Simon Fraser University

© Steve Whitmore
May 2018

Time Management
Engineering Journals
Team Meetings and Minutes
Teamwork Inventories

School of
Engineering Science

What Classes Are Mandatory?

Some folks want to know which classes are mandatory. The answer depends upon the following:

1. Classes are all mandatory due to the minimum number of ENSC 405W classes and the importance of the information as well as professional behaviour. Missing 3 classes without a valid excuse costs 10% of your grade. Feel free to lose that 10%. You are all adults and it's your call; I have done so myself in the past. A couple of students have done the same with the journal (also 10%). Your call.

2. I require a medical note, an accident report, etc. to excuse an absence:
   - ✓ Exception: those who have completed ENSC 304 with at least a C- are exempted from the User Interface lectures. Please e-mail me if you have successfully completed ENSC 304).

3. If you miss a Design Progress Meeting or Guest Speakers, additional penalties apply.

4. A few people may have *bona fide* conflicts with another course and will be exempted (but some classes are still required). These arrangements must be documented and arranged with Steve ahead of time.

5. Everyone is allowed one unexplained absence, without penalty.

School of
Engineering Science

Learning Objectives

By the end of this module, you will have a basic understanding of the following:

➢ Self-Regulation

➢ Issues of time management

➢ Requirements for Engineering Journals, Work Breakdown Charts

➢ Team meetings and teamwork inventories

➢ Meeting minutes

School of
Engineering Science

Self-Regulation

➢ *Self-Regulated Learning* describes the process of taking control of and evaluating your own learning and behavior.

➢ Self-regulation is guided by 3 principles:

1. *Metacognition* (thinking about your own thinking): understanding requirements, assessing yourself, planning tasks, applying strategies and monitoring performance, and reflecting and changing.

2. *Strategic action* (evaluating personal progress against a standard).

3. *Motivation to learn* (what do you want from your learning?).

4. Note that professional organizations are *self-regulated*. It is both a social and psychological construct. Thus, self-regulation applies to you **and** your teams.

➢ Self-regulation is a *threshold concept* for 405W/440. If you don't understand how to self-regulate, you will inevitably get a lousy grade. **We will guide, but you will decide.**

Grade School Metacognition Graphic

UNDERSTAND
the
assignment

REFLECT
and
CHANGE
if needed

YOU!
MOTIVATION
BELIEFS about
Intelligence &
learning

KNOW
Strengths and
weaknesses

APPLY
strategies &
MONITOR
performance

PLAN
**Who, What, When,
Where, Why,
How**

Time Management, Engineering Journals, Team Meetings

School of
Engineering Science

Workload for 405W

➤ 13 weeks X 4 credit hours X 4 hours work per credit hour = 208 hrs/person for ENSC 405W ($\cong$ 5 work weeks):

- Group of 3 = 624 hrs (15.6 work weeks)
- Group of 4 = 832 hrs (20.8 work weeks)
- Group of 5 = 1040 hrs (26.0 work weeks)
- Group of 6 = 1248 hrs (31.2 work weeks)

➤ This is about a 20% reduction from 305W/440 (5 credit hrs.)

➤ 1 person working full-time (40 hrs/wk) works 47 adjusted work weeks in a year. (The adjustment accounts for 3 weeks of vacation and 2 weeks of statutory holidays).

Time Management

Warning: You are already behind schedule!

➢ Keep **schedules** of the tasks you need to do (use a smart phone, day planner, poster, your journal). Plan as far ahead and in as much detail as you can. The better your planning in May, the greater your success in August (and the easier will be 440).

➢ Make **prioritized** "To Do" lists: **A** – must do, **B** – should do, **C** – like to do. Do tasks which add the greatest value to the project.

➢ Say **no** to interruptions, friends who want to party, etc.

➢ **Combine** activities wherever possible.

➢ Analyze your **commitments**: Are you taking 21 credits? Working part time? Heavily involved in outside activities?

➢ Develop a **Plan B**. What will you do if your parts arrive late or don't work? What can you substitute? Where can you get alternatives? What if your design doesn't work (worst case)?

Time Management (cont'd)

School of
Engineering Science

Time Management (cont'd)

➢ Avoid **perfectionism**: An A is as good as an A+ and about half the effort. A clear hand-drawn circuit is nearly as good as one produced using a computer.

➢ Use *Microsoft Project* for Critical Path Method (CPM), to plan **who** (personnel) needs **what materials/space** (resources) **when** (time). Identify **dependencies** between parts of the project. Copies of MS Project are available in the upstairs lab. Use it!

➢ Schedule adequate time for **rest and play**, or you will burn out. Ensure you **eat** properly.

➢ Much of the work will take place in the final 3 weeks of the semester – **debugging and integration** will drive you crazy (and invariably takes 3 times as long as you have planned for).

➢ **Divide up large tasks** such as writing documentation, designing systems, assembly. **Modularize everything**.

➢ **Ensure critical material is understood by two team members.**

Document Submission

➢ Proposal, Requirements Spec, Design Spec, Teamwork Inventories, and Poster Presentation must be emailed as an attachment in .pdf format to whitmore@sfu.ca.

➢ The documents will be commented using mark-up tools and mailed back to the **team contact person**, who is responsible for distributing them to the other team members. Read the comments closely. Talk with the TA if you have questions about their comments.

➢ Please use the following document naming convention for your attached files: **aprop.pdf, breqs.pdf, cdesi.pdf,** where **a/b/c** = your team letter (a to h).

➢ Engineering journals are submitted during poster presenta-tions (Aug 02). Returned in the first week of the following semester, so you can continue them in 440 if you desire.

Rubrics

➢ What are **rubrics**? Simply a way of ensuring that everyone has the same specific information needed to complete a given task.

➢ The TA and Instructor use the rubrics for assessing your work. So does CEAB (the Canadian Engineering Accreditation Board).

➢ The rubrics function as the requirements for the assignment – meet the requirements and you will likely do well.

➢ About a quarter of the teams in past 405W teams gave up 5-20+% of their grade by not reading or following the rubrics.

➢ All team members should read the rubrics for each assignment before writing it. **Go over them collectively during a team meeting.**

➢ Whomever does the final edit should use the rubric as a checklist prior to submitting the completed assignment.

➢ **Develop your own rubrics for repetitive tasks in Industry!**

Time Management, Engineering Journals, Team Meetings

ENSC 405W Grading Rubric for Engineering Journals

Criteria	Details	Marks
Identification	Your journal has your full name, team name, and team number listed on the inside cover or first page of the journal. A contact phone number and your e-mail are also provided there. A sticker with your name is affixed to the outside cover. Do not include student number anywhere in the journal.	/10%
Media	Your journal is a standard, lined, black, blue, or pink lab-book with non-removable pre-numbered pages. Spiral-bound notebooks, loose-leaf pages, computer printouts, Hilroy scribblers, or tiny notebooks are unacceptable and will result in a 0 for the entire assignment!	/15%
Format/Corrections	All entries are in pen. Entries are dated (start on a new page for a new date). Corrections to past entries have a line drawn through them and are dated. Do not scribble out or erase corrections. Any added pages are securely glued or taped into the journal and are dated.. Spelling, grammar, and neatness don't count! But journal must be reasonably legible	/25%
Regular Entries	Journal is obviously written in on a regular basis. Note that more than 3 entries per week (starting in the second week of classes) is the minimum required to receive full marks (minimum 36 entries); less than 1 entry per week (12 entries) will result in a 0 for the entire assignment!	/25%
Work Breakdown Chart	Final two pages of the journal contain a Work Breakdown Chart (WBC) that details your contribution to each document (Proposal, Requirements/ Functional Specification, Design Specification., UI Design Appendix, Meeting Minutes, and Poster Presentation). Provide as much detail as possible about tasks such as document design, research, drafting, editing/revising, and formatting. The WBC may be produced on a word processor and taped into the journal.	/25%
Comments		

Grades depend upon Project Quality & Document Quality!

Engineering Journals 1

➢ **Purpose:** To document (legal, research, memory)

- **Bound Lab Book** – Non-removable pages. No loose leaf, computer printouts, tiny or spiral-bound notebooks, or Hilroy scribblers. Lab books with pre-numbered pages are available at Staples, SFU bookstore, or on-line.
- Steve can provide used lab books for free. **Hands up!**
- **Label it with your name on outside, front cover**. Contact e-mail, phone number, team name and team number inside. **No student number**. May also include "Reward if found" incentive.
- Neatness doesn't count (nor does grammar), but **don't erase or scribble out errors** (draw a single line through errors). Glue or tape extra pages into journal.
- All entries must be in pen (not pencil).
- **Date each new entry or change to an entry**.

School of
Engineering Science

Engineering Journals 2

➢ **Content :**

- Dated entries & changes
- Description of work
- Ideas, theories, questions
- Musings
- Billing
- **3 entries per week (min)**

- Regular entries
- Observations/test results
- Low level design
- References
- Figures rather than narrative
- **Start this now!!!**

➢ **Note:** Please read the rubric for more details.

➢ I don't want narrative: point form and drawings are best

➢ **Warning:** Don't try to fake your journal at the last minute as you will receive a 0 (and get to meet the ENSC Director).

Journals and Work Breakdown

➢ Your professional journal also allows you to document your contributions to the project. It will inform your Work Breakdown Chart (WBC), which is required to be attached as the last page of your journal for ENSC 405W.

➢ The WBC should outline approximately how much of the work you contributed in the following areas (as well as the work of others):

- Research work

- Project design

- Organizational/administrative work

- Documentation

- Technical contributions

- Team dynamics

- Other work (parts sourcing, packaging, construction, etc.)

➢ **The WBC supports claims in the case of workload disagreements.**

Example Work Breakdown

High-Level Task	Member #1	Member #2	Member #3	Member #4
Comm Protocol Design	xx		x	
Comm Protocol Implementation	xx		x	
Sensor Module Circuit Design		x		xx
Sensor Module Programming		xx	x	
Server Module Programming	xx		x	
Active Module Programming	xx		x	
GSM SMS Module Programming				xx
SD Card Shield		xx		
Data Analysis Scripts	x		xx	
Data Stream from CPU to GPU	x		xx	
Module and System Testing	x	x	x	x
Packaging		xx		x
Parts Sourcing		x		x
Documentation	x	x	xx	x
Administrative Tasks	x	x	x	xx

Where xx = primary responsibility; x = some responsibility

➢ Note that you will be expected to submit a Work Breakdown Chart (WBC) in your Engineering Journal in ENSC 405W. See the Engineering Journal Rubric for details. **That WBC should provide more details about the project documentation than does the above chart.** Tape the WBC to the last page of the journal.

School of
Engineering Science

Meeting Minutes

➢ **Purpose:** To document

➢ **Form:** See supplied template (on website)

➢ **Process:** Each team should document their meetings throughout the semester. These minutes also help support claims with respect to workload.

➢ Recommended, but not required.

Team Meetings

➢ Meetings can **waste** more of your time than any other activity unless handled properly.

➢ Start on time.

➢ The productivity of a meeting is inversely proportional to its length. **Restrict meetings to an hour**. If you must meet for longer, take a break each hour. Try standing meetings.

➢ Separate occasions for **socializing** from business meetings. The moment you introduce beer, it becomes a party. (NB. A recent study suggests **some** beer while brainstorming aids creativity :-)

➢ Prepare and circulate **detailed agendas** via e-mail in advance of meetings. Clearly define the meeting's purpose. Schedule the time allotted for various subjects. Scheduling is a necessary evil.

➢ Keep minutes that list **action items**, **who** is responsible for them, and **when** they will report the results of actions.

School of
Engineering Science

Team Meetings (cont'd)

➢ Ensure that no one dominates the meeting and that everyone has an **opportunity to be heard**. If someone is talking too much they are not contributing, they are dominating.

➢ Spend a couple of minutes at the end of the meeting **evaluating** its effectiveness, and setting the time and agenda for the next meeting.

➢ Send **copies of the minutes** of the meeting via e-mail to all participants ASAP after the meeting. Everyone should agree to respond to the minutes (either agreeing they are accurate or making necessary corrections).

➢ An MS Word template is provided on the website for agendas and minutes.

Time Management, Engineering Journals, Team Meetings

School of
Engineering Science

Three Little Pigs Inc.

AGENDA

January 09, 2017
10:30-12:30
The Wood House

Purpose of Meeting: To discuss the latest problems with house construction

Items for Discussion:

- Alternative housing arrangements for Little Pig #1? (10 mins)
- Dealing with disruptive behavior on the part of Big Bad Wolf? (30 mins)
- Is brick a better alternative for house construction than wood? (30 mins)
- Need for an engineering report? (30 mins)

Coffee, tea, and cookies will be provided courtesy of Little Pig #3

Three Little Pigs Inc.

MINUTES

January 09, 2017
10:30-12:30
The Wood House

Present: Little Pig #1, Little Pig #2, Little Pig #3

Absent: Big Bad Wolf (with regrets)

Purpose of Meeting: To discuss the latest problems with house construction

Minutes:

Little Pig #1 called the meeting to order at 10:30. Little Pig #2 agreed to record the minutes.

A. **Approval of the agenda and minutes of the December 05, 2016 meeting**

   Minutes were approved as amended:
   - Little Pig #1 is now living with Little Pig #2 and is not homeless as recorded in the draft minutes

B. **Business Arising**

   Should we continue to invite Big Bad Wolf to future meetings?

   Discussion: Little Pig #1 noted that Big Bad Wolf has been disruptive at past meetings and should be barred from future meetings. Little Pig #2 and Little Pig #3 suggested that it would be fairest to first discuss the issue with him.

   Action: Little Pig #3 will contact Big Bad Wolf via e-mail to clarify his intentions.

C. **Is brick a better alternative for house construction than wood?**

   Discussion: Little Pig #1 and Little Pig #2 felt that wood frame construction would be perfectly adequate. Little Pig #3 felt that wood frame was inadequate to deal with all the huffing and puffing that was currently going on. He noted that he is the only PEng in the group.

   Action: Issue was tabled until Little Pig #3 could complete an engineering report.

D. **Next Meeting Date**

   The next meeting was arranged for January 16, 2017 at 10:30-12:30 in the brick house.

E. **Other Business**
   None.

Meeting was adjourned early at 11:30 due to high winds.

Teamwork Inventory

➢ The *Teamwork Inventory* reports on your assessment of how everyone in your team is contributing to the project.

➢ The only impact this inventory has on grades is if someone has not contributed equitably to the project. Meetings are scheduled for teams in difficulty.

➢ You are required to evaluate (5 + 1) dimensions of teamwork for your peers: "Contributions," "Facilitation," "Planning," "Teamwork," and "Conflict Resolution."

➢ On a 1-5 scale:

> **5 = Excellent**
>
> **4 = Good**
>
> **3 = Acceptable**
>
> **2 = Needs Work**
>
> **1 = Unacceptable**

➢ See the screenshot on the next page.

➢ **Aim for objectivity in your evaluations; few people are all 5 or all 1. BE HONEST !!!**

➢ Failure to submit the Teamwork Inventory on time will result in a grading penalty.

ENSC 405W/440W Teamwork Inventory

Teamwork involves behaviors that are usually under the control of individual team members. In your experience, do your peers demonstrate the following behaviors?
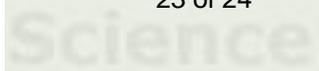
Component	Description
1. **Contributes to Team Project**	a. Participates actively and accepts a fair share of the group work. b. Works skillfully on assigned tasks and completes them on time. c. Gives timely, constructive feedback to team members.
2. **Facilitates Contributions of Others**	a. Communicates actively and constructively. b. Encourages and acknowledges all perspectives. c. Builds constructively on work of others by integrating own work.
3. **Planning and Management**	a. Takes on an appropriate role in group. b. Clarifies goals and plans for the project. c. Reports to team on progress.
4. **Fosters a Team Climate**	a. Expresses positivity and optimism about team members. b. Ensures consistency between words, tone, expressions, & body language. c. Listens actively to all team members.
5. **Manages Potential Conflict**	a. Assertive, neither dominating, submissive, nor passive aggressive. b. Contributes to healthy debate. c. Responds to and manages conflict constructively and effectively.
6. **Overall Contribution**	1=Unacceptable; 2=Poor; 3=Acceptable; 4=Good; 5=Excellent

On a scale of 1 to 5, please rate the above 6 components of teamwork for your team members and yourself in the following table.

Team Name: _____ Team #: _____

Name/Component	1	2	3	4	5	6
You:						

Additional Information: _____

_____

_____

_____

_____

Conclusion