

Course Outline

1. COURSE INFORMATION			
Session Offered	Winter 2017		
Course Name	Capstone project I		
Course Code	BIO TECH 4TR1		
Date(s) and Time(s) of lectures	C01 Wednesday 2:30-5:20 PM C02 Wednesday 2:30-5:20 PM		
Program Name	Biotechnology		
Calendar Description	<p>This course requires students to research, design, develop, and implement an independent project. The project plan and a model developed will be documented as a technical report and presented in a seminar.</p> <p>One tutorial, one lab (two hours); one term</p>		
Instructor(s)	Name(s): Dr. Faiez Alani E-mail address: alanif@mcmaster.ca Dr. Fei Geng E-mail address: gengf@mcmaster.ca	Office Hours: ETB 208 Monday 10:30-11:30 am Wednesday 1:30-2:30 pm Office Hours: ETB 203 Thursday 11:30 AM-12:20 PM Friday 12:30 PM-1:20 PM	
2. COURSE SPECIFICS			
Course Description	Technical and scientific writing, project design, layout, requirements, and time management. How to write technical report, literature review, steps for project selection, research methodology and techniques, standard measuring units, references and citation systems, preparation of proposal, log book and records. How to prepare and order project requirements, project resources and time management, experimental and proof of concept. The final report (Project proposal) is the basis for Capstone project II (4TR3).		
Instruction Type	Code	Type	Hours per term
	C	Classroom Instruction	7
	L	Laboratory, workshop or fieldwork	26
	T	Tutorial	6
	DE	Distance Education	n/a
	TOTAL HOURS		39
Resources	ISBN	Textbook Title & Edition	Author & Publisher
	0-205-58381-4	The Elements of Technical Writing	Thomas E. Pearsall PEARSON
	Other Supplies	http://avenue.mcmaster.ca	
Prerequisite(s)	BIOTECH 3BP3, 3FM3, 3FR3, 3PM3, GEN TECH 3MT3		
Corequisite(s)	N/A		
Antirequisite(s)	N/A		
Course Specific Policies	1. The materials of technical writing will be posted on the avenue to		

learn for the purpose of self learning. The information on the technical writing will be tested by two online quizzes in class (10%).

2. Each group will submit a Mid Term Report* which will include project concept and its viability, project background and plan, and list of items with supplier names and prices for ordering and other required items. The Mid Term report is required by the end of week 6 in the semester. The list of items that need ordering should be submitted ASAP. (15%)
3. Each student will submit one assignment on technical writing (5%)
4. Each group will submit a Final report* at the end of the semester. The evaluation of this report will be based on:
 - a) Project plan and its implementation, technical content, depth and comprehension, originality, working model demonstration, and problem solving skills (40%)
 - b) background, report structure & format, and written communication skills (10%)
 - c) literature references (internet, text & references books, reports, and original journals). (10%)
5. Each group will present their project plan to the class. The evaluation will be based on the project concept. Its viability, technical depth, and results. (5%). This activity will occur in the 12th week of the semester.
6. Each student will keep a log of work performed each week outside and inside the lab/class room. This task will be documented in an electronic record book used only for this course. The electronic logbook will have the following information: project process as compared to the plan, what tasks were accomplished and what was learned. The logbook will also contain any suggestions that were made and any action taken on them. The electronic logbook must be initialed by your Prof. every other week to be eligible to obtain the max marks in this category. The logbook will be used to assess the amount of work done outside the class room environment and will be reflected in the marks awarded in this category. This log will be submitted to your Prof. at the end of the semester along with your final report. A mark of 0% will be assigned if a logbook is not submitted. (5%).
7. Each student will need to start laboratory work from the second week to the end of this semester (week 2-week 12) to complete the equipment training and initiate preliminary experiments and proof of concept.
8. It is expected that each student will also work on their project outside the assigned class room/lab time. It is expected that for this course for every classroom hour spent the students are expected to spend three outside hours. These activities will be recorded in the logbook as described above.
9. Final written report along with a soft copy and electronic log book must be submitted in the last week of the term. Without a log book the final report will not be accepted.
10. The late reports will result in 5% loss of marks per day.
11. Any issue related to your partner not contributing equally must be brought to the attention of your Prof.
12. The departmental Safety and biosafety policy will be followed by the students working in the lab.

*These submitted reports after grading will become the property of the department and will not be returned to the students. The student will be able to view them after grading.

Students should be aware that, when they access the electronic components of

	<p>this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor. The instructor may also use other software including: e-mail, Avenue, LearnLink, web pages, capa, Moodle, Thinking Cap, etc. The communications via email is strictly by Official McMaster University Account, no reply to the commercial emails and/or nick names. Late submissions of assignments and Lab report will be penalized 10% per day within one week.</p>
Departmental Policies	<p>Students must maintain a GPA of 3.5/12 to continue in the program.</p> <p>In order to achieve the required learning objectives, on average, B.Tech. students can expect to do at least 3 hours of “out-of-class” work for every scheduled hour in class. “Out-of-class” work includes reading, research, assignments and preparation for tests and examinations.</p> <p>Where group work is indicated in the course outline, such collaborative work is mandatory.</p> <p>The use of cell phones, iPods, laptops and other personal electronic devices are prohibited from the classroom during the class time, unless the instructor makes an explicit exception.</p> <p>Announcements made in class or placed on Avenue are considered to have been communicated to all students including those individuals that are not in class.</p> <p>Instructor has the right to submit work to software to identify plagiarism.</p>
3. SUB TOPIC(S)	
Week 1	Introduction, project choices, Lab tour
Week 2	Project and Time management, Project selection, writing Lab protocols and Methodology, Technical writing online training
Week 3	Literature search & Preliminary project proposals, Laboratory work, Technical writing online training, Technical writing online quiz 1
Week 4	One to One meeting and Discussions, Equipment item lists, Laboratory work, Technical writing online training
Week 5	One to one meetings and discussion, Equipment item lists, Laboratory work, Technical writing online training, Technical writing online quiz 2
Week 6	Midterm report, One to one meetings, Laboratory work,
Mid-term Recess: Monday, February 20 to Sunday, February 26, 2017	
Week 7	One to one meetings and discussion
Week 8	Project proposal and Laboratory work, Assignment1 due
Week 9	Project proposal and Laboratory work, Working in the lab,
Week 10	Project proposal and Laboratory work, Working in the lab,
Week 11	Project Proposal and Laboratory work
Week 12	Project proposal , Laboratory work
Week 13	Final report due and Project presentations
<p>Classes end: Thursday, April 6, 2017</p> <p>Final examination period: Tuesday, April 11 to Thursday, April 27, 2017</p> <p>All examinations MUST be written during the scheduled examination period.</p>	

Note that this structure represents a plan and is subject to adjustment term by term. The instructor and the University reserve the right to modify elements of the course during the term. The University may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes.

4. ASSESSMENT OF LEARNING *including dates*	Weight
Technical writing Online Quiz	10%
Midterm report	15%
Electronic log book records	5%
Assignment	5%
Project plan presentation	5%
Final report	60%
TOTAL	100%

Percentage grades will be converted to letter grades and grade points per the University calendar.

5. LEARNING OUTCOMES

1. Identify the different stages of project design
2. Applying the molecular, biological and biotechnological techniques
3. Design independently special technical project and implement the technical methodology
4. Applying the technical and scientific writing skills
5. Classify technical project requirements and sources
6. Applying safety and biosafety policies and regulation
7. Evaluate stages of project preparation and time management
8. Link between the different courses of B. tech and the technical expertise

6. POLICIES

Anti-Discrimination

The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as soon as possible.

http://www.mcmaster.ca/policy/General/HR/Discrimination_Harassment_Sexual_Harassment-Prevention&Response.pdf

Academic Integrity

You are required to exhibit honestly and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, located at: <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>.

The following illustrates only three forms of academic dishonesty:

1. Plagiarism. E.g. the submission of work that is not own or for which other credit has been obtained
2. Improper collaboration in group work
3. Copying or using unauthorized aids in tests and examinations.

Requests for Relief for Missed Academic Term Work (Assignments, Mid-Terms, etc.)

The McMaster Student Absence Form is an on-line self-reporting tool for **Undergraduate Students** to report absences for:

- 1) Relief for missed academic work worth less than 25% of the final grade resulting from medical or

personal situations lasting up to three calendar days:

- Students may submit a maximum of one academic work missed request per term. It is the responsibility of the student to follow up with instructors immediately (within the 3 day period that is specified in the MSAF) regarding the nature of the accommodation. All work due in that time period however can be covered by one MSAF.
 - MSAF cannot be used to meet religious obligation or celebration of an important religious holiday, for that has already been completed or attempted or to apply for relief for any final examination or its equivalent.
- 2) For medical or personal situations lasting more than three calendar days, and/or for missed academic work worth 25% or more of the final grade, and/or for any request for relief in a term where the MSAF has not been used previously in that term:

Students must visit their Associate Dean's Office (Faculty Office) and provide supporting documentation.

E-Learning Policy

Consistent with the Bachelor of Technology's policy to utilize e-learning as a complement to traditional classroom instruction, students are expected to obtain appropriate passwords and accounts to access Avenue To Learn for this course. Materials will be posted by class for student download. It is expected that students will avail themselves of these materials prior to class. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail account, and program affiliation may become apparent to all other students in the course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about this disclosure please discuss this with the course instructor. Avenue can be accessed via <http://avenue.mcmaster.ca>.

Communications

It is the student's responsibility to:

- Maintain current contact information with the University, including address, phone numbers, and emergency contact information.
- Use the University provided e-mail address or maintain a valid forwarding e-mail address.
- Regularly check the official University communications channels. Official University communications are considered received if sent by postal mail, by fax, or by e-mail to the student's designated primary e-mail account via their @mcmaster.ca alias.
- Accept that forwarded e-mails may be lost and that e-mail is considered received if sent via the student's @mcmaster.ca alias.
- Check the McMaster/Avenue email and course websites on a regular basis during the term.

Turnitin (Optional)

This course will be using a web-based service (Turnitin.com) to reveal plagiarism. Students submit their assignment/work electronically to Turnitin.com where it is checked against the internet, published works and Turnitin's database for similar or identical work. If Turnitin finds similar or identical work that has not been properly cited, a report is sent to the instructor showing the student's work and the original source. The instructor reviews what Turnitin has found and then determines if he/she thinks there is a problem with the work. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to <http://www.mcmaster.ca/academicintegrity/turnitin/students/>

Protection of Privacy Act (FIPPA)

The Freedom of Information and Protection of Privacy Act (FIPPA) applies to universities. Instructors should take care to protect student names, student numbers, grades and all other personal information at all times. For example, the submission and return of assignments and posting of grades must be done in a

manner that ensures confidentiality.

<http://www.mcmaster.ca/univsec/fippa/fippa.cfm>

Academic Accommodation of Students with Disabilities Policy

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information consult McMaster's policy for Academic Accommodation of Students with Disabilities

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

Students must forward a copy of the SAS accommodation to the instructor of each course and to the Program Administrator of the B.Tech. Program immediately upon receipt. If a student with a disability chooses NOT to take advantage of a SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. <http://sas.mcmaster.ca>

Student Code of Conduct

The Student Code of Conduct (SCC) exists to promote the safety and security of all the students in the McMaster community and to encourage respect for others, their property and the laws of the land. McMaster University is a community which values mutual respect for the rights, responsibilities, dignity and well-being of others. The purpose of the Student Code of Conduct is to outline accepted standards of behavior that are harmonious with the goals and the well-being of the University community, and to define the procedures to be followed when students fail to meet the accepted standards of behavior. All students have the responsibility to familiarize themselves with the University regulations and the conduct expected of them while studying at McMaster University.

http://studentconduct.mcmaster.ca/student_code_of_conduct.html