



Department of Chemical Engineering
Faculty of Engineering
University of New Brunswick

Undergraduate Student Handbook
2020-2021

September 2020

Department of Chemical Engineering University of New Brunswick 2020-21 Undergraduate Student Handbook

Updated: 2020-07-09

ACADEMIC ADVISING AND STUDENT INFORMATION

This document is meant to be a guide for students in the chemical engineering undergraduate program at the University of New Brunswick. Although we have tried to include information which we feel may be of importance to you, the current UNB Undergraduate Calendar (<http://www.unb.ca/academics/calendar/undergraduate/current/index.html>) is the ultimate reference. Please report any discrepancies between this document and the undergraduate calendar to the Director of Undergraduate Studies. It is your responsibility to obtain correct and the most up-to-date information.

Your active participation in the advising process provides you with access to many of the academic opportunities provided by UNB, the Faculty of Engineering, and the Department of Chemical Engineering. The advisors are there to present those opportunities to you. However, you will have to make the decision on whether or not you would like to partake in them. You are responsible to ensure that you meet all the degree requirements!

Dr. Guida Bendrich
Director of Undergraduate Studies
Department of Chemical Engineering

ACADEMIC ADVISING AND STUDENT INFORMATION	2
<hr/>	
ACADEMIC ADVISING	5
<hr/>	
UNDERGRADUATE STUDENT STUDIES ASSISTANT	5
DIRECTOR OF UNDERGRADUATE STUDIES	5
ACADEMIC ADVISORS	5
IMPORTANT DATES	6
<hr/>	
WHY TO PARTICIPATE IN ACADEMIC ADVISING	7
<hr/>	
MEETING YOUR ADVISOR	8
<hr/>	
IN-PERSON MEETING	8
REQUEST FOR INFORMATION	8
STUDENT FORMS	9
<hr/>	
SPECIAL LETTER REQUESTS	9
OFF-CAMPUS STUDY FORM	9
UNDERGRADUATE COURSE CONFLICT FORM	9
ONLINE COURSE APPROVAL	9
YOUR CHE UNDERGRADUATE PROGRAM	10
<hr/>	
NON-TECHNICAL ELECTIVES	10
TECHNICAL ELECTIVES	10
FALL 2020	10
WINTER 2021	10
OPTIONS IN CHEMICAL ENGINEERING	101
BIOMEDICAL ENGINEERING OPTION IN CHEMICAL ENGINEERING	11
ENERGY CONVERSION ENGINEERING OPTION IN CHEMICAL ENGINEERING	12
CHEMICAL ENGINEERING OPTION REGISTRATION FORM	13
RECOMMENDED COURSE GUIDE	14
CHEMICAL ENGINEERING – UNBSJ STUDENTS	145
GETTING READY TO ENROLL IN COURSES	17
<hr/>	
PRE- AND CO-REQUISITES	17
COURSE EQUIVALENTS	17
COURSE CONFLICTS	17
ONLINE COURSES AT UNB	17
COURSES OUTSIDE OF UNB	18
TRANSFER CREDITS	18
WHILE TAKING A COURSE	19
<hr/>	

LABORATORY WORK AND LABORATORY SAFETY	19
PLAGIARISM	20
DEFERRED EXAMS	20
AFTER HAVING COMPLETED A COURSE	20
REVIEW OF COURSE GRADE	21
REVIEW OF GRADE ON AN INDIVIDUAL PIECE OF WORK	21
REVIEW OF THE FINAL COURSE GRADE	21
ACADEMIC APPEALS	22
CO-OP, EXCHANGES, MINORS, AND TME DIPLOMA	23
CO-OP PROGRAM	23
EXCHANGES (A.K.A. STUDENT ABROAD PROGRAM)	23
MINORS	24
MINOR IN BIOLOGY	24
MINOR IN ENVIRONMENTAL SCIENCE	24
MINOR IN MATHEMATICS	25
LEADERSHIP STUDIES	25
BUSINESS ADMINISTRATION MINOR	26
TME DIPLOMA	27
GRADUATION	28
DO YOU MEET THE GRADUATION REQUIREMENTS?	28
DEGREE AUDIT FORM CHEMICAL ENGINEERING – UNBF STUDENTS	29
DEFINITION OF FULL-TIME AND PART-TIME STUDENT (FOR ASSESSMENT PURPOSES)	30

ACADEMIC ADVISING

UNDERGRADUATE STUDENT STUDIES ASSISTANT

Sylvia Demerson Locke; Rm. D39
453-4520; sdemerso@unb.ca

DIRECTOR OF UNDERGRADUATE STUDIES

Dr. Guida Bendrich, Rm. D39
bendrich@unb.ca

ACADEMIC ADVISORS

1st and 2nd Year and Transfer Students; Co-op Program

Dr. Guida Bendrich; Rm. D39
bendrich@unb.ca

3rd and 4th Year Students

Dr. Brian Lowry; Rm. C119
bjl@unb.ca

IMPORTANT DATES

The following dates will help you to navigate the CHE program:

- **September 18, 2020:** Last day for adding Fall Term and full-year courses. Fall Term and full-year courses dropped up to and including this date not shown on academic transcript. After this date a notation of “W” (withdraw no academic penalty) will be shown on academic transcript.
- **November 2, 2020:** Last day to withdraw from Fall Term courses without academic penalty. A grade of “W” (withdrawn) will be shown on the academic record. After this date a grade of “WF” (withdrawn fail) will apply.
- **January 7, 2021:** Date set by the Department of Chemical Engineering for deferred Fall Term CHE course exams.
- **January 15, 2021:** Last day for adding Winter Term courses. Winter Term courses dropped up to and including this date not shown on academic transcript. After this date a notation of “W” (withdraw no academic penalty) will be shown on the academic transcript. And last day to withdraw from full-year courses without academic penalty. A notation “W” (withdrawn) will be shown on the academic transcript. After this date a notation of “WF” (withdraw fail) will apply.
- **March 8, 2021:** Last day to withdraw from Winter Term courses without academic penalty. A grade of “W” (withdrawn) will be shown on the academic record. After this date a grade of “WF” (withdraw fail) will apply.
- **May 6, 2020:** Date set by the Department of Chemical Engineering for deferred Winter Term CHE course exams.

WHY TO PARTICIPATE IN ACADEMIC ADVISING

The advisors in the Department of Chemical Engineering strive to provide you with a safe and confidential environment where you can discuss any questions and concerns. The following are some of the topics where an advisor may be able to provide guidance on and/or point you to resources for:

- Educational and career goals
- University-wide and program specific rules and regulations
- Scheduling of courses (workload, pre- and co-requisite requirements, ...)
- Off-campus studying (taking course at a different university, transfer credits, ...)
- Exchange programs (study and learn another language while living abroad for a term or two)
- Co-op program (earn money while being on a 4, 8, 12, or 16-month work term)
- Services provided to students at the university-level, for example:
 - Health and wellbeing
 - Academic progress
 - Financial (scholarships, awards, financial aid, ...)

MEETING YOUR ADVISOR

Many students are not aware of some of the rules and end up violating them. Students are strongly advised to meet their advisor at the beginning of each year. This will help avoid any unnecessary problems that may result in a delay of their graduation.

You may contact Ms. Demerson (sdemerso@unb.ca) and request a Degree Audit or to schedule an appointment with an Academic Advisor.

IN-PERSON MEETING

In preparation for the meeting:

- Compile a list of questions ... be as specific as possible
- Familiarize yourself with the pertinent sections of the UNB Undergraduate Calendar, the degree requirements, the course matrix, and the course description
- Be aware of the deadlines
- Request a meeting using your UNB email when contacting your advisor. Ms. Demerson will be happy to book the meeting for you

During the meeting:

- Be specific why you are meeting with the advisor
- If the meeting is related to changes in course selection and/or course schedule then bring a suggested/modified course schedule to the meeting
- Take notes during the meeting
- Clarify the next steps that need to be taken
- Follow up on the meeting

REQUEST FOR INFORMATION

This must be done through your UNB email account! It is important to include in your email the following information:

- Full Name
- Student number ... must be included!
- Outline the question(s) that you have

STUDENT FORMS

Please print the form, obtain the appropriate signatures and submit to the Chemical Engineering Department Office.

SPECIAL LETTER REQUESTS

Please email the Registrar's Office for all special letter requests (registrar@unb.ca)

OFF-CAMPUS STUDY FORM

http://www.unb.ca/fredericton/registrar/_resources/pdf/permission_formto_study_offcampus.pdf

UNDERGRADUATE COURSE CONFLICT FORM

https://www.unb.ca/fredericton/registrar/_resources/pdf/courseoverride2.pdf

ONLINE COURSE APPROVAL

http://www.unb.ca/cel/_assets/documents/credit/advisor-approval-undergraduate.pdf

YOUR CHE UNDERGRADUATE PROGRAM

The studies toward the B.Sc.E. degree are comprised of core courses, complimentary studies (a.k.a. non-technical electives, NTE), and technical electives (TE).

NON-TECHNICAL ELECTIVES

Non-technical electives are an important element of engineering education. Regardless of engineering role, engineers require an appreciation of business concepts, good communication skills and a broad sense of the impact of technology on society. Most engineers end up in management roles, making decisions on time, people and money. It is wise therefore, for students with an interest in management to choose their complimentary studies courses carefully. In the chemical engineering program at UNB, three of the four non-technical elective courses required for the degree (12 ch total) are area specific:

- Humanities (3 ch) – Sociology, Anthropology, History, Philosophy, Classics, Political Science
- Business (3 ch) – Any TME or ADM course; or select ECON courses
- Non-Language (3 ch) – Any Humanities or Business course; PSYC, RLS, ENVS, ENR, IDS, RCLP, ARTS, WLCS
- Other (3 ch) – must be approved by the Director of Undergraduate Studies

TECHNICAL ELECTIVES

FALL 2020

CHE 5313	Energy and the Environment
CHE 5834	Nuclear Engineering
CHE 5844	Nuclear Safety
CE 5432	Wastewater Treatment & Pollution Control

WINTER 2021

CHE 5522	Nanotechnology
CHE 5423	Practice School
CHE 5726	Special Topics (TBA)
CHE 5744	Steam Supply Systems
CHE 5804	Nuclear Chemical Processes

The course descriptions can be found at www.unb.ca/academics/calendar/undergraduate/current/frederictoncourses/chemicalengineering/index.html

OPTIONS IN CHEMICAL ENGINEERING

BIOMEDICAL ENGINEERING OPTION IN CHEMICAL ENGINEERING

Biomedical Engineering is an exciting and growing area of specialization within the Chemical Engineering discipline. The Biomedical Engineering Option in Chemical Engineering is a study path for students wishing to pursue careers in medicine or the health sciences industry. Students who plan on attending medical school are encouraged to seek advising immediately upon entrance into the degree program.

To complete the option program, students must obtain Departmental approval and complete 12 credit hours of technical electives chosen from the list below. Only biomedical option students may use these courses towards the technical elective degree requirements.

APSC 3953	Basis of Biomedical Engineering	3ch
BIOL 1711**	Human Anatomy I	4ch
BIOL 2023	Biochemistry	3ch
BIOL 3043	Cell Biology	3ch
BIOL 2013	Evolutionary Genetics	3ch
Biol 2073	Fundamentals of Microbiology	5ch
BIOL 2792	Human Physiology - Systems	3ch
CHEM 4503**	Biocomputing in Drug Design	5ch
CHEM 4523	Medicinal Chemistry	3ch
KIN 2062*	Introductory Biomechanics	3ch
KIN 3061*	Advanced Biomechanics	4ch
KIN 4163*	Workplace Ergonomic Design And Analysis	3ch
ME 5913	Biomechanics	4ch
PHYS 5993	Magnetic Resonance Imaging	3ch

* some option courses require that Biol 2753 be taken as a pre-requisite.

** some option courses require that Biol 1001 be taken as a pre-requisite.

Students with a special interest in biology and biochemical engineering are encouraged to pursue a Minor in Biology through the Faculty of Science. Such students should seek advising from the Director of Undergraduate Studies to embark upon this path as soon as possible in the degree program.

Note: One course substitution can be made at the discretion of the Director of Undergraduate Studies

ENERGY CONVERSION ENGINEERING OPTION IN CHEMICAL ENGINEERING

The chemical engineer must include environmental stewardship as a design requirement in the conversion of energy resources into commodity products and services. This option places emphasis on emerging technologies and societal issues in the energy and environment sector within chemical engineering. The directed path consists of 1 required course, 1 complementary studies elective and 3 technical elective courses (minimum total of 15 ch) selected from the approved lists below. To participate in the option students must obtain Department approval.

CORE

CHE 5313 Energy and the Environment

COMPLEMENTARY STUDIES ELECTIVE: 1 COURSE FROM THE FOLLOWING LIST

ECON 3865 Energy Economics
ENVS 2003 Intro. to Environmental Studies
ENVS 2023 Climate Change
ENVS 4001 Environmental Impact Assessment and Management
ENVS 4002 Stakeholder Approaches to Environmental Problem Solving
ENR 2114 Water Sustainability: Practice & Technology
ENR 2021 Natural Resource Management, Institutions, Policy, Governance
HIST 3925 Technology and Society

TECHNICAL ELECTIVE: 3 COURSES FROM THE FOLLOWING LIST

CE 5421 Water Quality and Treatment 4ch
CE 5422 Wastewater Treatment and Pollution Control 4ch
CHE 5234 Oil Refining and Natural Gas Processing
CHE 5244 Enhanced Oil Recovery
CHE 5264 Oil Sands Technology
CHE 5933 Biorefining: Principles, Processes and Products
CHE 5314 Chemical Process Industries
CHE 5344 Combustion
CHE 5824 Corrosion Processes
CHE 5834 or Nuclear Engineering
ME 5373 Nuclear Engineering
CE 5432 Wastewater Treatment and Pollution Control
CHE 5413 Air Pollution Control
ME 5553 Ocean Wave Energy Conversion
ME 5933 Industrial Ecology

Students with special interest in environmental studies are also encouraged to pursue a minor or secondary major in this area through the university's *Environmental Studies Program*, administered by the Faculty of Forestry and Environmental Management. The Department also encourages interested students to pursue a Masters of Engineering degree in environmental studies after graduation.

Note: One course substitution can be made at the discretion of the Director of Undergraduate Studies

CHEMICAL ENGINEERING OPTION REGISTRATION FORM

- refer to Calendar for details on Option programs.
- the Department of Chemical Engineering reserves the right to remove registration in a chosen Option program, where students do not register in Option courses or where their studies clearly diverge from that Option program.
- the Department of Chemical Engineering will try to ensure that all students registered in an Option have a reasonable opportunity to complete that Option over two academic years of study.
- withdrawing from or failing Option courses is normally not a problem, but either could potentially make subsequent completion of an Option impossible.
- admission to Options is automatic for students enrolled in the BScE (Chemical Engineering) program who have successfully completed both ChE2004 and ChE2012, **along with the completion of this form.**

Name: _____ UNB email: _____

Student ID # _____

Expected Graduation Year: _____

Signature: _____

For a list of courses required for completion of the Options below please refer to the Program Guide.

OPTIONS (You may register in more than one Option)

Biomedical Engineering Option

Energy Conversion Engineering Option

Recommended Course Matrix for the B.Sc.E. (Chemical Engineering) Program

Consult with your advisor before rearranging your schedule, e.g. before adding/dropping courses

-- Regular Program 2020/2021 --

-- Course offering times may change; for up-to-date times refer to UNB's current course timetable --

Time	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9	Revision: 2020-6-26							
8:30 AM	CS 1003	CHEM 1982	CHE 2003	MATH 3503	MATH 3413	CHE TE 5		CHE TE 5		<table border="1"> <tr><td>Legend</td></tr> <tr><td>Fall Term TE</td></tr> <tr><td>Winter Term TE</td></tr> <tr><td>CHE Tutorial</td></tr> <tr><td>CHE Labs</td></tr> <tr><td>CHE Lectures</td></tr> <tr><td>Advising (Fall)</td></tr> </table>	Legend	Fall Term TE	Winter Term TE	CHE Tutorial	CHE Labs	CHE Lectures	Advising (Fall)
Legend																	
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CHE Tutorial																	
CHE Labs																	
CHE Lectures																	
Advising (Fall)																	
9:30 AM	MATH 1503		CHEM 2401	CHE 2004	CHE 3123	STAT 2593		CHE4601									
10:30 AM	PHYS 1081	ECE 1813	CHE 2012	CHE 2703	CHE 3332	CHE TE 6	CHE 4101	CHE TE 6									
11:30 AM	MATH 1003	MATH 1013	MATH 2513	CHE 2525	CHE 3304	CHE 3505	CHE 4341		STAT 2593								
12:30 PM		CHE 1001 (W)	BIOL 1001	CHE 2301	CHE TE 1	CHE 3324	CHE TE 1		CHE TE 1								
1:30 PM	ENGG 1003 (M, W) ENGG 1001 (F)	ENGG 1082			CHEM 3621	CHE TE 7	CHE 4101 (W) CHE 4341 (F)	CHE TE 7									
2:30 PM				CHE 2412 (W)	CHE TE 2 (W, F) 2:30 - 3:50 PM		CHE TE 2 (W, F)		CHE TE 2 (M, W) 2:30 - 3:50 PM								
3:30 PM	ENGG 1003 (M)	ENGG 1082 (M) CHEM 1987 (W)			CHEM 3886 (M) 2:30 - 5:20 PM (M 6:30 PM)												
4:30 PM																	
5:30 PM					CHE TE 3 (M, W)	CHE TE 8	CHE TE 3 (M, W)	CHE TE 8	CHE TE 3								
6:30 PM																	
		CHEM 1982 (W, 7:00 PM)															

Time	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9	Revision: 2020-6-22							
8:30 AM	CS 1003	MATH 1013	CHE 2501	MATH 3503	CHE TE 4		CHE TE 4		CHE TE 4	<table border="1"> <tr><td>Legend</td></tr> <tr><td>Fall Term TE</td></tr> <tr><td>Winter Term TE</td></tr> <tr><td>CHE Tutorial</td></tr> <tr><td>CHE Labs</td></tr> <tr><td>CHE Lectures</td></tr> <tr><td>Advising (Fall)</td></tr> </table>	Legend	Fall Term TE	Winter Term TE	CHE Tutorial	CHE Labs	CHE Lectures	Advising (Fall)
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9:30 AM				CHE 2412													
10:30 AM					CHE 3332	CHE 3505											
11:30 AM	ENGG 1015		MATH 2513	CHE 2703	CHE 3123	CHE 3324											
12:30 PM																	
1:30 PM																	
2:30 PM																	
3:30 PM	PHYS 1081	ECE 1813			CHE 3424 (W, Th)	CHE 3434 (M, W)		CHEM 4886 (F)									
4:30 PM																	
5:30 PM							ENGG 4000	ENGG 4000									
6:30 PM								ENGG 4013	ENGG 4013								

Time	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9	Revision: 2020-6-22							
8:30 AM	MATH 1003	ECE 1813	CHE 2501		CHE TE4		CHE TE4	CHE 4601		<table border="1"> <tr><td>Legend</td></tr> <tr><td>Fall Term TE</td></tr> <tr><td>Winter Term TE</td></tr> <tr><td>CHE Tutorial</td></tr> <tr><td>CHE Labs</td></tr> <tr><td>CHE Lectures</td></tr> <tr><td>Advising (Fall)</td></tr> </table>	Legend	Fall Term TE	Winter Term TE	CHE Tutorial	CHE Labs	CHE Lectures	Advising (Fall)
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10:30 AM					CHE 3304												
11:30 AM				CHE 2004	CHE 3424												
12:30 PM			CHE 2012														
1:30 PM				CHE 2525			CHE 4404	CHE 4404	CHE 4404								
2:30 PM																	
3:30 PM	ENGG 1015		CHE 2506 (T, W, F)			CHEM 3897											
4:30 PM																	
5:30 PM							ENGG 4000	ENGG 4000									
6:30 PM								ENGG 4013	ENGG 4013								
			BIOL 1001 (7:00 PM)														

	Recommended Non-Technical Electives (NTE) and Technical Electives (TE) Courses									Term 9 (to lighten the workload)
NTE	0	1	1	0	0	1	1	0	0	- Courses shown could be moved from their respective term into Term 9
TE	0	1	0	0	0	1	2	1	0	- Consider moving a NTE / TE from Term 6 and/or Term 7 into Term 9

General Notes

To Book An Advising Appointment
 Sylvia Demerson Locke, Head Hall Rm. D-39 (ChE Office)
 +1.506.453.4520, sdemerso@unb.ca

- All courses must be passed with a grade of "C" or higher
- (Indicates available alternative days and/or times)
- Schedule NTE (12 ch) and TE (12 ch) to meet your workload requirements

CHEMICAL ENGINEERING – UNBSJ STUDENTS

Name:

Date:

Student #:

Term	Courses	Course Name	Ch	Passed
1	APSC1013	Mechanics I	5	
	CS1003	Introduction to Computer Programming	4	
	ENGG1001	Engineering Practice Lecture Series	0	
	ENGG1003	Eng Technical Communications	4	
	ENGG1015	Intro to Eng Dsgn and Prob Solving	2	
	MATH1003	Introduction to Calculus I	3	
	MATH1503	Introduction to Linear Algebra	3	
2	APSC1023	Mechanics II	5	
	BIOL1205	Biology II	3	
	CHE2003	Fundamentals I - Mass Balances	3	
	CHEM1872	General Physical and Inorganic Chemistry	3	
	CHEM1877	General Physical and Inorganic Chem Lab	2	
	ECE 1813	Electricity and Magnetism	4	
	MATH1013	Introduction to Calculus II	3	
3	CHE2004	Fundamentals II - Mass & Energy Balances	4	
	CHE2501	General Materials Science	3	
	CHE2506	Materials Science Lab	1	
	CHEM2421	Organic Chemistry I	3	
	MATH2513	Multivariable Calculus for Engineers	4	
	STAT2593	Probability and Statistics for Engineers	3	
4	CHE2302	Transport Phenomena	4	
	CHE2412	Chemical Engineering Laboratory I	3	
	CHE2525	Fundamentals of Chemical Processes Design	4	
	MATH3503	Differential Equations for Engineers	3	
	ME3413	Thermodynamics I	3	
	ME 3513	Fluid Mechanics	4	

Complimentary Studies Electives (CSE) requirements for whole program				
Hum & SS			3	
Business			3	
Other*			3	
Other*			3	

The choice of CSE courses is subject to the Faculty of Engineering regulations for Complementary Studies Electives and the following:

- a. At least 3 ch must come from Humanities and Social Sciences (Anthropology, Classics, Literature, History, Philosophy, Political Science and Sociology).
- b. An additional 3 ch must come from Business/Management (Business Admin, Tech. Management and Entrepreneurship, or select Economics courses).
- c. The remaining 6 ch may be taken from Humanities, Business or any PSYC, RLS, ENVS, ENR, IDS, RCLP, ARTS, WLCS. Please check with advisor for approval. Business courses are recommended to pursue the TME Diploma. *No more than 3 ch of language courses may be used for credit toward the B.Sc.E. Degree.

Please visit UNB Calendar for further details

www.unb.ca/academics/calendar/undergraduate/current/index.html

GETTING READY TO ENROLL IN COURSES

Prior to signing up for courses, ensure that you:

- Meet the course pre and co-requisites
- Do not replace a prescribed course with another course which think may be equivalent
- Do not have any timetable conflicts

PRE- AND CO-REQUISITES

Pre- and co-requisites are important guideposts along the degree program path. You must not attempt a chemical engineering course without having its stated pre- and co-requisites. If you find yourself out of sequence in the program (for example, as a transfer student or because of a late withdraw), please seek advising from the Academic Advisor or Director of UG Studies, and obtain official permission from the course instructor before enrolling into a course: a record of this permission must be put into your personal file in the Department.

COURSE EQUIVALENTS

Please note that students must follow the course program only. Students are NOT permitted to take any other courses in place of the required courses. Permission may be granted under exceptional circumstances; however, credit will not be given without a letter of permission on file.

COURSE CONFLICTS

In the Department of Chemical Engineering, it is not recommended, however, students may be permitted to register for two courses in which there is a time conflict. A conflict means that two courses have time conflicts, either in the lecture times, lab or tutorial times. The “Undergraduate Course Conflict Form” must be completed and signed by both Course Professors that the time conflict involves. Once completed the Registrar’s Office will manually register the student into both courses. The form can be found at <http://www.unb.ca/fredericton/registrar/resources/pdf/courseoverride2.pdf>

ONLINE COURSES AT UNB

Open entry online courses are open to UNB undergraduate and graduate students, mature students, program applicants, visiting students, and no-degree students.

UNB students paying full time tuition are required to have written approval by their Academic Advisor to register in a UNB Open Entry course during the fall/winter terms. During fall/winter terms, students approved to register in an Open Entry UNB Online course will pay a non-refundable supplemental online fee of \$100 per course, which is not covered by full time tuition.

To obtain advisor approval, download and fill out the Undergraduate Advisor Approval Form at <http://www.unb.ca/cel/assets/documents/credit/advisor-approval-undergraduate.pdf>

COURSES OUTSIDE OF UNB

Courses may be taken outside of the University of New Brunswick. Permission must be obtained from the Director of Graduate Studies by completing the “Off Campus Study Form”. Once signed by the Director it will be forwarded to the Registrar’s Office who will email the approved form back to the student. Complete regulations can be found at <http://www.unb.ca/academics/calendar/undergraduate/current/regulations/universitywideacademicregulations/i-generalcourseregulation/f.permissiontostudyoffcampusatanotheruniversityorotherpost-secondaryinstitution.html>

The Off-Campus Study Form can be found at

http://www.unb.ca/fredericton/registrar/resources/pdf/permission_formto_study_offcampus.pdf

TRANSFER CREDITS

Students who are on academic probation cannot take courses outside of UNB.

As per university regulations, current students who are seeking transfer credit for courses taken at other institutions must receive permission prior to taking the course. Courses that have been taken without the proper approvals will not be counted towards your degree. Please obtain the appropriate permission slip (Request Form for Off-Campus Study) from the UNB Registrar or http://www.unb.ca/fredericton/registrar/resources/pdf/permission_formto_study_offcampus.pdf, and seek approval from the Director of UG Studies for any courses you wish to take.

WHILE TAKING A COURSE

Ensure that you

- Read the course outline in order to become aware of the course requirements
- Go to class and actively participate in class
- If the course utilizes our learning platform, D2L, then familiarize yourself with the content. Check back regularly as the content may change over time.
- If you require additional help, consult with
 - The course instructor, for example, during office hours
 - The teaching assistant, commonly known as the TA, during office hours
 - A tutor; the Department of Chemical Engineering has a list of available tutors
- Safety First! Ensure that all work being conducted in a safe manner. Read the *Chemical Engineering Undergraduate And Graduate / Research Laboratory Safety Manual* which is made available in each of the undergraduate laboratories.
- Complete your course work on time (assignments, projects, reports, ...). Ensure that you do not plagiarize!
- Write the tests, quizzes, final exams. At times it may unfortunately happen that a student misses a final exam.

LABORATORY WORK AND LABORATORY SAFETY

For courses that contain a laboratory component, the laboratory component is required, and must be completed. The Department of Chemical Engineering takes lab safety very seriously.

- NO food or drink is allowed to be consumed or STORED in the laboratory. Food **must** always be kept outside the lab. You should never risk the consumption of chemicals.
- ALWAYS be aware of the emergency equipment in the room and its location, e.g., fire extinguisher, eye wash station.
- You always have the right to refuse work if you do not feel it is safe.
- If you are unsure of how to properly use a chemical or perform a procedure, ask someone who knows. Both the **instructor** and **the TA** are responsible for knowing and using the proper procedures.
- According to Workplace Health and Safety, no one can be forced to do work they feel puts them at risk. Situations can be assessed and proper safety precautions then put in place
- You can request extra PPE (Personal Protection Equipment) if you feel it necessary.
- **You must study the "ChE Undergraduate Laboratory Safety" content on D2L ("ChE Undergraduate 1-Stop-Resources (Lab Safety and Program Advising Info"). After which you must pass the D2L-based "ChE Undergraduate Laboratory Safety Test" before you are allowed in the lab.**

More detailed information on Laboratory Safety can be found in the *Chemical Engineering Undergraduate Laboratory Safety Manual*.

PLAGIARISM

Plagiarism includes:

1. quoting verbatim or almost verbatim from any source, including all electronic sources, without acknowledgement;
2. adopting someone else's line of thought, argument, arrangement, or supporting evidence without acknowledgement;
3. submitting someone else's work, in whatever form without acknowledgement;
4. knowingly representing as one's own work any idea of another.

Examples of other academic offences include: cheating on exams, tests, assignments or reports; impersonating somebody at a test or exam; obtaining an exam, test or other course materials through theft, collusion, purchase or other improper manner, submitting course work that is identical or substantially similar to work that has been submitted for another course; and more as set out in the academic regulations found in the Undergraduate Calendar.

Penalties for plagiarism and other academic offences range from a minimum of F (zero) in the assignment, exam or test to a maximum of suspension or expulsion from the University, plus a notation of the academic offence on the student's transcript.

For more information, please see the Undergraduate Calendar, Section B, Regulation VIII.A, or visit:

<http://www.unb.ca/academics/calendar/undergraduate/current/regulations/universitywideacademicregulations/viii-academicoffences/index.html>

It is the student's responsibility to know the regulations.

DEFERRED EXAMS

You are expected to follow the exam schedule set by the Registrar. Students who by reason of illness or extenuating circumstances are unable to write final examinations at the specified times may apply to the Registrar's Office for permission to write deferred exams. Medical permission is required.

For full Deferred Examination regulations please refer to the University Regulations in the Undergraduate Calendar under "Final Examinations Written at an Alternate Time".

<http://www.unb.ca/academics/calendar/undergraduate/current/regulations/universitywideacademicregulations/iii-examinationstandingandpromotion/index.html>

Applications and documentation are due within two weeks of the examination date in which the student was unable to write. To apply for a deferred exam please go to

<http://www.unb.ca/fredericton/registrar/alternate-final-exam.html>

The Department of Chemical Engineering has set dates for deferred CHE course exams (see Important Dates in this document).

AFTER HAVING COMPLETED A COURSE

Once you have completed a course:

- If you have received a grade of "C" or higher then check off the course in the degree audit form
- If you have received a grade lower than a "C" then you will have to retake the course
 - Schedule an advising appointment through Ms. Demerson so that you can examine with your advisor the implications on your schedule
 - If you feel that the grade is not justified then you have to option of
 1. Review of course grade on an individual piece of work
 2. Review of the final course grade
 3. Academic appeal

REVIEW OF COURSE GRADE

Student grades may be reviewed as a course grade or an individual piece of work worth at least 25% of the final course mark. The UNB Calendar, Section B, Part L, Review of Grades, provides detailed information on review of a grade. Detailed grade review information can be found at:

<https://www.unb.ca/fredericton/registrar/resources/pdf/reviewofgrades.pdf>

REVIEW OF GRADE ON AN INDIVIDUAL PIECE OF WORK

- a. Students may discuss with the course instructor the grade on any piece of work regardless of its value. For a course that is not the responsibility of a single academic unit, the coordinator of the course will replace the Department Chair in the review process.
- b. For purposes of the formal review process, individual pieces of work may include: Term tests, computerized tests, examinations other than final examinations, term papers, essays, reports, group projects and oral tests/examinations worth at least 20 per cent in the calculation of the final grade in the course.
- c. Students have the right to request a formal review of graded assignments such as those listed above. The grounds are restricted to: the overall assessment of the evaluation is demonstrably unfair; the evaluation was not consistent within the class; there was a miscalculation of the grade.
- d. There are two steps to follow for the formal review process:
 - i. The student must discuss the piece of work with the instructor involved within two weeks of the receipt of the grade for the individual item.
 - ii. After this first step and if requested by the student in writing or by e-mail to the Chair of the Department, or Dean of the Faculty if there is no Department or Chair, a review will be conducted with such Chair, the instructor and the student. If desired, a student has the right to meet with the Chair without the instructor present prior to this review. The review must be conducted within 7 days after the review with the instructor. The decision of this review is final and the reasons for the decision will be provided to the student in writing by the Chair.

A student who has not requested a grade review of an individual piece of work that is reviewable, or who has requested a grade review of an individual piece of work and is not satisfied with the result, may not ask for a review of a final grade on the basis of that individual piece of work.

REVIEW OF THE FINAL COURSE GRADE

- a. Prior to requesting a formal review of a final grade, students will discuss the grade with the instructor. For a team-taught course the coordinator of the course will replace the instructor in the review process. Where no course coordinator exists, the Dean of the Faculty or Chair of the Department will designate one of the course instructors as course coordinator.
- b. Students who are not satisfied with the decision of the instructor or course coordinator have the right to request a review of the official final grade received in a course on the proper form (available in the Office of the Registrar or online at <http://www.unb.ca/fredericton/registrar/students/currstuforms.html>). Such requests must be received by the Registrar, in writing, within 90 days after the end of the course or

examination period, where applicable. A fee of \$50.00 must accompany the request. The fee will be refunded if the grade is subsequently raised.

- c. Students should clearly outline the grounds for the request to review the final grade. Grounds as well as more information can be found at <http://www.unb.ca/academics/calendar/undergraduate/current/regulations/universitywideacademicregulations/iii-examinationstandingandpromotion/index.html>

ACADEMIC APPEALS

The UNB Student Advocate website introduces the appeal process as follows:

- You have the right to defend reports of academic offences as outlined in University Regulation IX of the University of New Brunswick Undergraduate Calendar. Academic offences include plagiarism, cheating, falsifying records, etc.
- You also have the right to appeal academic decisions, as outlined in University Regulation X of the University of New Brunswick Undergraduate Calendar. These decisions include Academic Probation or being Required to Withdraw, which are placed on your transcript as a result of your assessment Grade Point Average which is calculated at the end of an assessment period, provided that 24 credit hours or more have been attempted since your last assessment. The assessment period begins in May (with Intersession & Summer Session) prior to your most recent fall session and ends in April of your current academic year (see University Regulation VIII(F)). You may also seek to have completed course grades and credit hours excluded from your transcript, providing that you have sufficient grounds.

<http://www.unb.ca/fredericton/studentservices/academics/academic-issues/academic-appeals.html>; Retrived on 2018-725

Additional information can be found at:

<http://www.unb.ca/fredericton/studentservices/academics/academic-issues/academic-appeals.html>

Mr. Wilfred Langmaid, UNB Student Advocate, at langmaid@unb.ca, will be able to provide you with additional information.

CO-OP, EXCHANGES, MINORS, AND TME DIPLOMA

ENGINEERING AND SCIENCE CO-OP PROGRAM

Students completing their B.Sc.E. in Chemical Engineering are strongly encouraged to gain work experience during their studies.

Did you know that the average for a co-op student in 2017/2018 was just over \$22/hour?

Why co-op? Actively participating in the co-op program helps you to:

- Gain up to 24 months of professional experience which helps you to build a professional resume;
- Accumulate up to 12 months of work experience after the mid-point of your degree towards the P.Eng. requirement of 48 months;
- Earn money to help pay for your tuition;
- Identify your career goals;
- Network with employers.

The work term length is as adaptable as you are. You can participate in 4, 8, 12, and 16 month work terms with department approval.

There are many options for you to interweave your meaningful work experience with your studies. If you require more information....

- Drop by the Co-op Office in H-107,
- Email the Co-op Office at unbcoop@unb.ca;
- Visit your academic advisor to explore different scheduling options .

EXCHANGES (A.K.A. STUDENT ABROAD PROGRAM)

Prepare for an experience of a lifetime! The UNB Student Abroad Program offers exciting opportunities abroad for all UNB students. There are short and long-term programs ranging from 1 week to 1 academic year that can be academic and course based or hands on experiential learning or even a combination of both! All programs offer an amazing cultural experience and this is the perfect chance to grow your personal skills and knowledge in the real world.

To learn more about all of our programs please contact Global@unb.ca!



MINORS

The University offers students an opportunity to broaden and complement their programs of study by completing the requirements for a Minor. A complete list of approved Minor Programs is available in the Registrar's Office. A Minor program can be a University interdisciplinary Minor or one offered through a faculty or department. For more information on Minors please visit <http://www.unb.ca/academics/calendar/undergraduate/current/regulations/universitywideacademicregulations/v-minorprograms/index.html>

Many chemical engineering students are in the process of completing or having completed a Minor. Examples of a Minor are:

Minor in Biology

The Minor in Biology is designed for students in other Departments of the Faculty of Science, and outside the Faculty of Science, who are interested in a coherent package of Biology courses. The Minor follows **section V** in the "University Wide Academic Regulations" of the Undergraduate Academic Calendar and consists of BIOL courses, totalling at least 24 credit hours with a grade of C or better, approved by the Biology Director of Undergraduate Studies. The Level II BIOL courses and the Concentrations can be used as guidelines. Students requiring **BIOL 1001**, **BIOL 1006**, **BIOL 1012** and **BIOL 1017**, or other BIOL courses for their Major are not eligible to also count these courses towards a Biology Minor. Students not requiring Biology courses for their Major must take, and can count, **BIOL 1001**, **BIOL 1006**, **BIOL 1012** and **BIOL 1017** as part of their Biology Minor. Also, see Note 2 below.

Additional Notes:

1. Some upper level courses (3000 and 4000 level) have limited enrollment. Students should register in the Winter term for these courses, since assignments will be made in May following pre-registration. Priority for admission is as follows: Year IV Honours, Year IV Majors, Year III Honours, Year III Majors. Within each category, students will be selected based on CGPA (and at the discretion of the instructor). If space permits, students in a Minor program may also enroll in these courses.
2. Some Biology courses are designed for non-Science students. Students enrolled in Biology programs may take these courses, but they can only be considered as electives for the purposes of the Biology programs. Permission of the instructor may be required. Such courses include: **BIOL 1711**, **BIOL 1719**, **BIOL 1782**, **1789**, **BIOL 1846**, **BIOL 2251**, **BIOL 2259**, **BIOL 2501**, **BIOL 2509**, **BIOL 2513**, **BIOL 2519**, **BIOL 2721**, **BIOL 2761**, **BIOL 2769**, **BIOL 2792**, **BIOL 2812**, and **BIOL 2819**.

Minor in Environmental Science:

The Environmental Studies Minor consists of 24ch of core and elective courses, selected in consultation with the Coordinator of Environmental Studies. Students are required to take:

1. 6ch of core Environmental Studies (ENVS) courses.
2. 18ch of course work chosen from a list of approved elective courses (refer to the link below). One elective course must be taken under each of three discipline headings specified in the list of elective courses.

3. Additional courses may be approved for electives by the Coordinator Environmental Studies, Yolanda Spithoven (yolanda@unb.ca).

<http://www.unb.ca/academics/calendar/undergraduate/current/frederictonprograms/environmentalstudiesprogram.html>

Minor in Mathematics

The Minor in Mathematics consists of 24 ch in Mathematics courses. Credit must be obtained for [MATH 1003](#) (or [MATH 1053](#)), [MATH 1013](#) (or [MATH 1063](#)), and either [MATH 1503](#) or [MATH 2213](#). The remaining 15 ch of the minor must consist of Mathematics courses at the second year level or above. A maximum of 6 ch of Statistics may count towards the 15 ch.

Students studying Chemical engineering will take 6 math courses (Math1003, 1013, 1503, 3503, 2513, and Stat2593). The remaining two courses can be taken from level 2 or higher Math courses. Students interested in getting a math minor should Dr. Mahim Salmani to sign a form and help to choose the remaining 6 ch of mathematics courses.

You may contact the Mahim Salmani (msalmani@unb.ca) if you require more information.

Minor in Leadership Studies

The Renaissance College Minor in Leadership Studies is an interdisciplinary program offered to students registered in other degree programs at UNB. Enrolment is limited and application to the program is required. The Minor consists of 8 courses (24ch) as listed below and a minimum grade of C is required for all courses. Students are advised that in order to complete the minor they may need to take more than the usual number of credit hours required by their degree program. Students should check with their faculty advisor and the Renaissance College, College Coordinator.

Leadership Studies Minor Required Courses:

[RCLP 1001](#) Leadership Foundation 3ch

[RCLP 1011](#) Worldviews, Religions and Cultures 3ch

[RCLP 1021](#) Concepts of Enhanced Personal Well-being 3ch

[RCLP 1062](#) Citizenship and Community 3ch

[RCLP 2001](#) Leadership in Community Projects 3ch

[RCLP 3002](#) Leadership in Cross-Cultural Contexts 3ch

[RCLP 3030](#) Learning Portfolio 3ch

[RCLP 4002](#) Leadership for Social Innovation 3ch

Normally [RCLP 1001](#) is taken in the first year of study. [RCLP 1001](#) is a pre-requisite or co-requisite for [RCLP 2001](#).

Certificate in Leadership Studies

The Certificate in Leadership Studies requires the following 5 courses of the minor ([RCLP 1001](#), [RCLP 1011](#), [RCLP 1062](#), [RCLP 2001](#), [RCLP 3030](#)) totaling 15 credit hours. A minimum grade of C is required in all courses. The Certificate is open to students registered at UNB and students are advised that in order to complete the certificate they may need to take more than the usual number of credit hours required by their degree program. Students should check with their faculty advisor as well as the Renaissance College, College Coordinator.

Business Administration Minor

The Minor in Business Administration is designed for students from outside the Faculty of Business Administration interested in a coherent package of Business Administration courses.

The Minor in Business Administration will consist of 24 credit hours of approved Business Administration courses. Students planning to Minor in Business Administration will be required to take ADM 1015 and 211 additional credit hours chosen from an approved group of courses. At least 12 of the 24 credit hours must be from the 3000 and 4000 level courses. A grade of C or better is required in each course used towards the Minor in Business Administration.

An Application for Approval for the Business Administration Minor must be completed.

Please contact the Programs and Student Services office regarding the Minor in Business Administration: Room 270m, Singer Hall, Phone: 451-6817 or email BBAContact@unb.ca



Diploma in Technology Management and Entrepreneurship (DTME) for Chemical Engineering Students

The Department STRONGLY recommends students obtain business-related education through the complimentary studies stream and pursue a Diploma in Technology Management and Entrepreneurship (DTME) which is offered by the J Herbert Smith Centre in the Faculty of Engineering. By planning ahead, and with careful selection of courses, you can complete this diploma concurrently with your degree while only taking one additional course. There is no additional cost for this program!

The diploma requires completion of five courses, up to four of which can be shared with your degree. To most easily meet the requirements of your degree and the DTME concurrently:

1) Select one of the following as your humanities course:

HIST 3925: Technology and Society	HIST 3975: History of Life Sciences
POLS 1603: Politics of Globalization	SOCI 2533: Information Society
SOCI 2374: Sociology of Science and Technology	SOCI 2534: Technology and Social Change
SOCI 3373: Sociology of Science	

2) Select one of the following as your non-language course:

ADM 1213: Financial Accounting	ADM 1313: Principles of Marketing
ADM 2513: Organizational Behaviour	ADM 2815: Human Resource Management
ADM 3123: Business Law I	ADM 3155: International Business
ADM 3713: Management Information Systems	ADM 4316: Professional Selling
ADM 4326: Customer Satisfaction and Loyalty	ADM 4615: Operations Management I
ECON 3103: Intro. To Money and Banking	ECON 3505: IT & the Canadian Economy
EVS 2003: Intro. To Environmental Studies	HIST 3925: Technology and Society
HIST 3975: History of Life Sciences	IDS 2001: Intro. to International Dev Studies
IDS 2003: IDS Concepts & Perspectives	POLS 1603: Politics of Globalization
RCLP 2001: Practicing Leadership in Community Projects	STS 1003: Tech and Society I (STU)
STS 2003: Tech and Society II (STU)	TME 2001: Creativity, Innovation & Value Creation
TME 3346: Marketing of Technological Goods and Services	

3) Select your business course from the list below (prerequisite: completion of 80 ch)*:

4) Select your 'other' course from the list below (prerequisite: completion of 80 ch*:

5) Select one additional course from the list below (prerequisite: completion of 80 ch):

* Note: TME 2001 or TME 3346 may be selected as your business or other course

TME 3013: Entrepreneurial Finance

TME 3113: Bus. Planning and Strategy in an Entrepreneurial Envs.

TME 3213: Quality Management

TME 3313: Managing Engineering and IT Projects

TME 3413: Technological Creativity & Innovation

TME 3413: Technological Creativity & Innovation TME 3423: Technological Risk and Opportunity

For more information, please visit www.unb.ca/tme, or contact the TME office in H 225

You should register for the diploma early by completing the form at http://www.unb.ca/fredericton/engineering/tme/resources/pdf/admission_application.pdf

GRADUATION

The policy on graduation described in the UNB Calendar is that students must complete the degree as it is defined when they start the program. Unfortunately, this isn't really practical when courses are deleted or changed, so the department of Chemical Engineering uses a modified version of this regulation: the policy is the lesser of the requirements when you start your degree and those when you complete it. If a course is dropped or changed in the program we will always make every attempt to ensure a reasonably fair transition. However, students who fail courses close to a change in requirements may sometimes be required to complete additional credit hours as a result. Following the recommended four-year program is generally the best way to avoid complications due to rule changes.

You may apply to graduate at UNB, reserve your gown and hood, and reserve your guest tickets to the ceremony along with other information pertinent to graduation at <http://www.unb.ca/graduation/>

DO YOU MEET THE GRADUATION REQUIREMENTS?

Students are responsible for making sure that they will graduate by taking the correct courses. Close to graduation, please take the following steps:

- a) Start by completing the attached Degree Audit Worksheet.
- b) You can confirm with the Undergraduate Student Studies Assistant, who will also complete a degree audit for each student in advance.

DEGREE AUDIT FORM CHEMICAL ENGINEERING – UNBF STUDENTS

Students Entering in 2020/2021

Name: _____ Date: _____

UNB ID: _____ email: _____

UNB Course	ch	Course equivalents	Grade(s)	Notes	UNB course	ch	Course Equivalents	Grade(s)	Notes
ChE 1001	1	1 ch CHE TE			Phys 1081	5			
ChE 2003	3				CS 1003	4			
ChE 2004	3								
ChE 2012	3				Engg 1001	CR			
ChE 2301	3				Engg 1003	4			
ChE 2412	3				Engg 1015	2			
ChE 2501	3				Engg 1082	4			
ChE 2506	1				Engg 4000	8			
ChE 2525	4				Engg 4013	3			
ChE 2703	3				ECE 1813	4			
ChE 3123	3				Biol 1001	3			
ChE 3304	4				Math 1003	3			
ChE 3324	4				Math 1013	3			
ChE 3332	3				Math 1503	3			
ChE 3418	3	Take Math 3413 if CHE 3418 is not offered			Math 2513	4			
ChE 3424	3				Math 3503	3			
ChE 3434	3								
ChE 3505	4				Stat 2593	3			
ChE 4101	3								
ChE 4341	4				NTE Humanities	3	Anth, Clas, Hist, Phil, Pols, Soci		
ChE 4404	3				NTE Business	3	ADM, TME, Econ		
ChE 4601	4				NTE Non-Lang	3	Hum, Bus, Psyc, RLS, ENVS, ENR, IDS, RCLP, ARTS, WLCS		
ChE TE									
CHE TE					NTE Other	3			
CHE TE									
CHE TE									
	12	12 credit hours of CHE TE			Notes: Biomedical or Energy Conversion Option				
Chem 1982/1987	5								
Chem 2401	3								
Chem 3621	3								
Chem 3886	2								
Chem 3897	1								
Chem 4886	2								

Definition of Full-Time and Part-Time Student (for assessment purposes)

Determination of a student's status as full-time or part-time in a term will be based on the following criteria:

A. For Fee Assessment Purposes:

1. A student carrying the equivalent of four or more courses in a term is a full-time student.
2. A student carrying less than the equivalent of four courses in a term is a part-time student.
3. If you are on student loan funding please visit Financial Services for current information.

The 'equivalent number of courses' carried by a student in a term is determined as follows:

- (a) a term course, weighted at 0-5 credit hours, is the equivalent of one course;
- (b) a term course, weighted at 6-11 credit hours, is equivalent of two courses;
- (c) a term course, weighted at 12 or more credit hours, is the equivalent of four courses;
- (d) a full year course, weighted at 0-5 credit hours, is the equivalent of one-half course in each of the Fall and Winter terms;
- (e) a full year course, weighted at 6-11 credit hours, is the equivalent of one course in each of the Fall and Winter terms;
- (f) a full year course, weighted at 12-17 credit hours, is the equivalent of two courses in each of the fall and Winter terms;
- (g) a full year course, weighted at 18 or more credit hours, is the equivalent of three courses in each of the Fall and Winter terms;
- (h) an audited course is one-half the course equivalent of the same course taken for credit.

B. For Academic Purposes:

1. A student carrying the equivalent of three or more courses in a term is a full-time student.
2. A student carrying less than the equivalent of three courses in a term is a part-time student.