THE UNIVERSITY OF WINNIPEG

APPLIED COMPUTER SCIENCE

ACS-3901-001 – Principles of Software Project Management

Instructor Information

Instructor: Dr. Sheela Ramanna   **E-mail: s.ramanna@uwinnipeg.ca**

Class Meeting Time: T, Th 1:00 - 2:15pm   **Lecture Room No:** 3D01

Office Hours: T,Th: 2:15-3:15 pm, Friday 1:30 – 2:30pm (by appointment) VIA ZOOM*

ZOOM coordinates will be communicated via email.

Important Dates

1. First Class: Jan. 7
2. Midterm exam: Feb. 25 (in person)
3. Final Withdrawal Date w/o academic penalty: March 14
    (A minimum of 20% of the work on which the final grade is based will be evaluated and available to the student before the voluntary withdrawal date)
4. Reading Week: Feb 16-22, (No classes)
5. Last Class: April 3
6. Final Exam (Comprehensive): TBD (in person)
7. The university will be closed on February 17 (Louis Riel Day), April 18 (Good Friday)

Lectures on Feb 11 and February 13 will be recorded and uploaded on nexus. There are no in-person classes and office hours in the week of February 10-14.

Course Objectives/Learning Outcomes
This course covers principles and techniques of software project management, with emphasis on the **theoretical underpinnings of the competencies that are associated with software project management**. The key concepts of project planning, organization, and control are covered. Specific topics covered include task breakdown; estimating, scheduling, and tracking; process and project metrics; change control; risk analysis and management; software quality models; quality assurance; and configuration management. This course has been specifically designed to also cover project management techniques **practiced in the 4th year** capstone ACS-4901/6 Systems Development Project course related to the **Agile methodology**. We will also study the following project, product and people competencies:

- ➢ Selecting Software Development Lifecycles
- ➢ Project Teams and Roles --Team Selection
- ➢ Preparing Project Plans, Proposal and PPR
- ➢ Software Sizing and Cost Estimation Models
- ➢ Scheduling with PERT/CPM
- ➢ Risk Management Model
- ➢ Software Metrics, CMM model and GQM Paradigm
- ➢ Verification and Validation (Reviews, White and Black Box testing)
- ➢ Project Tracking and Control
- ➢ Quality Assurance and Configuration Management

Lecture Format
- There will be in-class problem solving sessions for quantitative aspects of this course. The schedule and other details for these sessions will be announced on the first day of class.

Evaluation Criteria

Assignments/Group work (3)	20%
Mid Term Exam	35%
Final Exam (cumulative)	45%

Assignments involving group work will require the use of such tools as:
- ➢ Trello or Jira Collaboration Tool
- ➢ Cost Estimation Tool
- ➢ GitHub distributed revision control and source code control tool
- ➢ Agilefant – project management tool for agile model
- ➢ May also require teams to independently investigate other open-source tools

Each team/group may be composed of 4-6 team members. It is the student's responsibility to join a team in the first week of classes. There will be ONE individual assignments and TWO group assignments. The group assignments are intended to give the 3901 class, experience of preparing deliverables in the early phases of a typical software life cycle. Details of methods of assignment submission will be communicated in class.

NO LATE WORK will be accepted. *Please contact me as soon as possible* if extenuating circumstances require you to miss a class, deadline, or examination. Should illness prevent participation in a test or examination, a medical certificate from a certified physician must be supplied before any adjustments are considered.

Test / Exam Requirements
- Exams will be delivered in person.
- Photo ID is required for the final exam.
- The use of computers, phones, or other electronic devices is not permitted during exams.
- Midterm and final exams are closed book.
- The midterm and the final exam will test both factual knowledge and the ability to apply course material to real life situations and problems. Answers on exams must be meaningful to achieve potential credit.

Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at 204-786-9771 or accessibilityservices@uwinnipeg.ca to discuss appropriate options. All information about a student's disability or medical condition remains confidential.
https://www.uwinnipeg.ca/accessibility-services

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work examinations without penalty. A list of religious holidays can be found in the Undergraduate Academic Calendar online at
http://uwinnipeg.ca/academics/calendar/docs/important-notes.pdf

Final Letter Grade Assignment
Historically, numerical percentages have been converted to letter grades using the following scale. However, instructors can deviate from these values based on pedagogical nuances of a particular class, and final grades are subject to approval by the Department Review Committee.

A+	90+ - 100%	B	70 - 74%	F	below 50%
A	85 - 90%	C+	65 - 69%		
A-	80 - 84%	C	60 - 64%		
B+	75 - 79%	D	50 - 59%		

Required Text Book(s)/Reading List*
- Quality Software Project Management by Futrell, Shafer, and Shafer, Prentice Hall, 2002, ISBN: 0-13-091297-8
- Class Notes will be available on Nexus.

Prerequisite Information (This information can be found in the UW General calendar)
- A grade of at least C in ACS-1904(3), ACS-2913(3), (or the previous ACS-2911(3) and ACS-2912(3)) and ACS-2814(3) (or the former ACS-2914(3)).

Student Wellness

The University of Winnipeg affirms the importance of student mental health and our commitment to providing accessible, culturally appropriate, and effective services for students. Students who are seeking mental health supports are encouraged to reach out to the Wellness Centre at studentwellness@uwinnipeg.ca.

Regulations, Policies, and Academic Integrity

Academic dishonesty is a very serious offense and will be dealt in accordance with the University's policies.

Avoiding Academic Misconduct: Students are encouraged to familiarize themselves with the Academic Regulations and Policies found in the University Academic Calendar at:
https://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf
Particular attention should be given to subsections 8 (Student Discipline), 9 (Senate Appeals) and 10 (Grade Appeals). Please note, in particular, the subsection of Student Discipline pertaining to plagiarism and other forms of cheating.

Detailed information can be found at the following:

- Academic Misconduct Policy and Procedures:
  https://www.uwinnipeg.ca/policies/docs/policies/academic-misconduct-policy.pdf and
  https://www.uwinnipeg.ca/policies/docs/procedures/academic-misconduct-procedures.pdf
- UW Library video tutorial "Avoiding Plagiarism"
  https://www.youtube.com/watch?v=UvFdxRU9a8g

Uploading essays and other assignments to essay vendor or trader sites (filesharing sites that are known providers of essays for use by others who submit them to instructors as their own work) involves "aiding and abetting" plagiarism. Students who do this can be charged with Academic Misconduct.

Academic Integrity and AI Text-generating Tools: Students must follow principles of academic integrity (e.g., honesty, respect, fairness, and responsibility) in their use of material obtained through AI text-generating tools (e.g., ChatGPT, Bing, Notion AI). Use of AI Tools is prohibited in this course: students may face an allegation of academic misconduct if using them to do assignments.

Non-academic misconduct: Students are expected to conduct themselves in a respectful manner on campus and in the learning environment irrespective of platform being used. Behaviour,

communication, or acts that are inconsistent with a number of UW policies could be considered "non-academic" misconduct. More detailed information can be found here:

- Respectful Working and Learning Environment Policy
  https://www.uwinnipeg.ca/respect/respect-policy.html,
- Acceptable Use of Information Technology Policy
  https://www.uwinnipeg.ca/policies/docs/policies/acceptable-use-of-information-technology-policy.pdf
- Non-Academic Misconduct Policy and Procedures
  https://www.uwinnipeg.ca/policies/docs/policies/student-non-academic-misconduct-policy.pdf and https://www.uwinnipeg.ca/policies/docs/procedures/student-non-academic-misconduct-procedures.pdf

Copyright and Intellectual Property. Course materials are the property of the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides—irrespective of format. Students who upload these materials to filesharing sites, or in any other way share these materials with others outside the class without prior permission of the instructor/presenter, are in violation of copyright law and University policy. Students must also seek prior permission of the instructor/presenter before, for example, photographing, recording, or taking screenshots of slides, presentations, lectures, and notes on the board. Students found to be in violation of an instructor's intellectual property rights could face serious consequences pursuant to the Academic Misconduct or Non-Academic Misconduct Policy; such consequences could possibly involve legal sanction under the Copyright Policy
https://copyright.uwinnipeg.ca/docs/copyright_policy_2017.pdf

Privacy
Students have rights in relation of the collecting of personal data the University of Winnipeg
- Student Privacy: https://www.uwinnipeg.ca/privacy/admissions-privacy-notice.html
- Zoom Privacy: https://www.uwinnipeg.ca/privacy/zoom-privacy-notice.html

Class Cancellation, Correspondence with Students and Withdrawing from Course

When it is necessary to cancel a class due to exceptional circumstances, the course instructor will make every effort to inform students via uwinnipeg email and Nexus.

Students are reminded that they have a responsibility to regularly check their uwinnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or the course instructor**.**

Please let course instructor know if you plan on withdrawing from the course. Note that withdrawing before the VW date does not necessarily result in a fee refund.

<u>Tentative List of Topics</u>

Topic	Chapters*
Competencies and Definitions, SDLC	Chap.1 and 3
Selecting SDLC -- Review of Process Models	Chap. 4
Project Teams and Roles --Team Selection	Chap.6, 12, 29
Project Planning and WBS -- Project Proposal/Charter	Chap.7 and 8
Tasks, Activities -- Project Plan Creation	Chap. 9
Software Sizing – Size Estimation Models	Chap.10
Estimating Duration and Cost – Cost Estimation Models	Chap. 11
Scheduling **–** PERT/CPM Scheduling Models	Chap. 14 and 15
Software Requirements Specification—Creating SSR	Chap. 16 and 17
Risk Management – Quantitative Risk Assessment	Chap. 18
Software Metrics – Quantitative Product and Process Metrics Assessment	Chap. 21
V&V- Testing strategies, test coverage and path measures	Chap. 23**
Project Tracking and Control – Quantitative Schedule and Progress Management, Error Tracking	Chap. 25**
SQA and SCM	Chap. 30**, 31**

* Not all the materials in the above chapters will be covered.
** These chapters are not included in the new edition. Notes will be given and the 2002 edition of the text book is placed on reserve in the library

Note: A permitted or necessary change in mode of delivery may require adjustments to important aspects of course outlines, like class schedule and the number, nature, and weighting of assignments and/or exams.