect approach.
70 Correct approach with a single conceptual aw.
75 Correct approach with multiple algebraic mistakes.
90 Correct approach with a single algebraic mistake (made towards the end of the problem).
100 Correct answer obtained using a correct (and well laid-out) methodology.

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