

PRE-PROFESSIONAL PROGRAMS

BSc ENGINEERING

- UNIVERSITY OF ALBERTA
- UNIVERSITY OF CALGARY

UPDATED FEBRUARY 2012

This Academic Planning Guide highlights major points only regarding admission and transfer. Students are advised to read the university and RDC calendars, and the [Alberta Transfer Guide](#) for other necessary information. Some courses listed may have prerequisites; refer to [Course Descriptions](#). Access this guide online: www.rdc.ab.ca/academic_advising.

Both the Universities of Alberta and Calgary offer undergraduate programs in Engineering. The first year of the programs is similar but not identical. Students take one year at Red Deer College and, with a competitive GPA, transfer to University of Alberta or University of Calgary. The first year courses help students determine the engineering program they should enter in their second year. Students are encouraged to early on establish good study habits and a solid academic foundation based on understanding the principles of mathematics, physics, and chemistry and to develop the ability to apply those principles to solving problems so they will be well prepared to attain a GPA of 2.5 or higher.

First year program requirements for the two universities are indicated below along with the equivalent RDC courses. Please note the accompanying footnotes.

COURSES FOR YEAR 1			
UNIVERSITY OF ALBERTA CURRICULUM		RDC COURSE EQUIVALENTS	UNIVERSITY OF CALGARY CURRICULUM
CHEM 103	unit weight: 4.3	CHEM 203	ENGG 201
CHEM 105	3.8	CHEM 205	CHEM 209
ENGG 130	4.0	ENGG 230	
ENPHY 131	4.3	ENPH 231	
		ENGG 230/ENPH 231	ENGG 205/ENGG 349 ¹
MATH 100	4.0	MATH 212	AMAT 217
MATH 101	3.5	MATH 213	AMAT 219
MATH 102	3.5	MATH 223	MATH 221
PHYS 130	3.8	PHYS 269	PHYS 369 ²
Note 3		PHYS 359	PHYS 259 ³
ENCMP 100	3.8	ENCP 200	ENGG 233
ENGG 100/ENGG 101	1.0 each	ENGG 200	
Comp. Studies Elective ^{4, 5}	3.0	Complementary Studies Elective	Complementary Studies Option ⁶

See footnotes on following page.

- University of Calgary** bound students will take ENGG 230/ENPH 231 for credit in ENGG 205/ENGG 349. ENGG 349 is a year 2 course and is required in 6 of 9 programs. As it is not applicable for Electrical, Computer or Software Engineering, students who are admitted to these three programs may count this extra credit as a technical elective.
- University of Calgary** bound students will receive credit for UofC's PHYS 369, which is required in all but the Oil and Gas Engineering program. Students who will specialize in Electrical, Computer or Software Engineering must complete PHYS 359 (transfers to UofC as PHYS 259) before entering Year 2 classes at UofC. If they do not, their registration will be cancelled. Students admitted to the other seven programs must take PHYS 259 before entering Year 3 at UofC.
- PHYS 359 is part of the **University of Calgary** program. It is not part of the program at **University of Alberta**.
- The junior-level 3-credit [Complementary Studies Option](#) for **University of Alberta** bound students is taken in the fall term and is chosen from the following Humanities or Social Science courses: ANTH 201, CLAS 209, ECON 201, 202, ENGL 219, HIST 207, 208, 209, PHIL 221, 222, PSYC 260, SOCI 260. ENGL 219 cannot satisfy both a Complementary Studies Elective and the English Elective requirements. Courses in a language other than English are not accepted (i.e. French, Spanish, etc.).
- University of Alberta bound students with grades of 6 or 7 in International Baccalaureate** Theory of Knowledge or the IB Higher Level courses in Economics, History, Philosophy or Cultural Anthropology will be credited by the Faculty of Engineering at UofA for the Year One junior-level elective upon submission of official IB documents. These students must take one *senior-level elective* in Year 1. Senior level courses are those which transfer to UofA at a 200-level or higher. Check transferability in the Alberta Transfer Guide.
- The [Complementary Studies Option](#) for **University of Calgary** bound students is taken in the fall term and chosen from the following: ANTH (*not* 309); ART 201, 305; BIOL 209, COMM 271, 375, 381, 383 (*not* 361); ECON, ENGL, GEOG, HIST, PHIL, POLI, PSYC, SOCI (*not* 310). Check transferability in the Alberta Transfer Guide.

POSSIBLE CREDIT GIVEN FOR PREVIOUSLY COMPLETED COURSES

Course Completed:	Possible Credit Awarded by UofA or UofC:
MATH 202 or 203 (in lieu of MATH 212)	<ul style="list-style-type: none"> ▪ Credit given for MATH 100 at UofA. Grade <i>must</i> be at least a <i>B-</i> and course should be recently taken. ▪ MATH 202 or 203 is <i>not</i> accepted in lieu of MATH 212 at UofC at this time. A student who has completed MATH 203 may want to contact the Faculty of Engineering at UofC for possible credit toward AMAT 217 (Applied Math).
MATH 204 (in lieu of MATH 213)	<ul style="list-style-type: none"> ▪ Student will receive credit for MATH 101 at UofA with a minimum grade of <i>B-</i>. Students should be aware that MATH 213 contains considerably more rigorous material than MATH 204 and they may not be entirely prepared for senior engineering mathematics courses. ▪ MATH 204 is not accepted in lieu of MATH 213 at UofC.
MATH 221 (in lieu of MATH 223)	<ul style="list-style-type: none"> ▪ Credit given for MATH 102 at UofA with a minimum grade of <i>B-</i>. ▪ No credit given in lieu of MATH 223 at UofC.
CHEM 211/212 (in lieu of CHEM 203/205)	<ul style="list-style-type: none"> ▪ Credit given for CHEM 103/105 at UofA. ▪ No credit given towards BSc Engineering at UofC.

TRANSFER INFORMATION FOR FACULTY OF ENGINEERING

UNIVERSITY OF ALBERTA

There are just under 4000 undergraduate students and about 1530 graduate students in the Faculty of Engineering. Nine BSc Engineering disciplines are offered: chemical, civil, computer, electrical, engineering physics, materials, mechanical, mining, and petroleum. Twenty-one undergraduate degree programs are offered.

Co-op Program: UofA has the second largest [engineering co-op program](#) in Canada with 1245 students enrolled (approximately 40% of the engineering student population). The program is five years in duration, includes five 4-month work terms of paid work experience, and *Co-operative Program* is noted on the degree parchment. Visa students may study in the traditional engineering programs or apply for one of ten co-op seats available to them. Students wishing to take a co-op program must have a minimum 2.3 GPA and declare their intention when applying to Year 2 as it is the only point of entry.

1. Fall 2011: 836 applicants admitted to Year 2.
2. The minimum transferable grade to University of Alberta is C-.
3. **Admission requirements for Fall 12:** Transfer applicants who complete the qualifying year in one Fall/Winter are guaranteed admission to second year engineering with a minimum 2.5 GPA. Although a 2.5 GPA will guarantee a seat in year two of BSc Engineering it will not guarantee a seat in your program of interest. Admission to individual programs is competitive. High demand programs require a high GPA.
Students with GPAs slightly below 2.5 may apply if they wish. Such applicants will only be offered admission on a space-available basis in programs that have not filled. This may or may not be a program of interest to you. In this situation, GPAs closest to 2.5 receive first consideration. Students with a GPA below 2.5 are strongly advised to apply to other universities that may admit with a lower GPA or apply to a different program at UofA.
4. **Students who do not complete the qualifying year in one academic year** (Fall/Winter) are unlikely to be admitted to BSc Engineering at UofA. *It is highly recommended that students complete all Year 1 courses in one academic year.* Those taking more than one year of study risk never being admitted to Faculty of Engineering.
5. A student may still be admissible if short one course in Year 1 but it must be noted that not all course unit weights are equal and students must have 30 unit weights to apply to Year 2 (see *unit weights* in chart on page 1).
6. Courses taken in **spring terms** will not be counted toward the admission GPA nor will they count towards a full course load for Fall/Winter but they do add transfer credit. If, for example, a student completes Year 1 with fewer than 30.0 unit weights but meets the minimum 2.5 GPA, a course may be taken in the spring term to boost unit weight to 30.0. Students *must* consult with the Faculty of Engineering before taking a spring course in the year of application.
7. **The Faculty of Engineering will make a downward adjustment in the range of 0.30 to 0.50 on a 4-point scale to an applicant's GPA when the student:**
 - took courses in a non-Engineering post-secondary program before beginning the Engineering program and/or
 - spent more than one academic year completing the first year of the Engineering program, and/or
 - carried less than a full course load (30 units weights) in an academic year.

In some instances, the resulting GPA may be too low for a student to compete successfully for admission to Year 2.
8. **The effect of qualifying year course load and course credits on 2nd year admission:** the downward adjustment works as follows, 0.05 GPA units is deducted from the GPA (calculated to two decimal places) for each course weight unit the course load is below 37 (excluding ENGG 200).
9. **Example of a downward adjustment due to light course load:**
 - Unit weight per course is shown in chart on page 1.
 - If your units in the qualifying year are fewer than 37 (not including ENGG 200) a downward adjustment will be made. For example, a student with a full-course load of 38 units who drops MATH 213 (3.5 units) would drop to a course load of 34.5 units. If he/she earned a GPA of 2.70 on 34.5 units, the adjustment would be calculated: $2.5 \times 0.05 = 0.13$. The program admission factor is $2.70 - 0.13 = 2.58$. This student's admission GPA would be 2.58.

If you have questions concerning this contact the RDC Engineering Department or the Faculty of Engineering at UofA.
10. [Admission GPAs for Second Year Programs](#) states the lowest admitted GPA for each program in the most recent admission cycle. This information cannot be used as an indicator of future admission GPAs. (<http://www.engineering.ualberta.ca/en/Students/PlanningProgram/ChoosingSpecialization/GPAsSecondYearPrograms.aspx>)

11. Students will not be accepted to the Engineering Faculty at UofA if they began or transferred into an Engineering program in a winter term at any college or university. Engineering education must start in the fall term.
 12. Students can complete entrance requirements for Doctor of Medicine by taking Biomedical Engineering.
 13. All applicants must demonstrate [English Language Proficiency](#) for the purpose of admission.
 14. **Application deadline and Engineering Program Selection Form deadline:** May 1st
Document deadline: June 15th
 15. The Faculty of Engineering appreciates if you submit your [Program Selection Form](#) by April 8th; however, the deadline is May 1st. Prioritize your program choices carefully as you will be admitted accordingly. If, for example, Materials Co-op is the program you really want to get into, enter Materials Co-op as your first choice and Materials Traditional as your second choice. Once admitted to a program in the Faculty of Engineering it is very difficult to change into a different program. A 3.50 GPA is required to be considered for a program change after admission to a second year program; a change of program at this point is not guaranteed.
 16. It is imperative that students read transfer admission information in the UofA Calendar.
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TRANSFER INFORMATION FOR SCHULICH SCHOOL OF ENGINEERING UNIVERSITY OF CALGARY

The Schulich School of Engineering offers [degree programs](#) in Chemical, Civil, Computer, Electrical, Geomatics (only program in Western Canada), Mechanical, Oil & Gas, and Software. You may also complete a Specialization in Biomedical Engineering, Energy and Environment, or Project Management alongside any regular BSc in Engineering. Combined programs are also available in conjunction with the Faculty of Art leading to the BSc in Engineering and the BA or BSc degrees. Minors are also available. The [Internship Program](#) consists of 12 to 16 months at a job site and is usually done between Years 3 and 4. Half the engineering students at UofC are in the Internship program. Visa students may apply to the Internship program; however, difficulties may be encountered with placements due to Visa issuing time lines. An [Internationalize Program](#) is available in some majors to study abroad.

1. Students transferring to UofC from RDC receive credit in nine first year and two second year courses. They will be short two first year courses (ENGG 251/ ENGG 253) but will have credit in two second year courses.
2. The Schulich School of Engineering has a quota of 540 seats in Year 2. Admission is limited and based on the grade point average (GPA) of courses that are transferable to UofC. Each degree specialization has a separate quota. For more detailed admission information see [Apply to Study](#).
3. Admission of transfer students to Engineering is very competitive and the GPA necessary for admission will differ from one year to the next.
4. Students studying first year engineering at UofC require a minimum 2.0 GPA to continue into Year 2. Transfer students require a minimum 2.5 GPA to be considered for admission to Year 2. Transfer applicants will compete with each other for any available seats; please note a seat may or may not be available in your discipline of choice. Consult with RDC engineering department staff or academic advisors if you require further clarification. [Competitive admission averages](#) for the most recent two years are available in the Faculty website. It is imperative that students read transfer admission information in the UofC Calendar.
5. Applicants are ranked in accordance to their Matriculation Average and/or AGPA and admitted in descending rank order until all available positions in the quotas are filled.
6. UofC advises that applicants who have attended a post-secondary institution two or more years prior to the time of application should consult with the Undergraduate Studies Office, Schulich School of Engineering prior to the application deadline.
7. The minimum grade transferable to the Schulich School of Engineering at University of Calgary is C-. If a transferable course is repeated, only the first passing grade (C- or better) will be counted in the GPA. Courses taken in Spring Terms will *not* be counted toward the admission GPA. Credit will not normally be granted for courses taken eight or more years prior to application to the Faculty of Engineering.
8. All applicants must demonstrate [English language proficiency](#) for the purpose of admission.
9. **Application deadline:** April 1st **Document deadline:** June 30th
10. Students switching *from* UofC's ENGG program *to* a UofC BSc program: CHEM 205 is not accepted for CHEM 212.

SCHULICH SCHOOL OF ENGINEERING ADMISSION REQUIREMENTS

TRANSFER CONDITION	MINIMUM REQUIREMENTS
10 or more single semester university level courses	Admission GPA = 2.50 or more, calculated on most recent courses up to 10; Matriculation Average will not be considered
6 to 9 single semester university level courses	Admission GPA = 2.50 or more, calculated on most recent courses up to 10; Matriculation Average will not be considered
3 to 5 single semester university level courses	Admission GPA = 2.50 or more AND Matriculation Average = 75% or more
0 to 2 single semester university level courses	Matriculation Average = 75% or more; Admission GPA will not be considered
2-year Engineering Diploma or Applied Technology Degree	Cumulative GPA = 3.00 or more on the Diploma or Applied Technology Degree
<p>PLEASE NOTE:</p> <ul style="list-style-type: none"> ▪ Minimum admission requirements do not reflect the final cut-offs which are to be determined in August. In previous years the final cut-off GPAs have been significantly higher than the minimum requirements. ▪ All transfer applicants, regardless of the number of post-secondary courses they have taken before applying, must present matriculation (Grade 12) standing in the five specified high-school subjects, including ELA 30-1, Pure Mathematics 30, Mathematics 31 (Calculus), Physics 30, and Chemistry 30, or equivalents. Admission matriculation average, when required, is calculated on these five subjects. ▪ For transfer applicants who are deficient in one or more of the required high school subjects but have completed similar courses in post-secondary school. The Schulich School and/or the Admissions Office will assess whether the material of the deficient Grade 12 course has been covered by any completed post-secondary courses. 	

FACULTY OF ENGINEERING, UNIVERSITY OF REGINA

1. The minimum transferable grade is C.
2. Five engineering disciplines are offered: Bachelor of Applied Science in Electronic Systems, Environmental systems, Industrial Systems, Petroleum Systems, and Software Systems. Co-op Education programs are available.
3. Students wishing to transfer from RDC to the [Faculty of Engineering at University of Regina](#) must contact the faculty at UofR for program and transfer admission information.

COLLEGE OF ENGINEERING, UNIVERSITY OF SASKATCHEWAN

1. Students wishing to transfer to the College of Engineering at University of Saskatchewan are advised *not* to take courses that transfer as Engineering courses to UofS. Instead, concentrate on courses in Chemistry, Mathematics, and Physics choosing any additional courses from ENGL 219, STAT 251, and 3-credits each in junior and senior course in Humanities and/or Social Science. See College of Engineering website for course selections. Please note as per the College of Engineering, these courses may or may not be applicable for credit to the engineering discipline student chooses to study at UofS. Check UofS [course equivalencies](#).
2. Seven engineering disciplines are offered: Agricultural and Bioresource, Chemical, Civil, Electrical, Engineering Physics, Geological, and Mechanical. Co-op Education programs are available.
3. Students wishing to transfer from RDC to the [College of Engineering at University of Saskatchewan](#) must contact the faculty at UofS for program and transfer admission information

HOW TO FIND MORE INFORMATION

[Science Department](#)

Warren Elgersma, Chairperson
Office: 1607-E 403-343-4052
warren.elgersma@rdc.ab.ca
http://www.rdc.ab.ca/about_rdc/academic_departments/sciences

[Academic Advising](#)

Academic Advising Centre: Room 1102
advisors@rdc.ab.ca 403-342-3400
http://rdc.ab.ca/academic_advising

[RDC Website](#)

<http://www.rdc.ab.ca>

[RDC Timetable](#)

<http://www.rdc.ab.ca/timetable>

[Alberta Transfer Guide](#)

<http://www.acat.gov.ab.ca>

[Faculty of Engineering, UofA:](#)

Doug Clark, Admissions: doug.clark@ualberta.ca
1-800-407-8354 or 780-492-3399
<http://www.engineering.ualberta.ca/>
General questions: enginfo@dean.engg.ualberta.ca
<http://www.registrar.ualberta.ca/calendar/>

[UofA Calendar](#)

[Schulich School of Engineering, UofC:](#)

403-220-5732
<http://schulich.ucalgary.ca/>
enginfo@ucalgary.ca
<http://www.ucalgary.ca/pubs/calendar/>

[UofC Calendar](#)

[Faculty of Engineering & Applied Science, UofR:](#) 306-585-4734

<http://enggdynamic.uregina.ca/>
melody.murray@uregina.ca
<http://www.uregina.ca/gencal/index.shtml>

[UofR Calendar](#)

[College of Engineering, UofS:](#)

306-966-55273
<http://www.engr.usask.ca/>
admissions@usask.ca
<http://www.usask.ca/calendar/>

[UofS Calendar](#)

PLEASE NOTE:

Be aware that you are responsible for ensuring that your registration is complete and appropriate and that your course choices comply with the program to which you have been admitted at RDC and/or to the university to which you wish to transfer.

You are cautioned that any changes to your courses, your major or your transfer destination may adversely affect your transferable credit or admission requirements for future programs. Consult with an academic advisor if you have questions.

The function of academic advisors is to provide students with information and resources that enable them to make informed decisions relevant to their education. These resources include the RDC Calendar, the Academic Planning Guide for your chosen program and destination university, the Alberta Transfer Guide, and the calendar and contact information for your destination university. Academic advisors will assist you in interpreting information from these resources or refer you to your destination university if appropriate. Students in university transfer programs are strongly advised to refer to the calendar of the university to which they wish to transfer and should contact appropriate university departments as required.