



Welcome to SENG 321
Requirements Engineering
Let's make this an engaging course

Professor Hausi A. Müller PhD PEng FCAE
Department of Computer Science
Faculty of Engineering
University of Victoria

<http://www.engr.uvic.ca/~seng321/>
<https://courses1.csc.uvic.ca/courses/201/spring/seng/321>

Quiz 1	Wed, Feb 24	In class	2% of course
Midterm (revised)	Wed, Mar 2	In class	14% of project
Deliverable S2a (revised)	Fri, Mar 4	S2a Detailed req. spec; conceptual design	10% of project
Deliverable S2b (revised)	Tue, Mar 8	S2b Class presentation of S2a to customer	5% of project
Deliverable C2 (revised)	Thu, Mar 10	C2 feedback on S2a&S2b	5% of project
Deliverable S3a	Tue, Mar 15	S3a Technical Design Spec	15% of project
Deliverable S3b	Tue, Mar 22	S3b Manual	10% of project
Deliverable C3	Thu, Mar 24	C3 feedback on S3a&S3b	10% of project
Easter break	Mar 25-28	Fri, no class	
Deliverable S4	Mar 29-31	S4 project demo	10% of project
Deliverable C4	Mar 29-31	C4 feedback on S4	5% of project
Last Day of Classes	Fri, Mar 31		
Final Exam	Sat, Apr 16	19:00-22:00 ECS 125	35%

SENG 321 Calendar

Announcements

- S2 & C2
 - Posted
 - S2 number of pages
 - Prototype sophistication
- Fri, March 4
 - S2a due
- Tue, March 8
 - S2b due
 - Presentations in labs
 - Attendance required
- Thu, March 10
 - C2 due
 - Feedback on S2a & S2b

- Final Exam**
 - Sat, April 16
 - 19:00-22:00
 - ECS 125

The S2b Show

Prep

- 5 - 7 polished slides (at most) in pptx, ppt, or pdf form
- Send slides to submit@rigiresearch.com by Monday — 11:55 pm
- Team number (e.g., Team 7) on every slide
- Order of presentation arranged by TAs

Developers presentation

- Entire group must be on stage
- 7 min → Presentation
- 2 min → Questions
- Presenters: 1-4 people

Customers questions

- Entire group must be on stage
- Customers must ask two "good" questions

Audience

- Must evaluate every developer presentation using evaluation form

Evaluation Form

SENG 321 S2b Presentations Evaluation Form

Evaluator's name: _____

Team 1: Trevor Baker, Chris Carr, V. Louis Kraak, Diksha Sharma

Quality of presentation	
Developers: Do I know now what the project is all about?	5
Developers: Did the presenters communicate the requirements effectively?	5
Developers: Did I learn something? Did the presentation stimulate my interest?	5
Developers: Presentation style: positive attitude; excited about the subject?	5
Developers: How did the presenter perform in the Q&A session?	5
Subtotal	25

Detailed explanation — required

Code of Ethics

Professional Engineers and Geoscientists of BC
www.apeg.bc.ca

- Hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace;
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- Act as faithful agents of their clients or employers, maintain confidentiality and avoid a conflict of interest but, where such conflict arises, fully disclose the circumstances without delay to the employer or client;
- Uphold the principle of appropriate and adequate compensation for the performance of engineering and geoscience work.
 - Keep themselves informed in order to maintain their competence, strive to advance the body of knowledge within which they practice and provide opportunities for the professional development of their associates;
 - Conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due and accept, as well as give, honest and fair professional comment;
 - Present clearly to employers and clients the possible consequences if professional decisions or judgments are overruled or disregarded;
 - Report to their association or other appropriate agencies any hazardous, illegal or unethical professional decisions or practices by members, licensees or others; and
 - Extend public knowledge and appreciation of engineering and geoscience and protect the profession from misrepresentation and misunderstanding.

Review Techniques

- Reading and signing off
- Walkthroughs
- Formal inspections
- Focused inspections
- Active reviews
- Checklists

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Reading and Signing off

- Reading
 - Read and look for errors
 - We all don't see mistakes in our own work, and it is beneficial to have someone else look at our own work
- Signing off
 - Reviewer signs off (approves) after reading the document
 - Makes the reviewer partly responsible if errors are subsequently found in the document—P.Eng.
 - Encourages the reviewer to be more thorough
 - Best not to have the author do this!

You are doing reviews to complete C2 😊

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Review Techniques

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Types of Group Reviews

- Walkthroughs
 - Informal, often high-level overview
 - Often led by author/expert to educate others on his/her work
 - Goal may be knowledge transfer or finding errors or both
 - Highly successful
- Inspection
 - Structured inspection of requirements (or code)
 - Usually, a very detailed examination of an artifact
 - Participants have defined roles; preparation required; paperwork generated; often follow-ups too.

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Walkthroughs

- An expert or the author presents the specification
 - The other participants ask questions and give comments
- The tone of the meetings is informal.
- Participants may have different levels of understanding going into a walkthrough, so walkthroughs can also be tutorials.
- Advantage
 - Few demands on the participants, so reviewers may be more likely to attend than if they had to read the document in order to participate.

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Walkthroughs

Walkthroughs are used more often in reviews of requirements documents than in reviews of other software documents

- Reviews of requirements documents involve a large number of people, since there are usually a large number of stakeholders to consult, and it may prove impossible to get everyone prepared for a more formal review.
- In such cases, a walkthrough may be the only reasonable way to ensure that the stakeholders have actually looked at the material.
- With a large audience, preferably one that represents a broad cross section of skills and viewpoints, there is a hope that there are no major oversights in the requirements
- In other words, multiple heads are better than one, and redundancy helps.

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Review Techniques

- Reading and signing off
- Walkthroughs
- **Formal inspections**
- Focused inspections
- Active reviews
- Checklists

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Formal Inspections [Fagan 1976]

- A formal inspection is a **managed** review process, with rules concerning participants and roles, and with strict entry and exit criteria for each step in the process.
- The idea behind formal inspections is to improve the quality of the requirements specification.
- The purpose of the **walkthrough** is to gain some assurance that there are **no major oversights** in the requirements document.
- The purpose of the **formal inspection** is to strive for a **zero-defect** requirements specification.

http://en.wikipedia.org/wiki/Fagan_inspection

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Process for Formal Inspection

- Formal inspections are characterized by rules on who should participate, how many reviewers should participate and what roles they should play
 - There should be from 3 to 5 reviewers:
 - author, moderator (≠author), and other reviewers
 - The **author**, who is typically the main author of the requirements specification, serves as the presenter of the SRS.
 - The **moderator** initiates the inspection, convenes the meeting, assigns roles, controls the meeting, decides whether to do another inspection, and prepares the other reviewers.
 - Other **reviewers** prepare for inspection by reading the requirements specification and identifying errors. This inspection is often performed using **checklists of common errors**—possibly different for each reviewer.

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Postponing Meetings

- One of the moderator's responsibilities is to postpone the inspection meeting if it appears that a participant is insufficiently prepared
- If a meeting is postponed due to a particular reviewer, it is unlikely that the reviewer is unprepared again.

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Formal Inspection Meeting

- Prior to the meeting, there is a **walkthrough** to familiarize the reviewers with the document to be inspected.
- Reviewers receive copies of the SRS, and each prepares for the inspection meeting by reviewing the SRS privately to find as many problems as possible, possibly according to his/her checklist.
- The focus of the inspection meeting is on **finding problems**, rather than **fixing them**.
 - No time is wasted to fix problems; indeed, a fix may be invalidated by a problem or fix found later. Fixing is left to the author after the inspection meeting.

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Formal Inspections

- The moderator's main job at the inspection meeting is to keep the focus on finding problems and to cut off any digression to solution finding
- Usually if less than 5% of the material is reworked, there doesn't need to be another inspection. **Avoid analysis paralysis.**
 - You may consider having another inspection if even less than 5% is reworked
 - You should consider the criticality of the rework
 - It is common to introduce new problems when fixing old problems and these may need to be found by inspection.

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Formal Inspections


- Inspection meetings are cut off after 2 hours.
 - Reviewers' error detection rates go down after 2 hours, and it is better to wait and continue only when the reviewers are fresh.
- An inspection is considered complete only when the rework is complete.
- Error data are collected, reported, and analyzed.
- **Important note**
 - The author's manager is not allowed to sit in on the review or to see the data! **Critical for success!!**
 - Inspections are not to be used for employee evaluation
 - Inspections are to be used to identify errors in the SRS so that the software can be fixed and future inspections can be improved.



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Formal Inspections

- One of the motivations behind formal inspections is to give management a way of measuring and managing quality assurance.
- What can an analysis of detected errors tell us?
 - It can reveal new types of errors that should be added to the checklists to help with future inspections (i.e., process improvement)
 - It can identify projects that are likely to be problematic, because more errors were reported than usual.
 - Tracking and evaluation of entry and exit points can help determine whether the project is on schedule.




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Reviewers are Human

con·de·scend·ing
/ˌkɑndəˈsendɪŋ/ ⓘ

adjective
having or showing a feeling of patronizing superiority.




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if (k != 0) p->key = measure / k;
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Short-circuit evaluation

[em-puh-thet-ik] / ɛm pəˈθet ɪk/ adjective. of, relating to, or characterized by **empathy**, the psychological identification with the feelings, thoughts, or attitudes of others: a sensitive, **empathetic** school counselor.



Empathic | Define Empathic at Dictionary.com



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- 4) Act as faithful agents of their clients or employers, maintain confidentiality and avoid a conflict of interest but, where such conflict arises, fully disclose the circumstances without delay to the employer or client;
- 5) Uphold the principle of appropriate and adequate compensation for the performance of engineering and geoscience work;
 - 6) Keep themselves informed in order to maintain their competence, strive to advance the body of knowledge within which they practice and provide opportunities for the professional development of their associates;
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 - 8) Present clearly to employers and clients the possible consequences if professional decisions or judgments are overruled or disregarded;
 - 9) Report to their association or other appropriate agencies any hazardous, illegal or unethical professional decisions or practices by members, licensees or others; and
 - 10) Extend public knowledge and appreciation of engineering and geoscience and protect the profession from misrepresentation and misunderstanding.

