Department of Chemical Engineering
Faculty of Engineering
University of New Brunswick

Undergraduate Student Handbook
2022-2023

September 2022

Department of Chemical Engineering
University of New Brunswick
2022-23 Undergraduate Student Handbook

Updated: 2022-09-15

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!

My goal as the Director of Undergraduate Studies is to help you reach your educational goals and fulfill your potential as a student learning to think like an engineer. Your success matters to us and I am available to discuss any concerns that arise as you work through your degree program.

Mr. Jamie Miles
Director of Undergraduate Studies
Department of Chemical Engineering

ACADEMIC ADVISING

UNDERGRADUATE STUDENT STUDIES ASSISTANT

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

DIRECTOR OF UNDERGRADUATE STUDIES

Mr. Jamie Miles, Rm. E230B
jamie.miles@unb.ca

ACADEMIC ADVISOR

All Students
Dr. Wilailak Chanklin; Rm. E39B
Wilailak.c@unb.ca

IMPORTANT DATES

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

- **September 16, 2022**: 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.
- **September 19, 2022**: Last day to complete the ChE Undergraduate Laboratory Safety Test on D2L.
- **September 22, 2022**: A mandatory in-person version of this test will be scheduled for anyone not having completed the course on D2L.
- **November 1, 2022:** 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 12, 2023:** Date set by the Department of Chemical Engineering for deferred Fall Term CHE course exams.
- **January 20, 2023:** 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 13, 2023:** 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 11, 2023:** 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

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 2022

CHE 5313	Energy and the Environment
CHE 5254	Polymer Reaction Eng. & Processes
CHE 5834	Nuclear Engineering
CHE 5844	Nuclear Safety & Reliability
CHE 5933	Biorefining: Prin. Proc.

WINTER 2023

CHE 5413	Air Pollution Control
CHE 5522	Nanotechnology
CHE 5744	Steam Supply Systems
CHE 5804	Nuclear Chemical Processes

The course descriptions can be found at
www.unb.ca/academics/calendar/undergraduate/current/fredericton courses/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 3523	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. Biol 1719 can be taken online in place of Biol 1711.

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
CHE 5234	Oil Refining and Natural Gas Processing
CHE 5244	Enhanced Oil Recovery
CHE 5264	Oil Sands Technology
CHE 5274	Re-Engineering Waste – A Chemical Engineering Approach
CHE 5522	Nanotechnology
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

NUCLEAR POWER OPTION IN CHEMICAL ENGINEERING

The Nuclear Power Option is now available to all students from the Department of Chemical Engineering. In order to enter the option program students must meet the following conditions:

- Successful completion of 80 ch of the program in Chemical Engineering
- Approval by the Department of Chemical Engineering

In order to complete the option program, students must complete 12 credit hours of technical electives incuding the core course as indicated below.

CORE COURSE (Required – 3 ch):

CHE 5834	Nuclear Engineering

TECHNICAL ELECTIVE: 3 courses from the following list (9 ch):

CHE 5744	Steam Supply Systems
CHE 5804	Nuclear Chemical Processes
CHE 5824	Corrosion Processes
CHE 5844	Nuclear Safety and Reliability
CHE 5855	Reactor Physics
CHE 5877	Advanced Nuclear Systems

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

☐ Nuclear Power 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 for Students Starting in September 2022 --

Revision: 2022-3-31

Monday (M), Wednesday (W), Friday (F)

Time	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9
8:30 AM	CS 1003	CHEM 1982	CHE 2003	MATH 3503	MATH 3413	CHE TE 5	CHE 4101	CHE TE 5	
9:30 AM	MATH 1503		CHEM 2401	CHE 2004	CHE 3123	STAT 2593		CHE4601	STAT 2593
10:30 AM	PHYS 1081	ECE 1813	CHE 2012	CHE 2703	CHE 3332	CHE TE 6	CHE 4341	CHE TE 6	
11:30 AM	MATH 1003	MATH 1013	MATH 2513	CHE 2525	CHE 3304	CHE 3505	Extra CHE Tutorial Timeslot	Extra CHE Tutorial Timeslot	
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	ENGG 1003 (M)	ENGG 1082 (M) CHEM 1987 (W)		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					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)							

Legend

- Fall Term TE
- Winter Term TE
- CHE Tutorial
- CHE Labs
- CHE Lectures
- Advising (Fall)

Tuesday (T)

Time	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9
8:30 AM	CS 1003	MATH 1013	CHE 2501	MATH 3503	CHE TE 4		CHE TE 4		ChE TE 4
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			Extra CHE Tutorial Timeslot	Extra CHE Tutorial Timeslot	Extra CHE Tutorial Timeslot	Extra CHE Tutorial Timeslot			
1:30 PM									
2:30 PM	PHYS 1081	ECE 1813			CHE 3424	CHE 3434			
3:30 PM								CHEM 4886 (T, 6:30 PM)	
4:30 PM									
5:30 PM							ENGG 4000	ENGG 4000	
6:30 PM								ENGG 4013	ENGG 4013

Legend

- Fall Term TE
- Winter Term TE
- CHE Tutorial
- CHE Labs
- CHE Lectures
- Advising (Winter)

Thursday (Th)

Time	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9
8:30 AM	MATH 1003	ECE 1813	CHE 2501		CHE TE4		CHE TE4	CHE 4601	
9:30 AM					CHE 3424	CHE 3434	CHE 4404	CHE 4404	CHE 4404
10:30 AM					CHE 3304				
11:30 AM				CHE 2004					
12:30 PM			CHE 2012						
1:30 PM				CHE 2525					
2:30 PM	ENGG 1015		CHE 2506 (T, W)			CHEM 3897			
3:30 PM									
4:30 PM									
5:30 PM							ENGG 4000	ENGG 4000	
6:30 PM								ENGG 4013	ENGG 4013

Legend

- Fall Term TE
- Winter Term TE
- CHE Tutorial
- CHE Labs
- CHE Lectures
- Advising (Summer)

Recommended Non-Technical Electives (NTE) and Technical Electives (TE) Courses									
NTE	0	1	1	0	0	1	1	0	0
TE	0	1	0	0	0	1	2	1	0

General Notes

- 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

To Book An Advising Appointment

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

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	
Non-Language			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. Bussiness 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 you 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.

Note, Stat 2263 is NOT equivalent to Stat 2593, credit will not be given toward the program.

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 accessed on Sharepoint through my.unb.ca*

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 $150 per course, which is not covered by full time tuition.

To obtain advisor approval, download and fill out the Undergraduate *Advisor Approval Form can be accessed on Sharepoint through my.unb.ca.*

COURSES OUTSIDE OF UNB

Courses may be taken outside of the University of New Brunswick. Permission must be obtained from the Director of Undergraduate 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 through my.unb.ca on Sharepoint.* There is a $50 fee at the Registrar's Office for processing.

"Permission to study off-campus will not be granted to a student required to withdraw and normally will not be granted to a student on academic probation."

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 through my.unb.ca on Sharepoint, 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.

Lab Safety

The "ChE Undergraduate Laboratory Safety Test" must be completed on D2L by September 18, 2022. A mandatory in-person version of this test will be scheduled on September 19/22, 2022 for anyone failing to comply with this requirement. Students will not be permitted into labs until this has been completed.

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 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.

Mandatory Safety Quiz

All Chemical Engineering undergraduate students must have completed and passed the quizzes for the following modules on the D2L-based *"Faculty of Engineering Safety Training 2022/2023"* course by 11:59 p.m. on Sept. 19, 2022:

- WHMIS 2015
- General Building Safety
- General Lab Safety
- Chemical Safety

In case any quiz has not been passed then a student is required to complete all examinations via a cumulative written quiz on Sept. 22, 2022; with the time and the location to be announced via email.

Should a student enter the CHE undergraduate program in the Winter 2023 term, then the following completion dates apply:

- D2L-based quizzes are to be completed by 2023-1-23 at 11:59 p.m.
- If a D2L-based quiz has not been passed, then the cumulative written examination will take place on 2023-1-23; with the time and the location to be announced via email.

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.

Cheating:
Asking for help/assistance, for example, on Chegg.com is cheating.

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".
University of New Brunswick | Undergraduate Calendar | University Wide Academic Regulations| General Course Regulations | Examinations Standing and Promotions | UNB
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 exams@unb.ca

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 *my.unb.ca at Sharepoint*.

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 *my.unb.ca at Sharepoint*. 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 *my.unb.ca at Sharepoint.*

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.

https://www.unb.ca/academics/calendar/undergraduate/current/regulations/universitywideacademicregulations/iv-rightofappeal-standingandpromotiondecisions/index.html

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

Co-op, Work Term, Exchanges, Minors, and TME Diploma

Engineering and Science Co-Op Program

As a first-year Chemical Engineering undergraduate student, you will be among the first engineering students at UNB to participate in the newly developed program. This initiative, which sequences your study terms/co-op work terms, helps you to gain a maximum of practical experience prior to graduation.

Why is it important for you to gain co-op experience? You will:

- Apply the knowledge that you have gained in class to professional, real-world work situations.
- Develop new skills which will help you to excel in your chosen profession.
- Get paid; the average salary of a co-op student is $22/hour (equivalent to $44,000/year).
- Find exciting regional, national, and international co-op opportunities.
- Develop strong industry contacts.
- Upon graduation, enter the job market with a significant amount of practical experience.

To gain access to those opportunities, you will be taking the following courses during your first three terms:

Fall 2022 (Sept. to Dec.)	Winter 2023 (Jan. to April)	Summer 2023 (May to Aug.)
CS1003	CHE1001	BIOL1001
ENGG1001	CHEM1982	CHE2003
ENGG1003	CHEM1987	CHE2012
ENGG1015	ECE1813	CHE2501
MATH1003	ENGG1082	CHE2506
MATH1503	MATH1013	CHEM2401
PHYS1081	Non-Technical Elective (NTE)	MATH2513
		Non-Technical Elective (NTE)

Your progress through your degree will be as follows:

Year of Study	Term	Degree / Co-op Matrix for Students Starting in Fall 2022		
		Calendar Year	Terms	Term Sequence on Course Matrix
1	Fall (Sept. to Dec.)	2022	Study Term 1A	1
	Winter (Jan. to April)	2023	Study Term 1B	2
	Summer (May to Aug.)	2023	Study Term 2A	3
2	Fall (Sept. to Dec.)	2023	Co-op Term 1	
	Winter (Jan. to April)	2024	Study Term 2B	4
	Summer (May to Aug.)	2024	Co-op Term 2*	
3	Fall (Sept. to Dec.)	2024	Study Term 3A	5
	Winter (Jan. to April)	2025	Co-op Term 3*	
	Summer (May to Aug.)	2025	Study Term 3B	6
4	Fall (Sept. to Dec.)	2025	Study Term 4A	7
	Winter (Jan. to April)	2026	Study Term 4B	8
	Summer (May to Aug.)	2026	Graduation	
Comments	A student is limited to a maximum of 6 work terms totalling no more than 24 months.		* one work term can be extended up to 16 months	

Need more information?

- In the Engineering and Sciences Co-op Office contact Ms. Doré Dicks (unbcoop@unb.ca)

Co-op Work Term Credit in Chemical Engineering

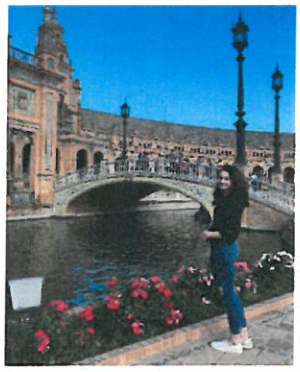
A student in Chemical Engineering Undergraduate Program can receive a maximum of 3 ch of Technical Electives (*TE*) credit in total if all the following items are being met:

- The student has been approved to participate in the UNB Engineering and Science Co-op Program (*Co-op Program*).
- The student has accepted the Co-op Program's Terms and Conditions.
- Prior to the Co-op work term, the student must have (i) successfully completed 80 ch of CHE degree course credits and (ii) received from the Director of Undergraduate Studies in Chemical Engineering (*DOUGS*) approval to explore the possibility of a supervised project with the co-op employer.
- The overall co-op work term must be at least 8 months in length.
- The co-op work project, which must be supervised by an engineer on site (*Supervising Engineer*), must have a suitable academic content.
- Before proceeding on the path of academic credit, the proposed project must receive approval in writing from the Supervising Engineer as well as the DOUGS.
- The co-op student must provide regular written project updates to the Supervising Engineer, the DOUGS and, if applicable, to the supervising CHE faculty expert.
- A draft report must be submitted to the Supervising Engineer prior to completing the co-op work term.
- Upon return to UNB, the student must ask the CHE Office to be registered for CHE5734 (Chemical Engineering Report).
- Upon return to UNB, the student must within 4 weeks (i) submit a written formal report and (ii) present the findings in an oral presentation. Both deliverables will determine the CHE5734 course grade. The course grade awarded will be either CR or NCR.
- A CHE student can only participate once in this opportunity during their entire CHE undergraduate degree, i.e., a maximum of 3 ch of the total required TE credit hours can be associated to a co-op work term.

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 on 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 engineerig 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:

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.

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:
6ch of core Environmental Studies (ENVS) courses.

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.

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/fredericton programs/environmentalstudiesprogram.html

Minor in Mathematics

The Minor in Mathematics consists of 24 ch in Mathematics courses. Credit must be obtained for MATH 1003(orMATH 1053),MATH 1013(orMATH 1063), and eitherMATH 1503orMATH 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 and a statistics course (Math 1003, 1013, 1503, 2513, 3413, 3503, and Stat2593). The remaining course can be taken from level 2 or higher approved Math courses. Students interested in getting a math minor should contact Mahin Salmani to sign a form and help to choose the remaining 3 ch mathematics course.

You may contact Mahin 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 Foundations (Required)
At least two of:
RCLP 1011 – Worldviews, Religion & Culture
RCLP 1062 – Citizenship & Community
RCLP 2001 - Practicing Leadership in Community Projects
At least 9ch of RCLP courses at the 3000 or 4000 level

With approval of the College Coordinator, up to 6ch of courses from other faculties with relevant leadership content may also be counted towards the certificate.
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 students to complete 15 ch of courses including (RCLP 1001, RCLP 1011, RCLP 1062, RCLP 2001, and at least 3 ch of RCLP courses at the 3000 and 4000 level, with approval of RCLP Coordinator, up to 3 ch of courses from other faculties with relevant leadership content may also be counted towards the certificate). 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 Management 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 1192 Business Planning and Entrepreneurship as well as 21 additional credit hours of approved elective 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.

Please contact the Faculty of Management for the most up-to-date Minor in Business Administration PDF: Room 270, Singer Hall, Phone: 451-6817 or email Brittany.herkert@unb.ca

TME Diploma

Diploma in Technology Management and Entrepreneurship (DTME)

For Chemical Engineering Students

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 Chemical Engineering degree and the DTME concurrently (Note: If you go away on NUS, DTME will accept 2 transfer credits as non-core course credits):

1) Select one of the following as your humanities course (advised to take in Term 2 or 3):

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

2) Select one of the following as your non-language course (advised to take in Term 2 or 3):

- 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 1103 Introduction to Development 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 2103 Tech and Society II (STU)
- TME 2001 Creativity, Innovation & Value Creation
- TME 3346 Marketing of Technological Goods and Services

*Prerequisite: completion of 80ch

**NOTE: TME 2001 or TME 3346 may be selected as your business or NTE 'other' course.

To learn more about the **Diploma in TME** visit: www.unb.ca/tme or contact tme@unb.ca.

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 (Sylvia Demerson sdemerso@unb.ca), who will also complete a degree audit for each student in advance.

DEGREE AUDIT FORM CHEMICAL ENGINEERING – UNBF STUDENTS

Students Entering in 2022/2023

Name: _____ UNB ID: _____

Date: _____

UNB Course	ch	Course equivalents	Grade(s)	Notes
ChE 1001	1	1 ch CHE TE		
ChE 2003	3			
ChE 2004	3			
ChE 2012	3	ME 3413		
ChE 2301	3	CHE 2302		
ChE 2412	3			
ChE 2501	3			
ChE 2506	1			
ChE 2525	4			
ChE 2703	3	CE 2703 or ME 3513		
ChE 3123	3	Chem 2601		
ChE 3304	4	ME 3433		
ChE 3324	4			
ChE 3332	3			
ChE 3418	3	Math 3413		
ChE 3424	3			
ChE 3434	3			
ChE 3505	4			
ChE 4101	3			
ChE 4341	4			
ChE 4404	3			
ChE 4601	4			
ChE TE	3			
CHE TE	3			
CHE TE	3			
CHE TE	3			
Total 12 ch CHE TE	12		--	
Chem 1982/1987	5	Chem 1882, 1012/17, 1982/85		
Chem 2401	3	ChE 2401 or Chem 2421		
Chem 3621	3	Chem 2622		
Chem 3886	2	Chem 2111(lab)or Chem 2886 (analytical)		
Chem 3897	1	Chem 2416		
Chem 4886	2	Chem 2637, Chem 2321		

UNB course	ch	Course Equivalents	Grade(s)	Notes
Phys 1081	5	ApSc 1013, 1081, Phys 1031, 1071/91, 1061/91		
CS 1003	4			
Engg 1001	CR			
Engg 1003	4			
Engg 1015	2			
Engg 1082	4	APSc 1023, 1082, Phys 1913/18, Engg 1032 or Phys 1011/1021		
Engg 4000	8	ChE 4225		
Engg 4013	3			
ECE 1813	4	Phys 1072/1092 or Phys 1052/1092		
Biol 1001	3	2033, 1105, 1209, 1009		
Math 1003	3	1063		
Math 1013	3			
Math 1503	3	2213		
Math 2513	4	2003		
Math 3503	3			
			--	
Stat 2593	3	Stat 2264		
			--	
NTE Humanities	3	Anth, Clas, Hist, Phil, Pols, Soci		
NTE Business	3	ADM, TME, Econ		
NTE Non-Lang	3	Hum, Bus, Psyc, RLS, ENVS, ENR, IDS, RCLP, ARTS, WLCS		
			--	
NTE Other	3			

Notes:

Biomedical/Energy Conversion/Nuclear Eng. Option

Coop

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.