

Practical Programming Methodology

CMPT 201, Section AS40

Winter 2017

Instructor: Dr. Nesrine Abbas

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Office Hours: M: 10:00-11:00, 14:00-14:30, T: 11:00-12:00, R: 14:00-14:30

Lecture Time: T,R: 9:30-10:50

Lecture Room: 5-301

Course Hours: Lecture 45 Lab 36 Seminar 0

Course Description: This course provides an introduction to the principles, methods, tools and practices of the professional programmer. The lectures focus on best practices in software development and the fundamental principles of software engineering. The laboratories offer an intensive apprenticeship to the aspiring software developer. Students use C, C++, and software development tools of the Unix environment.

Course Objectives: Upon completion of this course, the student will be able to:

- Understand programming language concepts such as pointers and how programming languages interact with memory organization
- Be able to design and then code a solution to a problem given its specification
- Have experience in dealing with ambiguities in a specification
- Be proficient in the C programming language
- Be familiar with basic object-oriented programming support in the C++ programming language
- Be able to use basic software development tools in a Unix environment such as text editors, make files, debuggers, and profilers
- Understand the importance of design documents, end-user documentation and testing

Course Prerequisite: Minimum grade of C- in CMPT 115 or CMPT 200

Required Learning Materials: *C Programming A Modern Approach (second edition)*- K. N. King.

A Practical Guide to Linux – Mark G. Sobell, **OR** another basic UNIX reference. (The book mentioned here is useful for other courses)

Other Learning Resources: *The C Programming Language (second edition)*– Brian W. Kernighan, Dennis M. Ritchie. (optional textbook)

Evaluation:

Term Examination(s)	25%
Final Examination*	35%
Lab Assignments	30%
Lab Exercises	10%
	100%

Examination Dates:

Term examination Thursday, March 2nd

Final Examination* TBA

*Students are responsible for verifying the date of the final exam (see [here](#)).

Format of Examinations: Written

Grading:

MacEwan University adheres to the Alberta Common Grading Scheme, which is a 12 point letter grade system. While faculty may use percentages to aid in their grade development, only the letter grade will appear on transcripts.

A+	95-100
A	90-94
A-	85-89
B+	80-84
B	75-79
B-	70-74
C+	65-69
C	60-64
C-	55-59
D+	50-54
D	45-49
F	Below 45

Official grades will be provided by the Office of the University Registrar through myStudentSystem. A minimum grade of C– is required to receive transfer credit or to satisfy a prerequisite for a higher level course.

Student Responsibilities:

Students are expected to be aware of their academic responsibilities as outlined in MacEwan University Policy E3101: Student Rights and Responsibilities (found [here](#)).

1. **Academic Integrity:** All forms of student dishonesty are considered unacceptable. MacEwan University Policy C1000: Academic Integrity (found [here](#)) promotes honesty, fairness, respect, trust, and responsibility in all academic work. According to the policy, “Academic dishonesty involves participating in acts by which a person fraudulently gains or intentionally attempts to gain an unfair academic advantage thereby compromising the integrity of the academic process”. All incidents of academic dishonesty are reported and recorded by the [Academic Integrity Office](#). The penalties and sanctions for academic dishonesty can include the following: a mark reduction up to zero on a piece of academic work, a grade reduction up to an F in the course, and suspension or expulsion (with transcript notation) from the University. Please see the academic integrity policy for more details. You are responsible for understanding what constitutes academic dishonesty.
2. **Registration Status:** You are responsible for your registration status at the University. Academic advisors (Rm 6-211) may assist you with the process of registration, including adding or dropping of courses, but it is your responsibility to verify that these changes have been officially completed. This verification can be done at any time using myStudentSystem. You should check your official registration status before the last date to officially withdraw from the course.
3. **Course prerequisites:** Students are responsible for having all prerequisites required for a given course. Prerequisite checks are periodically carried out and any students who do not have the appropriate prerequisite may be removed from the course. If you are removed from the course, you may be responsible for any tuition costs up to the date of removal. Any courses from another post-secondary institute cannot be used as a prerequisite until assessed and approved for transfer credit.
4. **Withdrawing From The Course:** If you stop attending class you must complete a [Course Drop Form](#), have it signed by a Academic Advisor (Rm 6-211), and submit it to the Office of the University Registrar by the last day to withdraw as provided in the [Academic Schedule](#) in the [Academic Calendar](#). Failure to officially withdraw will result in a grade being assigned

based on course work completed. Late withdrawals are only allowed in exceptional circumstances.

5. **Attendance and Punctuality:** Some lab activities require a demo to get marks, this may only be completed in-person.
6. **Exams:** Your student photo I.D. is required at exams. It is at the discretion of the instructor whether you will be allowed to write the exam if you arrive over 15 minutes after the exam has begun. You must remain in the exam room for at least 20 minutes from the time it commenced. Only calculators approved for use by the instructor may be used during examinations, which include any laboratory and lecture quizzes. Any devices capable of external communication, such as cell phones, iPods and blue tooth enabled devices, cannot be used for exams of any type. Permission to use the washroom during exams is at the discretion of the instructor and may require accompaniment.
7. **Missed Term Exams:** If you miss a term examination you must provide the instructor with an explanation within 24 hours or a mark of zero may be given. Notification may be provided through email, voice mail, or direct contact with the instructor. Official documentation as to why the examination was missed will be needed to assess whether your absence will be excused or not. If your absence is excused the weight of this examination will be added to the weight of the final examination in the course. Medical excuses must include the date you were examined, the specific dates for the period of the illness, a clear statement indicating that the severity of the illness prevented you from attending school or work, and the signature of the examining physician (a signature by office staff on behalf of the physician is not acceptable). Medical notes obtained subsequent to the date of the examination are generally not accepted. A mark of zero will be given if the instructor considers the excuse inappropriate or inadequately substantiated.
8. **Final Exams:** You are responsible for accessing and confirming the official date, time, duration and location of the final exam. The Office of the University Registrar releases the official schedule no later than half-way through the term. This schedule is available [here](#) . **Students are required to be available for the *entire* exam period.** For further information, see MacEwan University Policy C2005: Final Assessment (found [here](#)).
9. **Deferred Final Exam:** University policy allows for the deferral of exams for extenuating circumstances, such as illness or catastrophic events. To apply for a deferral, see Program Services (Rm 6-211). Applications must be received by Program Services within two business days of the missed exam. **A fee of \$50 per exam, up to a maximum of \$100, will be charged to your account.** Note that a vacation, even if paid for and/or documented, is *not* grounds for an exam deferral. [Application forms](#) are available from the Program Services office, and must be submitted with appropriate documentation. Students should advise their instructor prior to the examination if they know beforehand that they will be unable to attend the scheduled examination time. If you have any questions about the process please contact Program Services (780 497 4505 or ArtsandScience@macewan.ca). For further information please refer to MacEwan University Policy C2005: Final Assessment (found [here](#)) and Policy C2020: Grading (found [here](#)).
10. **Late Assignments (including laboratory assignments):** As due dates for assignments are known well in advance, medical and other excuses are generally not accepted as a reason for submitting late assignments.
11. **Cell Phones:** All cell phones are to be turned off during class and exam periods (except under exceptional circumstances in which approval has been given by the instructor).
12. **Students With Disabilities:** Students with disabilities who may have special requirements in this course are advised to discuss their needs with Services to Students with Disabilities located in the Student Life office. You should advise the course instructor(s) of any special needs that are identified. See Policy E3400 Students with Disabilities (found [here](#)).

13. **Student Appeals:** The University has a policy regarding Student Appeals (E3103, found [here](#)). You should access this policy to become aware of the deadlines and guidelines that need to be followed if you are appealing a grade or other University assessment. Assistance with the appeals process is available through counsellors in the Student Life office. Please call 780 497 5064 to make an appointment.
14. **MyMacEwan.ca Email:** All students are given a <name>@mymacewan.ca email address. This email address is available to the course instructor who may distribute relevant course information or announcements via email. The Faculty of Arts and Science regularly communicates with students via email. Check your mymacewan.ca email regularly *or* forward it to an email address you check regularly. If you use email to communicate with your instructor, you *must* use your mymacewan.ca account. This is to protect your privacy; if a non-mymacewan.ca account is used, there is no way for an instructor to verify the identity of the sender.

Disclaimer: *The information in this course outline is subject to change. Any changes will be announced in class or, if applicable, in the laboratory.*

Lecture Topics:

Week	Topics
1. Jan. 3-6	Introduction; UNIX basics;
2. Jan. 9-13	Intro to C (Chapter 1,2), make
3. Jan. 16-20	Data Types/Input/Output/ (Chapter 3,7), testing
4. Jan. 23-27	Expressions/Selection/Loops/Arrays (Chapter 4-6,8)
5. Jan. 30-Feb. 3	Functions and Program Organization (Chapter 9, 10)
6. Feb. 6-10	Pointers and Arrays (Chapter 11, 12)
7. Feb. 13-17	Dynamic Memory Allocation (Chapter 17)
8. Feb. 20-24	Reading Week, no classes
9. Feb. 27-Mar. 3	Data Arrangement, Program Design (Chapter 14,15,16)
10. Mar. 6-10	Program Design (Chapter 18, 19)
11. Mar. 13-17	Principles of team work Version Control, Introduction to Secure Coding
12. Mar. 20-24	C++ Intro
13. Mar. 27-31	C++ Design Comparison, Generic Programming
14. Apr. 3-7	Final Review