University of Lethbridge
Department of Mathematics and Computer Science

Computer Science 2720 – Practical Software Development
Course Outline – Spring 2016

LECTURES: Tu Th 9:25 a.m. – 10:40 a.m.   **ROOM:** C610

INSTRUCTORS: Robert Benkoczi (office C556)
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TEXT: *Flexible Reliable Software*
by Henrik B. Christensen
C++ Primer, 5th Ed
by Lippman, Lajoie, Moo (recommended)
UML Distilled, 3rd Ed
by Martin Fowler (recommended)
Design Patterns: Elements of Reusable Object-Oriented Software
by Gamma, Helm, Johnson, and Vlissides (recommended)

GRADING SCHEME:

Assignments (approx 6)	25%
Term project	25%
Quizzes	10%
Final exam	40%

GRADE CUTOFF: This information is provided as a guideline only and may be revised in this offering.

A+	96	B+	82	C+	70	D+	56
A	90	B	78	C	66	D	50
A-	86	B-	74	C-	62	F	< 50

TOPICS: (as time permits):

1) Inheritance, polymorphism, review of object oriented design and programming.
2) Elements of UML (Unified Modelling Language).
3) Agile development processes, reliability, flexibility and maintainability of software.

4) Test driven development.
5) Build management, version control, and some project management issues; exposure to make, git, and github. Generating documentation using doxygen.
6) Design patterns: the problems addressed by patterns and discussion of alternative solutions with a look at coupling and cohesion of code. Compositional design principles and handling variance in code.
7) Refactoring and integration testing. Test stubs.
8) Frameworks, if time permits.

COMMENTS:

Projects
– are team based.
– Some component of your project grade will be based on your personal contribution to the project as assessed by your team members.

Grades and late submissions
– Work must be handed out at the scheduled time; no provision is made for late submissions, except for medical reasons or emergencies. Talk to your instructor if you are unsure what qualifies for an emergency. Missed or late submissions receive 0 points.
– Requests for remarking project work and assignments are accepted only in writing *no later than one week from the date your graded work was returned*. You can e-mail your request to me. On the request: identify the assignment or deliverable and briefly explain why you believe the mark is incorrect. Note that if your work is remarked, your grade may go up, down, or remain unchanged.
– Plagiarism and cheating are serious academic offences. See the calendar for information on rules and penalties. Any student or team found to have submitted copied work will receive a grade of zero and further action may be taken.

Attendance
– Lectures and labs are essential for this type of course. It is strongly recommended that you attend both labs and lectures.

LINKS
– Moodle, for course resources: `http://moodle.uleth.ca/`
– Instructor's home page: `http://www.cs.uleth.ca/~benkoczi/`