GUIDELINES FOR COMPLETION OF UNDERGRADUATE / CERTIFICATE COURSE AND CURRICULUM CHANGES*

*Course and curriculum changes refers to all course introductions, modifications, and deletions, and program modifications.

Course/curriculum change forms are available at: http://umanitoba.ca/admin/governance/forms/index.html. Please ensure that you are using the most current version of Adobe Reader or Adobe Acrobat Pro when completing the forms (https://get.adobe.com/reader/).

Deadlines for submission
Please refer to the SCCCC Timetable for Submissions for specific dates (http://umanitoba.ca/admin/governance/meetings/index.html).

Fall deadlines:
• mid-September - for proposals involving a net increase of 9 or fewer credit hours for consideration by the Senate Committee on Curriculum and Course Changes (SCCCC) only.
• mid-August - for proposals involving a net increase of greater than 9 credit hours, for consideration by the Senate Planning and Priorities Committee (SPPC) and SCCCC (see Section III).

Spring Deadline:
• mid-February - for proposals involving a net increase of 9 or fewer credit hours, for consideration by the SCCCC only.

Please organize your submission as outlined below. Submit a hard copy (single-sided, no staples) and an electronic copy to the Office of the University Secretary. Provide the electronic copy as a single PDF file (including the summary sheet, course/curriculum change forms, and supporting documentation). PDF portfolios will not be accepted.

I. SUMMARY OF COURSE CHANGES AND ROUTINE PROGRAM MODIFICATIONS

A summary sheet is to be provided with all course and curriculum changes submitted to the SCCCC. See Appendix I for examples. The summary sheet must be organized by department and must include, for each department:

- In the following order, a list of all courses to be deleted, introduced, or modified. Include the subject codes and course numbers, course names, and credit hours. Organize the lists of course deletions, introductions, and modifications in alphabetical and ascending numerical order using the subject codes and course numbers.
- A statement of the net change in credit hours* (i.e. total credit hours deleted + total credit hours introduced = net change in credit hours).
- A list of the programs to be modified, including, for each program, a brief description of the proposed changes.
- An executive summary is not required, with the exception that the Université de Saint-Boniface will provide an executive summary in English.

*Course changes resulting in a net increase of more than 9 credit hours will be considered by both the SCCCC and the SPPC. See Section III.

1 Where a faculty, college, or school is not departmentalized, the summary sheet should include the same sorts of information, but for the faculty, college, or school.
II. PROPOSALS FOR SUBSTANTIAL PROGRAM MODIFICATIONS

Proposals to substantially modify existing curricula are sometimes made following a major curriculum review. Different from routine program modifications, they involve numerous course changes and/or significant restructuring of the curriculum. Proposals for substantial program modifications must include:

(a) A summary sheet as described in Section I above.

(b) An executive summary that highlights and provides a brief rationale for important changes and clearly states when the changes are to take effect. To ensure that program changes are reflected in the Academic Calendar, program modifications will be implemented for the next ensuing Fall Term unless a subsequent Fall Term is indicated. Program changes cannot be implemented in the Winter Term.

(c) Current and revised program charts and program descriptions as these would appear in the Academic Calendar, including modifications to any lists of required or elective courses.

(d) A detailed transition plan that:
- includes a timeline for introducing the revised curriculum and phasing out the existing curriculum, including a timeline for deleting any existing courses not to be used in the modified curriculum;
- includes a course map (or curriculum crosswalk);
- describes a pathway(s) for continuing/existing students to either complete the existing curriculum or transition to the modified curriculum;
- outlines future steps associated with the transition to, or the implementation of, the modified curriculum, including a plan to communicate curriculum changes and a timeline for implementation to students, Academic Advisors, and academic units (including other faculties/colleges/schools/departments), as appropriate.

(e) Confirmation of consultation with other units that might be affected by the proposed course and curriculum changes, including Statements of Support from those units. (See Section VIII – Completing the Form – Statement of Support: Request for Action).

(f) A description of the resource implications, including either any anticipated costs (including transitional and/or ongoing costs) that would arise from the introduction of a revised curriculum or a clear statement that the proposal is resource neutral.

(g) The SPPC Program Proposal Budget Form must be completed if the proposal involves a request for new resources. (http://umanitoba.ca/admin/governance/forms/index.html)

Units are strongly encouraged to consult with the Vice-Provost (Integrated Planning and Academic Programs), the Associate University Secretary (Senate) (Office of the University Secretary), and the University Budget Officer, as appropriate, at the outset of planning for substantial revisions to an existing program.

Information on the approval process for major amendments to, or a major expansion of, an existing program is available on the webpage of the Provost and Vice-President (Academic) at http://umanitoba.ca/admin/vp_academic/academic_programs/3722.html
III. COURSE CHANGES BEYOND NINE CREDIT HOURS

Course changes resulting in a net increase of more than 9 credit hours in a department will be considered by both the Senate Committee on Curriculum and Course Changes (SCCCC) and the Senate Planning and Priorities Committee (SPPC). Where a faculty, college, or school is not departmentalized, the net change in credit hours is calculated for the faculty, college, or school.

The net change in credit hours of interest to the SPPC relates to the overall number of credit hours of courses offered by an academic unit (i.e. all of the unit’s courses in the Academic Calendar). It does not relate to the number of credit hours required in any given degree, diploma, or certificate program.

To calculate the net change in credit hours, add the sum of credit hours for all proposed course deletions and the sum of credit hours for all proposed course introductions:

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total \text{ credit hours deleted} + total \text{ credit hours introduced} = \text{net change in credit hours}
\]

For example, if your unit is proposing to delete eight 3 credit hour courses (totalling -24 credit hours) and to introduce ten 3 credit hour courses (totalling +30 credit hours), the net change in credit hours would be +6 credit hours.

Proposals involving a net increase of more than 9 credit hours must be submitted to the Office of the University Secretary by the mid-August deadline (see SCCCC Timetable for Submissions) and must include:

- a covering memo to the SPPC, from the Dean/Director, indicating the date on which the course and curriculum changes have been approved by the faculty/college/school council, as appropriate;
- a statement on the resource implications of the proposal;
- a summary sheet as described above in Section I;
- the SPPC Program Proposal Budget Form must be completed if the proposed changes involve a request for new resources (http://umanitoba.ca/admin/governance/forms/index.html).

The same information and documentation, with the exception of the covering memo to the SPPC, is also to be included in the unit’s submission to the SCCCC. The SCCCC will consider the academic merits of the course and curriculum changes and the SPPC will consider the resource implications of the proposed changes.
IV. COMPLETING THE UNDERGRADUATE COURSE DELETION FORM

- Complete the course deletion form to delete courses that will no longer be offered.
- Complete a course deletion form and a course introduction form (i.e. to re-introduce the course) in the following situations:
  - to change the course number for an existing course
  - to change the subject code for an existing course
  - to change the number of credit hours for an existing course
  - where a change to the long course title requires a to change the short course title
- It is not necessary to complete a separate form for each course deletion. Two (2) course deletions can be proposed on a single form. Complete additional forms, as required. Organize course deletions in alphabetical and numerical order, by subject code and course number.

SECTION A - FACULTY / COLLEGE / SCHOOL AND DEPARTMENT

- Use the drop-down lists to indicate the faculty/college/school and department proposing the course deletion. Indicate the program where there is no department (e.g. Canadian Studies, Environmental Design). The Université de Saint-Boniface is considered a faculty.

SECTIONS B-1 and B-2 – COURSES TO BE DELETED

- Provide the subject code, course number, and number of credit hours in the spaces provided.
- Last term offered – Use the drop-down list to select the current Winter Term and Year (normally) or to request a different term. Note requests for a different term manually on the form or in the first line of the next form field. Courses offered for the last time in a Winter Term would not be available beginning with the next ensuing Summer Term.
- Use the check boxes to indicate if the course is on the Written English (W), Mathematics (M), or RIC List. Check all boxes that apply.
- Indicate the reason for the course deletion. Use the check box to indicate that the deletion responds to a recommendation in an external undergraduate program review. Elaborate on the recommendation and how the deletion addresses that, if appropriate.
- Indicate if the course deletion leads to changes to (i) other courses/programs in your unit and/or (ii) courses/programs in other units. This could be another department, faculty, college, or school.
- In the space provided, list other courses/programs affected, separated by semicolons. For example, other courses that use the deleted course as a prerequisite or corequisite or programs that use the course as a required or elective course. Be as specific as possible. If another program is affected, identify the program and academic unit. If another course is affected, identify the course by its subject code and course number. (See page 6 for information on how to identify courses/programs that would be impacted.)

- If the course deletion leads to a program modification in your unit, include a Program Modification Form with your faculty/college/school submission to SCCCC. See Section VII Completing the Undergraduate Program Modification Form.
- If the course deletion leads to a course modification in your unit, include a Course Modification Form with your units’ submission to SCCCC. See Section VI Completing the Undergraduate Course Modification Form.
• If the course deletion leads to a course/program modification in other units, attach the form Statement of Support: Part A - Request for Action and any responses received (Part B) to the relevant course deletion form. See Section VIII Completing the Form - Statement of Support: Request for Action.

SECTION C – SUPPORTING DOCUMENTATION ATTACHED

• Use the check boxes to indicate the supporting documents attached to the course deletion form or included with the unit’s submission to SCCCC as part of a Program Modification.

SECTION D - SIGNATURES

• Print or type names and sign in the spaces provided. The Head should sign for the department and the Dean/Director for the faculty/college/school. Where more than one faculty/school is involved, the form should be co-signed by the Deans/Directors of the faculties/schools involved, or a statement of support should be provided.
Identifying other courses/programs impacted by a course deletion

- Use the undergraduate Academic Calendar to identify other courses and programs impacted by a course deletion. Complete a keyword search (Control + F on a PC; Command + F on a Mac) of the current PDF version of the Calendar (http://umanitoba.ca/calendar) to identify where the deleted course is used in courses and programs across the University.
  - Courses that would be impacted include those that use the deleted course as a prerequisite or corequisite or are cross-listed with the deleted course. The unit offering the affected course would submit a proposal to modify their course, to reflect that the prerequisite/corequisite/cross-listed course was no longer offered.
  - Programs that would be impacted include those that use the deleted course as a required or elective course or as an admission requirement. Units offering a program impacted by the course deletion would submit a program modification and/or a proposal to modify the admission requirements. The Senate Committee on Admissions (SCADM) would consider the revised admission requirements.
  - For example, a search of the 2018 – 2019 Academic Calendar shows that, outside of other courses and programs in the Department of Sociology and Criminology, SOC 1200 is also:
    - required for admission to the B.R.T. (College of Rehabilitation Sciences);
    - a required or optional course in the: B.H.Ecol. in Family Social Sciences (Department of Community Health Sciences), B.H.St. (Faculty of Health Sciences), B.Sc. in Human Nutritional Sciences (Faculty of Agricultural and Food Sciences), B.R.M.C.D. (Faculty of Kinesiology and Recreation Management, B.R.T. (College of Rehabilitation Sciences);
    - included on the list of electives for the Ukrainan Canadian Heritage Studies programs (Faculty of Arts), the B.H.Sc. and B.H.St. (Faculty of Health Sciences);
    - a recommended elective for B.A. degrees in Global Political Economy;
    - a prerequisite for SOC courses offered by USB, FMLY 3220, FMLY 3240, HEAL 2600, HEAL 4500, HNSC 3320, HNSC 3350;
    - on the RIC list.
- The Registrar's Office (Calendar Coordinator) can assist units to identify courses and programs affected by a course deletion. Please make an initial effort to identify impacted courses and programs through a search of the Academic Calendar before requesting the RO's assistance.
- Course deletions that impact courses/programs in other units should be brought forward for the Fall deadline for SCCCC and/or SPPC, as appropriate. Units initiating changes that impact other units are required to advise those units of the proposed changes and indicate the term the changes would take effect. This will give other units an opportunity to submit corresponding changes to the SCCCC for the same Fall deadline (ideally) or the next ensuing Spring deadline.
- Use the form Statement of Support: Part A - Request for Action to advise other units of changes that will affect their courses/programs. See Section VIII Completing the Form - Statement of Support: Request for Action.
V. COMPLETING THE UNDERGRADUATE COURSE INTRODUCTION FORM

- Use the course introduction form to introduce a new course.
- Complete a course introduction form and a course deletion form in order to re-introduce a course with a different:
  - course number
  - subject code
  - number of credit hours
  - grading mode
  - long title and short title (i.e. where both the long title and the short title will change)
- See Section IV Completing the Undergraduate Course Deletion Form.

SECTION A – COURSE DETAILS

- Use the drop-down lists to indicate the faculty/college/school and department proposing the course deletion. Indicate the program where there is no department (e.g. Canadian Studies, Environmental Design). The Université de Saint-Boniface is considered a faculty.
- The subject code (e.g. ECON, CHEM, NURS, etc.) and course number must be confirmed with the Registrar’s Office (Calendar Coordinator) before submitting the proposal for the SCCCC’s review. NB: Course numbers from courses that were previously deleted cannot be re-used.
- Long title (maximum 90 characters; e.g. History of Opera I: From Monteverdi to Mozart)
- Short title (maximum 30 characters; e.g. History of Opera 1)
- Credit hours – indicate the number of credit hours in Section A and in the course description.
- Grading mode – use the drop-down list to indicate either “letter grade” or “pass/fail”. The course description must indicate where the grading mode is “pass/fail”.
- First term offered – use the drop-down list to select the next ensuing Fall Term and Year (normally) or to request a different term. Requests for a different term may be noted manually on the form or in the first line of the next form field in Section B.

SECTION B – COURSE DESCRIPTION FOR ACADEMIC CALENDAR

Provide the course description exactly as it would appear in the Academic Calendar. Forms will be returned to the academic unit for amendment where course descriptions are incomplete.

- In the first line of the course description, indicate the subject code, course number, long title, number of credit hours (e.g. MUSC 3230 Acoustics of Music Cr.Hrs. 3).
- For course modifications, do not indicate the previous IMS course number at the beginning of a course description [i.e. (Formerly 017.336)].
- In the body of the course description, provide the following information in the order listed:
  - Indicate where a laboratory, tutorial, or field trip is required [e.g. (Lab required)].
  - Provide a brief description of the course content (ideally not more than 4 – 5 lines).
  - List mutually exclusive and equivalent courses prefaced by “May not be held with…” and indicated by the subject code and course number and including all applicable previous course numbers but not including IMS course numbers. Be sure to include Université de Saint Boniface course numbers where equivalency exists.
  - Indicate any registration restrictions (See Section V D).
o Indicate any prerequisite, corequisite, pre- or corequisite courses by the subject code and course number (but not the course title). Include all applicable previous course numbers but not including IMS course numbers (e.g., 017.336). Be sure to include equivalent Université de Saint Boniface course numbers.
   In cases where a prerequisite course is no longer offered, use the phrase "or the former" in the prerequisite list (e.g., ECON 1010 and ECON 1020 or the former ECON 1200).

o Indicate as a letter grade, the required minimum grade for an examination or an equivalency test. Indicate the required minimum grade for prerequisite courses where the minimum grade is not a (C) [e.g. BIOL 1030 (B)].

o Indicate where the course can be completed as a topics course multiple times under different titles.

o Indicate where the grading mode is pass/fail.

• See Appendix II for examples of course descriptions.
• See page 10 for definitions of prerequisite, corequisite, pre- or corequisite, and equivalent and mutually exclusive courses.

SECTION C – RATIONALE FOR NEW COURSE

• Use the check box to indicate where a course introduction responds to a recommendation in an external undergraduate program review.

• Provide a brief rationale for the course introduction and explain how it would contribute to the curriculum. Reasons for course introductions might include, but are not limited to: introducing new material in keeping with advances and/or changes in the foci of a particular discipline or department; responding to a recommendation in an academic program review; accommodating the expertise of a new faculty member; division of a spanned course into two single term courses.

• Indicate if the course introduction replaces a current course or is a new required or elective course that will lead to program changes in your unit. See Section V F Resulting Changes to Programs.

SECTION D – REGISTRATION RESTRICTIONS

• Indicate where a restriction is to be added, to restrict registration to students in a particular academic unit and/or program(s), including level or year of study. List the academic unit and/or programs(s) in the spaces provided. Indicate registration restrictions in the course description. Contact the Registrar’s Office to discuss options for restricting registration.

SECTION E – ADDITIONAL COURSE DETAILS

Laboratory / Tutorial / Field Trip Requirement

• Use the check boxes to indicate whether a laboratory, tutorial, or field trip is required. Check all boxes that apply. Laboratory, tutorial and field trip requirements must be indicated in the course description. See Section V B above and examples of course descriptions in Appendix II.

Topics courses

• Use the check boxes to indicate (i) if the proposed course is a topics course and (ii) if the topics course can be held multiple times under different titles. Check both boxes where both apply. If a topics course can be held multiple times under different titles, indicate this in the course description. See Section V B above and examples of course descriptions in Appendix II.
Written English and Mathematics Requirements, Recommended Introductory Course List

- Use the check boxes to indicate where the course is intended to satisfy the Written English (W) or the Mathematics (M) requirement or is to be included on the Recommended Introductory Course List (RIC List). Check all boxes that apply.
- Attach the form Statement of Support: Part A -Request for Action and responses received (Part B) to the relevant course introduction form.
- See Section VII Completing the Form Statement of Support: Request for Action.

SECTION F – RESULTING CHANGES TO COURSES / PROGRAMS

- Use the check boxes (check all boxes that apply) to indicate whether the course introduction leads to changes to:
  - other courses in your unit
  - programs in your unit
  - courses in other academic units
  - program changes in other academic units
- In the space provided, list all courses/programs affected, separated by semicolons. Be as specific as possible, identifying courses by subject code and course number (e.g. SOC 1200) and programs by the credential and academic unit.
- If the course introduction leads to program modifications in your unit, include a Program Modification Form with your unit’s submission to SCCCC. See Section VII Completing the Program Modification Form.
- If the course introduction leads to program changes in other academic units, attach the form Statement of Support: Part A -Request for Action and any responses received (Part B). See Section VIII Completing the Form Statement of Support: Request for Action.
- Course introductions that impact programs in other units should be brought forward for the Fall deadline for SCCCC or SPPC, as appropriate. Units initiating changes that impact other units are required to advise those units of the proposed changes and indicate the term the changes would take effect. This will give other units an opportunity to submit corresponding changes to the SCCCC for the same Fall deadline (ideally) or the next ensuing Spring deadline.
- Refer to Section IV above (page 6) for instructions on identifying impacted courses and programs.

SECTION G – STATEMENT OF CHANGES TO COSTS, WORKLOAD, AND/OR SUPPLIES

- Provide a statement of changes to costs if there is a change in any of the following:
  - workload of academic or support staff or reassignment of workload from one faculty/school to another;
  - requirements for additional space, renovations to existing space or changes in the usage of space;
  - costs of supplies and expenses including any specific media/technology requirements associated with the teaching of the course.
SECTION H – PREREQUISITES, COREQUISITES, AND EQUIVALENCY/MUTUAL EXCLUSIVITY

- In the spaces provided, list all prerequisite, corequisite, pre- or corequisite, and mutually exclusive courses, including all applicable previous courses numbers (including previous Aurora and IMS course numbers). Be sure to include equivalent Université de Saint Boniface course numbers.
- Where it is necessary to list a number of courses, use “and” or “or” statements and make use of [square brackets] to separate lists where these would provide clarity. See examples provided in Appendix II.
- Indicate as a letter grade where a minimum grade for a prerequisite course, examination, or equivalency test is required. A minimum grade of “C” is assumed. A different minimum grade must be stated.

Use of terms:
- **Prerequisite course** – a course that must be taken before the proposed course. A minimum grade of “C” is assumed. A different minimum grade must be stated.
- **Pre- or Corequisite course** – where concurrency in the prerequisite course is allowed
- **Corequisite course** – a course that must be taken at the same time as the proposed course (cannot be a spanned course)
- **Equivalent course** – any existing or former course, with the same number of credit hours and at the same level, that could be used in place of the proposed course to meet program requirements based on equivalent course content. Equivalent courses cannot be held together for credit.
- **Mutually exclusive course** – any existing or former course, with significant content overlap, but cannot be used in place of the proposed course because it is at a different level or has a different number of credit hours. Courses once offered as topics courses are also mutually exclusive to newly introduced courses with the same topic. Mutually exclusive courses cannot be held together for credit.
  Course equivalency/mutual exclusivity is set up in the system to prevent students from registering in and holding credit for two courses with the same or similar content.
- **Spanned course** – a course that spans the Fall and Winter Terms.

SECTION I – SUPPORTING DOCUMENTATION ATTACHED

- Use the check boxes to indicate the **supporting documents** attached to the course introduction form or included with the faculty/college/school submission to SCCCC as part of a proposed Program Modification. Check all boxes that apply.
- **A course outline** is required for all course introductions. Exceptions are sometimes allowed where an existing course is being re-introduced, for example, with a different course number or course title.
- Course outlines are provided to SCCCC for information on the manner in which the course content set out in the course description will be delivered and evaluated. The SCCC recognizes that course outlines may be subject to future changes by the instructor.
- **See Section IX Other Supporting Documentation** for information on content to be provided in the course outline for the SCCCC.
- **A Library statement** is normally required for a course introduction, including topics courses. A library statement may not be required for the following types of courses: studio, ensemble, clinical and other practicums, co-operative, field work, and work terms.
- **See Section IX Other Supporting Documentation** for additional information on Library statements.
SECTION J - SIGNATURES

- Print or type names and sign in the spaces provided. The Head should sign for the department and the Dean/Director for the faculty/college/school. In cases where there is more than one faculty/college/school involved, the form should be co-signed by the Deans/Directors of the faculties/colleges/schools involved, or a supporting statement should be provided.
VI. COMPLETING THE UNDERGRADUATE COURSE MODIFICATION FORM

- Use the course modification form in order to change the:
  - long course title without changing the short course title
  - course description (minor changes and excluding changes to course content, which would require a course deletion and introduction)
  - prerequisite, corequisite, pre- or corequisite, and or mutually exclusive courses
  - grading mode
  - registration restrictions
  - suitability for the Written English (W) or Mathematics (M) requirement or the Recommended Introductory Course List (RIC List)

- If the short course title, the course number, the subject code, or the number of credit hours is to be changed do not use this form. The current course MUST be deleted and introduced under the new title and/or number.

SECTION A – COURSE DETAILS

- Use the drop-down lists to indicate the faculty/college/school and department proposing the course deletion. Indicate the program where there is no department (e.g. Canadian Studies, Environmental Design). The Université de Saint-Boniface is considered a faculty.
- Indicate the subject code (e.g. ECON, CHEM, NURS, etc.) and course number.
- Provide the current long title (maximum 90 characters; e.g. History of Opera I: From Monteverdi to Mozart.
- Indicate the revised long title (maximum 90 characters), if it is to be modified.
- Indicate the current credit hours.
- Revised grading mode – Use the drop-down list to indicate if the grading mode for the course will be changed from a standard letter grade to pass/fail or vice versa. The course description must indicate where the grading mode is “pass fail”.
- Changes Take Effect – Use the drop-down list to select the next ensuing Fall Term and Year (normally) or to request a different term. Exceptions may apply for courses to take effect in the next ensuing Summer Term. Requests for exceptions may be noted manually on the form or in the first line of the next form field.

SECTION B – MODIFIED COURSE DESCRIPTION

- Provide a modified course description exactly as it would appear in the Academic Calendar. Forms will be returned to the unit for amendment where course descriptions are incomplete.
- See Section V B above (pages 7–8) for information on the format of, and information to be included in, the course description.
- See Appendix II for examples of course descriptions.

SECTION C – CURRENT COURSE DESCRIPTION

- Provide the current course description exactly as it appears in the current Academic Calendar.
SECTION D – RATIONALE

- Use the check box to indicate where a course modification responds to a recommendation in an external undergraduate program review.
- Provide a brief description of the modification and the rationale for the change, including an explanation of how it might enhance or otherwise impact the curriculum. Reasons for modifying a course might include but are not limited to: updating material in keeping with advances and/or changes in the foci of a particular discipline or department; responding to a recommendation in an academic program review; responding to program modifications.

SECTION E – DETAILS OF PROPOSED MODIFICATIONS

(Complete this section only where changes to any of the following things are proposed.)

Adding/Revising Registration Restriction

- Indicate where a restriction, to restrict registration to students in a particular academic unit and/or program(s), including level or year of study, is to be added or revised. List the academic unit and/or programs(s) in the spaces provided. Indicate registration restrictions in the modified course description. Contact the Registrar's Office to discuss options for restricting registration.

Adding /Removing Laboratory / Tutorial / Field Trip Requirement

- Use the check boxes to indicate whether the course is being modified in order to add/remove: a laboratory requirement, a tutorial, a field trip requirement. Check all boxes that apply. If a laboratory, tutorial, or field trip requirement is added, this must be indicated in the modified course description. (See Section V B above and Appendix II).

Written English and Mathematics Requirements, Recommended Introductory Course List

- Use the check boxes to indicate where a modified course now satisfies / no longer satisfies: the Written English (W) or the Mathematics (M) requirement or criteria for the Recommended Introductory Course List (RIC List). Check all boxes that apply.
- Attach the completed form Statement of Support: Part A - Request for Action and responses received (Part B) to the relevant course modification form. See Section VIII Completing the Form Statement of Support: Request for Action.

SECTION F – RESULTING CHANGES TO COURSES / PROGRAMS

- Use the check boxes (check all boxes that apply) to indicate whether the course modification leads to changes to:
  - other courses in your unit
  - programs in your unit
  - courses in other academic units
  - program changes in other academic units
- In the space provided, list all of the courses/ programs affected, separated by a semicolon. Be as specific as possible, identifying the courses by subject code and course number (e.g. SOC 1200) and programs by the credential and academic unit.
- If the course modification leads to other course modifications in your unit, include a Course Modification Form with your units’ submission to SCCCC. See Section VI Completing the Undergraduate Course Modification Form.
• If the course modification leads to program modifications in your unit, include a Program Modification Form with your unit’s submission to SCCCC. See Section VII Completing the Program Modification Form.

• If the course modification leads to program changes in other academic units, attach a completed form Statement of Support: Part A - Request for Action and any responses received (Part B). See Section VIII Completing the Form Statement of Support: Request for Action.

• Course modifications that impact courses and programs in other units should be brought forward for the Fall deadline for SCCCC or SPPC, as appropriate. Units initiating such changes are required to advise other units of the proposed changes and indicate the term the change would take effect. This will give other units an opportunity to submit corresponding changes to the SCCCC for the same Fall deadline (ideally) or the next ensuing Spring deadline.

• Refer to Section IV above for instructions on identifying impacted courses and programs.

SECTION G – STATEMENT OF CHANGES TO COSTS, WORKLOAD, AND/OR SUPPLIES
• Provide a statement of changes to costs if there is a change in any of the following:
  o Workload of academic or support staff or reassignment of workload from one faculty/school to another.
  o Requirements for additional space, renovations to existing space or changes in the usage of space.
  o Costs of supplies and expenses including any specific media/technology requirements associated with the teaching of the course.

SECTION H – PREREQUISITES, COREQUISITES, & EQUIVALENCY/MUTUAL EXCLUSIVITY
• See page 10 for definitions of prerequisite, corequisite, equivalent, and mutually exclusive courses.

• In the spaces provided, list all prerequisite, corequisite, pre- or corequisite, and mutually exclusive courses, including all applicable previous courses numbers (including previous Aurora and IMS course numbers). Be sure to include equivalent Université de Saint Boniface course numbers, where applicable.

• Indicate as a letter grade where a minimum grade for a prerequisite course, examination, or equivalency test is required. A minimum grade of “C” is assumed. A different minimum grade must be stated.

• Where it is necessary to list a number of courses, be explicit by using “and” and “or” statements and make use of [square brackets] to separate lists where these would provide clarity. See examples provided in Appendix II.

SECTION I – SUPPORTING DOCUMENTATION ATTACHED
• Use the check boxes to indicate which supporting documents are attached to the course modification form or included with the unit’s submission to SCCCC as part of a proposed Program Modification. Check all boxes that apply. See Section IX Other Supporting Documentation.

SECTION J - SIGNATURES
• Print or type names in the spaces provided and sign. The Head should sign for the department and the Dean/Director for the faculty/college/school. In cases where there is more than one faculty/school involved, the form should be co-signed by the Deans/Directors of the faculties/colleges/schools involved, or a supporting statement should be provided.
VII. COMPLETING THE UNDERGRADUATE PROGRAM MODIFICATION FORM

- Complete a program modification form where:
  - course or curriculum changes proposed by your unit or by another faculty/college/school lead to program modifications in your unit, including but not limited to, changes to required or elective courses in a program;
  - a program is restructured or the credit hour system is revised, resulting in changes to credit hours for a large number of courses;
  - the unit is proposing a change to the name of a program.

- Units are strongly encouraged to contact the Associate Registrar regarding proposed program modifications, prior to submitting these to the SCCCC, to test the technical requirements of the modified program.

- Information on the approval process for major amendments to, or major expansion of, an existing program is available on the webpage of the Provost and Vice-President (Academic) [http://umanitoba.ca/admin/vp_academic/academic_programs/3722.html](http://umanitoba.ca/admin/vp_academic/academic_programs/3722.html).

- Information on additional documentation required for proposals for substantial amendments to, or major expansion of, an existing program can be found on page 2 of these Guidelines.

- Units are strongly encouraged to consult with the Vice-Provost (Integrated Planning and Academic Programs), the Associate University Secretary (Senate) (Office of the University Secretary), and the University Budget Officer, as appropriate, at the outset of planning for substantial revisions to an existing program.

SECTION A – FACULTY / COLLEGE / SCHOOL AND DEPARTMENT

- Use the drop-down lists to indicate the faculty/college/school and department proposing the course deletion. Indicate the program where there is no department (e.g. Canadian Studies, Environmental Design). The Université de Saint-Boniface is considered a faculty.

- Provide the name of the program in the space provided, including the credential and discipline (e.g. B.Sc. in Agriculture; B.Sc. in Engineering (Civil); B.Sc. (Hons.) in Physics and Astronomy – Astronomy (Option A)).

- Changes Take Effect – Use the drop-down list to select the next ensuing Fall Term and Year (normally) or to request a different term. Requests for exceptions may be noted manually on the form, in the first line of the next form field, in Section B.

SECTION B – DESCRIPTION OF PROGRAM MODIFICATION

- Provide a brief description of the proposed program modification. Include the same description on the summary sheet to be included at the beginning of the submission to SCCCC. (Limit – 200 words)

- For substantial program modifications, see Section II – Proposals for Substantial Program Modifications, on page 2.

SECTION C – RATIONALE

- Use the check box to indicate where a program modification responds to a recommendation in an external undergraduate program review.

- Provide a brief rationale for the proposed program modification. (Limit- 150 words)
SECTION D – ACADEMIC CALENDAR CONTENT

Attach a revised program description, including program charts and any other Academic Calendar content that would require updates to reflect course and curriculum changes. Beginning with the program description as it appears in the current Academic Calendar, clearly indicate proposed changes using strikethrough font (e.g., strikethrough) to indicate content that is to be deleted and bold font to indicate content that is to be added. See Appendix III for examples.

SECTION E – STATEMENT OF CHANGES TO COSTS, WORKLOAD, AND/OR SUPPLIES

- Provide a statement of changes to costs if there is a change in any of the following:
  - Workload of academic or support staff or reassignment of workload from one faculty/school to another.
  - Requirements for additional space, renovations to existing space or changes in the usage of space.
  - Costs of supplies and expenses including any specific media/technology requirements associated with the teaching of the course.

- The SPPC Program Proposal Budget Form must be completed if the proposed changes involve a request for new resources.

SECTION F – CONSULTATION WITH OTHER UNITS THAT MIGHT BE AFFECTED BY CHANGES

- Indicate whether the proposed program modification leads to program modifications in other academic units. In the space provided, list all of the programs affected, separated by a semicolon. Be as specific as possible, identifying the programs by the credential and academic unit.

- If the course modification leads to program changes in other academic units, attach the form Statement of Support: Part A -Request for Action and any responses received (Part B). See Section VIII Completing the Form Statement of Support: Request for Action.

- Proposals for program modifications that would have impacts in other units, should be brought forward for the Fall deadline for SCCCC or SPPC, as appropriate. Academic units initiating such changes are required to advise other affected units of the proposed changes, including an indication of the term the change would take effect, so other units have an opportunity to submit corresponding changes to the SCCCC for the same Fall deadline, ideally, or the next ensuing Spring deadline.

- See Section IV above (page 6) for instructions on identifying impacted courses and programs.

SECTION G – SUPPORTING DOCUMENTATION ATTACHED

- Use the check boxes to indicate the supporting documents attached to the program modification form. Check all boxes that apply. See Section IX Other Supporting Documentation.

SECTION H – SIGNATURES

- Print or type names and sign in the spaces provided. The Head should sign for the department and the Dean/Director for the faculty/college/school. In cases where there is more than one faculty/college/school involved, the form should be co-signed by the Deans/Directors of the faculties/colleges/schools involved, or a supporting statement should be provided.
VIII. COMPLETING THE FORM - STATEMENT OF SUPPORT – REQUEST FOR ACTION

A statement of support from other departments/faculties/colleges/schools is required for curriculum or course changes (including program proposals) where:

- there is possible curricular overlap or infringement or conflict of jurisdiction;
- courses/programs in other units would be affected by a proposed curriculum or course change in your unit;
- there is a request for assessment of a course that is intended to satisfy either the Written English (W) or Mathematics (M) requirement (See Section IX Other Supporting Documentation);
- there is a request for a new or modified course to be assessed for inclusion on the Recommended Introductory Course List (RIC List). See Section IX Other Supporting Documentation.

Part A (Sections A through D) and Part B (Section F) of the form are to be completed by the unit requesting a statement of support. A copy of the form, with these sections completed, is to be provided to each unit from which a statement of support is sought, along with any supporting documentation that might be required, for example, course descriptions and course outlines, as appropriate, for new or modified courses.

One copy of the completed form (Part A – Sections A through D) plus any statements of support received from the other units (Part B – Sections F through J) are to be submitted with your faculty/college/school’s submission to SCCC.

SECTION A - FACULTY / COLLEGE / SCHOOL AND DEPARTMENT

Use the drop-down lists to indicate the faculty/college/school and department requesting the statement of support. Indicate the program where there is no department (e.g. Canadian Studies, Environmental Design). The Université de Saint-Boniface is considered a faculty.

SECTION B – REASON FOR REQUEST FOR SUPPORT

Use the check boxes (check all boxes that apply) to indicate what the request for a statement of support relates to:

- possible curricular overlap or infringement or conflict of jurisdiction with other units;
- possible course/program changes in other units arising from proposed course/program changes in your unit;
- possible impact on demand (increased or decreased) for specific courses in other units;
- a request for assessment of a course intended to satisfy the Written English (W) requirement, the Mathematics (M) requirement, inclusion on the RIC List (see below).

Indicate the SCCC deadline that your unit will meet. Check the relevant check box to select either the Fall or the Spring deadline.

Indicate the date on which the request for support – Part A was sent to the unit(s) receiving the form in the space provided.

Specify the date by which your unit requires a response from the other units. Units requesting a statement of support should allow a minimum of four (4) weeks for the other unit(s) to respond. The absence of a response should not be understood to be an indication of support.
Written English (W) and mathematics (M) requirements: Proposals for new and modified courses intended to satisfy the Written English (W) or the Mathematics (M) requirement must be reviewed and accepted by the review committee within the Department of English, Theatre, Film & Media or the Department of Mathematics, as appropriate. The review must be completed prior to submitting the course introduction/modification to the SCCCC. Submissions to the appropriate departmental review committee must include the course introduction/modification form and a two-page course outline and should be sent to the attention of the appropriate Department Head. The criteria for identification of courses as satisfying the University Written English (W) and Mathematics (M) requirements are available at http://umanitoba.ca/faculties/arts/media/Criteria_for_English-Math.pdf.

Recommended Introductory Course List (RIC List): New and modified 1000- and 2000-level courses without prerequisites that are to be included on the RIC List must be reviewed and accepted for inclusion on the list by the Executive Director, Student Engagement and Success. The review must be completed prior to submitting the course introduction/modification to the SCCCC. Submissions must include the course introduction/modification form and two-page (maximum) course outline and should be sent to the Executive Director, Student Academic Success, who will review requests on an ongoing basis. Faculties/colleges/schools are also required to notify the Executive Director, Student Engagement and Success and the SCCCC when a course is to be removed from the RIC List. Such notification can be provided on the course modification/deletion form, as appropriate.

SECTION C – DESCRIPTION OF PROPOSED CURRICULUM/COURSE CHANGE
Briefly describe the proposed curriculum or course change in your unit and outline the reasons for your request for support in the space provided. Be as specific as possible, including with respect to the potential impact on courses/curricula in other units. For example, SUBJ 1XXX, which is to be deleted, is used as a prerequisite in your course SUBJ 2XXX or is required/used as an elective in your degree program (indicate credential and discipline).

Attach any supporting documentation that might be required to describe the proposed course/program change proposed by your unit.

SECTION D – UNIT(S) RECEIVING STATEMENT OF SUPPORT: REQUEST FOR ACTION
List all of the faculties/colleges/schools/departments solicited for a statement of support in the space provided.

SECTION E – STATEMENT(S) OF SUPPORT RECEIVED
One copy of the Statement of Support: Part A – Request form is to be included in your unit’s submission to SCCCC, together with all of the responses received from other units (Statement of Support: Part B – Response).

SECTION F – UNIT REQUESTING SUPPORT
  o To be completed by the unit requesting a statement of support.
  o Units asked to provide a statement of support should do so in a timely way, to facilitate the curriculum review processes within both units as well as the SCCCC review process.
  o Use the drop-down lists to indicate the faculty/college/school/University 1 and department (or program – e.g. Canadian Studies Program, Labour Studies Program) requesting the statement of support.
SECTION G – UNIT RESPONDING TO REQUEST

- To be completed by the unit responding to a request for a statement of support.
- Use the drop-down lists to indicate the faculty/college/school/University 1 and department (or program – e.g. Canadian Studies Program, Labour Studies Program) responding to the request for a statement of support. The Université de Saint-Boniface is considered a faculty.

SECTION H – RESPONSE TO REQUEST

- To be completed by the unit responding to a request for a statement of support.
- In the space provided, indicate whether your unit does/does not support the proposal and briefly outline the rationale.

SECTION I – IMPACT ON COURSES/PROGRAMS IN UNIT RESPONDING AND NEXT STEPS

- To be completed by the unit responding to a request for a statement of support.
- List the courses/programs in your unit that would be impacted by the curriculum/course change being proposed.
- Indicate the course/curriculum changes that your unit would be required to make, as a result.
- Indicate when your unit will submit those course/curriculum changes to the SCCCC for Senate approval (e.g. Fall 2019 or Spring 2020). Normally, this would be the next Fall or Spring submission deadline, as specified in the SCCCC Timetable for Submissions (http://umanitoba.ca/admin/governance/meetings/index.html) and, ideally, it would be submitted for the same SCCCC deadline that the unit prompting the change will meet.

SECTION J – SIGNATURES

- Print or type names and sign in the spaces provided. The Head should sign for the department and the Dean/Director for the faculty/college/school. In cases where there is more than one faculty/college/school involved, the form should be co-signed by the Deans/Directors of the faculties/colleges/schools involved, or a supporting statement should be provided.
IX. OTHER SUPPORTING DOCUMENTATION

1. Course outline – required for all course introductions

A two (2) page (maximum) outline including:

- the course name, subject code, and course number
- a statement of course objectives
- a statement of course format, including lecture, laboratory, and tutorial hours per week
- a list of topics to be covered in lectures
- a statement on grading and evaluation, including information on the grading scheme, and a brief description of laboratories, tutorials, and assignments, including the weightings of the various types of assessments
- required textbook(s)/readings, if applicable

Course outlines are provided to SCCCC for information, to provide additional information on the manner in which the course content set out in the course description will be delivered and evaluated. The committee recognizes that course outlines will be subject to future changes by the instructor and the department/faculty/school.

2. Library statement: A statement from the subject librarian must accompany all proposals for new courses. The Library must be provided with a course outline as described above. As well, the proposing unit and the subject librarian should discuss and agree upon the bibliography to be used in assessing the strength of the Library’s collection in the field. In the case of topics courses, departments are not required to provide the Library with a detailed bibliography but must provide a summary of the topics that might be covered in the course. The Library will need at least one month’s notice of course proposals in order to prepare the statement. Additional time will be required for program proposals or for significant program modifications involving multiple course changes.

A library statement may not be required for the following types of courses: studio, ensemble, practicums, co-operative, field work, and work terms. A library statement is required for topics courses. Please consult with the Library to confirm whether or not a library statement is required.
SUMMARY SHEET: EXAMPLES

Faculty of Environment, Earth, and Resources

Geological Sciences
Introductions:
GEOL 4380 Mineral Resource Development Cr.Hrs. 3 +3.0

NET CHANGE IN CREDIT HOURS: +3.0

Program modifications:
The Department is proposing that the Geological Sciences – Geology Electives List B and the Geological Sciences – Geophysics Electives List B be modified to include GEOL 4380.

Faculty of Music
Deletions:
MUSC 1070 Introduction to the History of Music Cr.Hrs. 3 -3.0
MUSC 1080 History of Music 2 Cr.Hrs. 3 -3.0

Introductions:
MUSC 1004 Introduction to Music in History 1 Cr.Hrs. 3 +3.0
MUSC 3054 Medieval and Renaissance Music History Cr.Hrs. 3 +3.0
MUSC 3064 Baroque Music History Cr.Hrs. 3 +3.0

Modifications:
MUSC 1190 Ensemble Cr.Hrs. 2 0.0
MUSC 2400 Major Practical Study Cr.Hrs. 6 0.0
MUSC 3090 Introduction to Ethnomusicology Cr.Hrs. 3 0.0

NET CHANGE IN CREDIT HOURS: +3.0

Program modifications:
The faculty is proposing program modifications to the Bachelor of Music, including the General, Performance, Composition, and History concentrations, the Bachelor of Music / Bachelor of Education (Integrated Music Education Program), and the Bachelor of Jazz Studies program in order to: establish a common first year for all students; introduce greater flexibility; clarify curricular structures; eliminate redundancies and gaps; improve balance between academic and performance-based student activities.
FORMAT FOR COURSE DESCRIPTIONS:

Examples of laboratory requirement:

MATH 2130 Engineering Mathematical Analysis 1 Cr.Hrs. 3  
(\textit{Lab required}) Multivariable differential and integral calculus up to and including multiple integrals in cylindrical and spherical coordinates. For Engineering and Geophysics students only. May not be held with MATH 2720, MATH 2750, or the former MATH 2110. Prerequisites: MATH 1210 or MATH 1211, and MATH 1710.

POLS 1010 Political Ideas and Ideologies Cr.Hrs. 3  
(\textit{Lab required}) An introduction to different philosophical systems of political beliefs and values that structure contemporary political discourse and practise.

Examples of field trip requirement:

BIOL 4390 Principles of Wildlife Management Cr.Hrs. 3  
(\textit{Lab Required}) Introduction to the biological and socioeconomic goals of wildlife management and to the basic techniques of wildlife management in terms of these goals. \textbf{There will be four or five field trips.} Some weekend field trips may be required. Prerequisite: BIOL 3310 (ZOOL 3680); or consent of department.

NATV 3100 Aboriginal Healing Ways Cr.Hrs. 3  
This course allows students to work with Aboriginal elders or traditional teachers on concepts of healing and wellness. Emphasis is on Anishinabe or Cree healing practices, though other First Nations approaches may be offered. \textbf{This course may include a field trip component.} Students may not hold credit for both NATV 3100 and NATV 3000 when titled “Exploring Aboriginal Healing.” Prerequisite: NATV 2100 or written consent of the department head.

Examples of prerequisites and pre-or corequisites, including where there is a minimum grade requirement:

GEOL 4380 Mineral Resource Development Cr.Hrs.3  
Examination of economic, political, social, and environmental considerations that affect exploration and mining activity. \textbf{Prerequisite: GEOL 3130 (C+). Pre- or co-requisite: GEOL 4300.}

MATH 2130 Engineering Mathematical Analysis 1 Cr.Hrs. 3  
(\textit{Lab required}) Multivariable differential and integral calculus up to and including multiple integrals in cylindrical and spherical coordinates. For Engineering and Geophysics students only. May not be held with MATH 2720, MATH 2750, or the former MATH 2110. \textbf{Prerequisites: MATH 1210 or MATH 1211, and MATH 1710.}

ABIZ 2390 Introduction to Environmental Economics Cr.Hrs. 3  
The economics of management of water, air and land resource quality, and the economics of conservation. The economic implications of environmental standards, licensing, criteria and pollution charges will be illustrated by current issues. Students may not hold credit for both ABIZ 2390 and ECON 2390. \textbf{Prerequisite: [ECON 1010 or ECON 1011 or the former ECON 1200 or the former ECON 1201] or [ECON 1210 (or ECON 1211) and ECON 1220 (or ECON 1221)].}

Examples of mutually exclusive course:

MATH 2130 Engineering Mathematical Analysis 1 Cr.Hrs. 3  
(\textit{Lab required}) Multivariable differential and integral calculus up to and including multiple integrals in cylindrical and spherical coordinates. For Engineering and Geophysics students only. \textbf{May not be held with MATH 2720, MATH 2750, or the former MATH 2110. Prerequisites: MATH 1210 or MATH 1211, and MATH 1710 (C).}

PDSD 3412 Pediatric Dentistry 2 Cr.Hrs. 3  
A series of seminars and clinics to give the student a basic understanding and some clinical experience with: clinical procedures, emergency treatment, psychological management, preventive medical considerations and the provision of total dental care to pediatric patients. \textbf{May not be held with PDSD 3050.}
Example of topics course:
SOC 4530 Readings in Sociology Cr.Hrs. 3
A reading course for undergraduates and pre-Master's in sociology. Prerequisite: written consent of department head. As the course content will vary from term to term, students may take this course more than once for credit.

Example of pass/fail grading mode:
NURS 3320 Clinical Nursing Practice 4 Cr.Hrs. 3
Students will apply concepts of health maintenance to clients of all ages with long term illness. The course focuses on chronic illness and related phenomena, analytical thinking, development of nursing roles, application of research findings and membership on an interdisciplinary team. Pre- or corequisite: NURS 3280, NURS 3310. Course evaluated on a pass/fail basis.

Example of registration restriction:
MECH 4162 Thesis Cr.Hrs. 6
The course will give students the opportunity to gain a research or design experience in their area of interest. Thesis topics must be approved by the head of the department or designate. This course is restricted to students in Year 4 Mechanical Engineering. Prerequisites: ENG 2010 and eligible to graduate. Not to be held for credit with MECH 4160.
EXAMPLES OF DESCRIPTIONS OF PROGRAM MODIFICATIONS:

Revisions to B.Sc. Honours in Actuarial Mathematics

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>YEAR 4</th>
</tr>
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<td><strong>HONOURS ACTUARIAL</strong> 120 CREDIT HOURS</td>
<td><strong>HONOURS ACTUARIAL</strong> 120 CREDIT HOURS</td>
<td><strong>HONOURS ACTUARIAL</strong> 120 CREDIT HOURS</td>
<td><strong>HONOURS ACTUARIAL</strong> 120 CREDIT HOURS</td>
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<td>ECON 1010, ECON 1020</td>
<td>ACT 2020, ACT 2120, ACT 2210</td>
<td>ACT 3130, ACT 3230, ACT 3630, ACT 3340, ACT 4140, ACT 4630,</td>
<td>ACT 4060, ACT 4340, ACT 4630,</td>
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<td>MATH 1500, MATH 1700, MATH 1300</td>
<td>STAT 2400, STAT 3400</td>
<td>GMGT 2010</td>
<td>STAT 3470, STAT 3490</td>
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<tr>
<td>STAT 1000, STAT 2000</td>
<td>ACC 1100, FIN 2200</td>
<td>STAT 3050, STAT 3800</td>
<td>MSCI 2150</td>
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<tr>
<td>3 credit hour “W” requirement</td>
<td>MATH 2720, MATH 2730</td>
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<tr>
<td>6 credit hours of electives</td>
<td>MATH 2300</td>
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<tr>
<td>30 Hours</td>
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Revisions to Minor (Concentration) in Latin American Studies

A Minor (Concentration) in Latin American Studies consists of at least 18 credit hours from a minimum of two different departments chosen from the following list.

**Anthropology**
ANTH 2690 Peoples and Cultures of Contemporary Latin America 3
ANTH 2990 Prehispanic Cultures of Mexico 3

**Economics**
ECON 3390 Development Economics 6
ECON 3392 An Introduction to Development Economics 3
ECON 3394 Development Economics: Problems and Policies 3

**History**
HIST 2140 Colonial Latin America (A) 3
HIST 2150 Independent Latin America (A) 3
HIST 3020 South America Since 1945 (A) 3

**Spanish**
SPAN 2200 Spanish American Culture and Civilization 3
SPAN 2210 Voices and Images of Latin America 3
SPAN 2540 Spanish-American Literature 2 3
SPAN 3080 Contemporary Latin American Novel 3
Appendix III – Examples of Modifications to Program Descriptions/Charts

Electrical Engineering Courses Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 2430</td>
<td>Ecology, Technology and Society</td>
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<tr>
<td>CHEM 1300</td>
<td>Structure and Modelling of Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 4050</td>
<td>Engineering Economics</td>
<td>3</td>
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<tr>
<td>COMP 1012</td>
<td>Computer Programming for Scientists and Engineers</td>
<td>3</td>
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<tr>
<td>ENG 1430</td>
<td>Design in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENG 1440</td>
<td>Introduction to Statics</td>
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<tr>
<td>ENG 1450</td>
<td>Introduction to Electrical and Computer Engineering</td>
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</tr>
<tr>
<td>ENG 1460</td>
<td>Introduction to Thermal Sciences</td>
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<tr>
<td>ENG 2010</td>
<td>Technical Communications</td>
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<tr>
<td>ENG 2030</td>
<td>Engineering Communication: Strategies for the Profession</td>
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<tr>
<td>ENG 2040</td>
<td>Engineering Communication: Strategies, Practice, and Design</td>
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<tr>
<td>ENGL 1400</td>
<td>Thematic Approaches to the Study of Literature (or equivalent)</td>
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<tr>
<td>MATH 1210</td>
<td>Techniques of Classical and Linear Algebra</td>
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</tr>
<tr>
<td>MATH 1510</td>
<td>Applied Calculus 1 (or equivalent)</td>
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</tr>
<tr>
<td>MATH 1710</td>
<td>Applied Calculus 2 (or equivalent)</td>
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</tr>
<tr>
<td>MATH 2130</td>
<td>Engineering Mathematical Analysis</td>
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<tr>
<td>MATH 2132</td>
<td>Engineering Mathematical Analysis 2</td>
<td>3</td>
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<tr>
<td>MATH 3132</td>
<td>Engineering Mathematical Analysis 3</td>
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<tr>
<td>PHIL 1290</td>
<td>Critical Thinking**</td>
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<td>PHYS 1050</td>
<td>Physics 1: Mechanics</td>
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<td>PHYS 2152</td>
<td>Modern Physics for Engineers</td>
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<td>STAT 2220</td>
<td>Introduction to Probability and Statistics</td>
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<td>ECE 2160</td>
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<td>ECE 2220</td>
<td>Digital Logic Systems</td>
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<td>ECE 2240</td>
<td>Numerical Methods for Electrical Engineers</td>
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<td>ECE 2262</td>
<td>Electric Circuits</td>
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<td>ECE 3540</td>
<td>Advanced Circuit Analysis and Design</td>
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<tr>
<td>ECE 3580</td>
<td>Foundations of Electromagnetics</td>
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<tr>
<td>ECE 3590</td>
<td>Electromagnetic Theory</td>
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<td>ECE 3610</td>
<td>Microprocessor Systems</td>
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<td>ECE 3670</td>
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<td>ECE 3720</td>
<td>Electric Power and Machines</td>
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<tr>
<td>ECE 3730</td>
<td>Principles of Embedded Systems Design</td>
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<td>ECE 3780</td>
<td>Signal Processing 1</td>
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<td>ECE 4150</td>
<td>Control Systems</td>
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<td>ECE 4260</td>
<td>Communication Systems</td>
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<tr>
<td>ECE 4600</td>
<td>Group Design Project</td>
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</table>

Plus 1 Complementary Studies Elective.
Plus 1 Natural Science from the approved list of electives.
Plus 7 Technical Electives from the approved list.

** PHIL 1290 Critical Thinking is the recommended complementary studies elective. However, students may select any course from the Faculty of Arts or the Faculty of Management at the 1000 level or above, with the exception of ARTS 1110 Introduction to the University which may not be held for credit within the Faculty of Engineering.
Electrical Engineering: Standard Program Electrical Electives

Program Requirements:
In the standard Electrical Engineering program, seven Technical Elective Courses are required. At least 4 must be taken from the Group A list shown below. The remainder can be either from the below Group A or B lists.

GROUP A TECHNICAL ELECTIVE COURSES: (4 required)
ECE 3660 Electric Machines
ECE 4100 Microelectronic Fabrication
ECE 4140 Power Transmission Lines
ECE 4160 Control Engineering
ECE 4180 Introduction to Robotics
ECE 4200 Electric Filter Design
ECE 4250 Digital Communications
ECE 4270 Antennas
ECE 4280 Engineering Electromagnetics
ECE 4290 Microwave Engineering
ECE 4300 Electrical Energy Systems 1
ECE 4310 Electrical Energy Systems 2
ECE 4360 High Voltage Engineering
ECE 4370 Power Electronics
ECE 4390 Engineering Computations 3E
ECE 4420 Digital Control
ECE 4580 Optoelectronics
ECE 4610 Biomedical Engineering and Instrumentation
ECE 4830 Signal Processing 2
ECE 4860 Biomedical Optics
ECE 4860 Design of RF Devices and Wireless Systems

GROUP B TECHNICAL ELECTIVE COURSES:
ECE 3700 Telecom Networking
ECE 3760 Digital System Design 1
ECE 3770 Digital System Design 2
ECE 4240 Microprocessor Interfacing
ECE 4440 Computer Vision
ECE 4520 Simulation & Modelling
ECE 4530 Parallel Processing
ECE 4540 Wireless Networks
ECE 4740 Digital System Implementation
ECE 4850 Performance Evaluation for Communications & Computer Eng.
ECE 4860 Materials Characterization
COMP 2140 Data Structures and Algorithms
COMP 3190 Intro. Artificial Intelligence
COMP 4180 Intelligent Mobile Robotics
COMP 4380 Machine Learning
MATH 3120 Applied Discrete Mathematics
MATH 3700 Applied Complex Analysis
MATH 3340 Complex Analysis 1
MATH 3810 Partial Differential Equations 1
MATH 3460 Partial Differential Equations
PHYS 3280 Optics
PHYS 3220 Medical Physics and Physiological Measurement
PHYS 3640 Electro- and Magnetodynamics and Special Relativity
PHYS 4590 Advanced Optics