Natural Sciences Program
Science 502 Guidelines

The following procedures have been established for this course.

This is a 6-credit special topics course, typically done over two consecutive terms (typically Fall and Winter terms). On occasion it can be done in one term - only if the project lends itself to it, and the Supervisor(s) and student can commit to the additional time-commitment required to complete it within one term. The timelines listed in this document presume the SCIE 502 course will be completed in Fall and Winter terms. However, it can also be completed partially or fully in the spring or summer terms, but this requires careful planning and notification of all parties involved.

Time commitment
9 hours per week (on average) When completed in Fall/Winter, September will primarily involve reading the literature and writing your literature review. Active research should commence no later than mid- to late-October. It is common for research experiments to continue over the December holiday break, particularly as the exam period in December often precludes the carrying out of much research. Depending on the project, active research should be slowing down by late February or March, at which point your primary focus should be the writing up of the final report.

This is an Independent Study Project course so there are no regularly scheduled classes. Students are expected to schedule the required amount of time to complete the course into their schedule. Regularly scheduled classes have precedence over any out-of-class activity, therefore it is the responsibility of each student to coordinate their research work around their scheduled classes.

Getting a Supervisor
It is the responsibility of the student to decide on a project topic idea for this course and to approach a suitable faculty member regarding supervision. The supervisor must agree to take on the supervisory role in advance of initiating enrolment into the course.

Have a project idea but unsure who to approach as possible Supervisor?
Students who have a project in mind but are unsure which faculty members would be potential supervisors should approach the Program Director for advice.

Meeting with potential Supervisor:

1. Bring a current unofficial copy of your transcript.
2. Be sure to ask about and/or discuss with your potential Supervisor, the following:
   - Options for research projects, including objectives and methodology
   - Preparing your research abstract (required for registration)
   - Research timelines and milestones
   - SCIE 502 committee requirements (supervisor, committee member, NTSC representative)
   - Course evaluation criteria

Selection of Committee Member
After consultation with your supervisor, select: (1) an additional faculty member to serve on your supervisory committee and ask that person if he or she would be willing to act in that capacity. This individual should have research interests that are related to your project and will be available to provide advice to you over the course of your project and (2) a NTSC faculty member (if your supervisor is not affiliated with the NTSC program) to act as a
representative. The NTSC faculty member will read all submitted documents and will attend the midterm progress meeting and final oral presentation.

**Literature Review/Proposal – due in November**

A 10-page (typed, double-spaced) summary of published literature and the relevant research carried out on your topic of interest, as well as a section concerning your goals and how these relate to past work, due by an agreed-upon date in the first term – usually in November.

**Research Progress Meeting – to be held in December**

In December, a meeting must be held between you, your supervisor, your committee member and the NTSC representative (if different than your supervisor) to assess your progress during the first semester. A brief progress report must be given in the form of a 15-20 minute presentation. This should include: the objectives of your project and description of what you have done and observed to date, and a brief description of the work you plan to carry out in the remaining months. Be prepared to discuss your work with your committee members. You will be assessed on: your level of industry, presentation of the science, ability to effectively communicate your results, the quality of the results obtained thus far, and discussion of interdisciplinary component of your project.

**Laboratory Notebook – to be submitted at the end of the course**

Keep detailed notes in a separate notebook about all aspects of the ongoing project. This notebook will be intermittently examined by the supervisor to ensure that adequate and appropriate research progress has been made. Due at the end of the course, the notebook will be evaluated as a means by which to assess the student’s participation.

**Final Oral Presentation – due at the end of course**

The oral presentation must be made prior to the final day of the Winter Session Final Examinations period at a time convenient for you and the members of your committee. It is critical that the date for your oral presentation be decided as early as possible (see your supervisor for timing).

The 15 minute presentation will be followed by a discussion period not to exceed 45 minutes, during which time the supervisory committee can ask about the project.

Students will be evaluated on the following:

(i) Organization of material  
(ii) Clarity of the presentation  
(iii) Quality of slides, transparencies or other aids  
(iv) Conclusions  
(v) Handling of questions and discussion

**Final Written Report – due at the end of course**

A written report should be submitted to your supervisor, the NTSC representative (if different than your supervisor), and the other member of your committee by the last day of classes in the Winter session. The report must be in typed form (double spaced and appropriately indented) and all figures and tables must be clearly and carefully drafted. The original copy of your report as well as all photocopies should be bound (soft cover coil type binding would be adequate). Your supervisor will keep the original copy of your report.

The report should be written in the style of a paper for a scientific journal in the appropriate discipline, but perhaps be somewhat more detailed. Your supervisor will provide details about the appropriate format you should follow. The evaluation will be based on the following;
Research Work
Whenever you are carrying out laboratory research work, be sure that someone else is present in your lab or in a nearby lab, in case of emergency or accident. You should discuss proper health and safety protocols for all aspects of your research with your supervisor.

Course Evaluation
The student and supervisor should discuss and agree to the course evaluation criteria (since each SCIE 502 research project is unique) as well as the relative weighting for those same criteria.

The evaluation criteria and weightings listed below are typical and can be considered a starting point for discussion.

| Written literature review/proposal (November) | 25% |
| Research progress meeting presentation (December) | 10% |
| Laboratory Notebook | 10% |
| Final written report | 40% |
| Final oral presentation | 15% |

100%

Grading Scale

<table>
<thead>
<tr>
<th>Grading Scale</th>
<th>A+</th>
<th>A-</th>
<th>B+</th>
<th>B-</th>
<th>C+</th>
<th>C-</th>
<th>D+</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td></td>
<td>88</td>
<td>76</td>
<td>72</td>
<td>68</td>
<td>60</td>
<td>55</td>
<td>&lt;50</td>
</tr>
<tr>
<td>A</td>
<td>&gt;92%</td>
<td>91.5%</td>
<td>83.5%</td>
<td>79.5%</td>
<td>71.5%</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>A-</td>
<td>84</td>
<td>87.5%</td>
<td>75.5%</td>
<td>72</td>
<td>64</td>
<td>60</td>
<td>55</td>
<td>&lt;50</td>
</tr>
<tr>
<td>A</td>
<td>84</td>
<td>76</td>
<td>79.5%</td>
<td>72</td>
<td>68</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>A+</td>
<td>&gt;92%</td>
<td>91.5%</td>
<td>83.5%</td>
<td>80</td>
<td>71.5%</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>A</td>
<td>84</td>
<td>87.5%</td>
<td>75.5%</td>
<td>72</td>
<td>68</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>A-</td>
<td>84</td>
<td>76</td>
<td>79.5%</td>
<td>72</td>
<td>68</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>A</td>
<td>84</td>
<td>87.5%</td>
<td>75.5%</td>
<td>72</td>
<td>68</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>A-</td>
<td>84</td>
<td>76</td>
<td>79.5%</td>
<td>72</td>
<td>68</td>
<td>67.5%</td>
<td>59.5%</td>
<td>54.5%</td>
</tr>
</tbody>
</table>

REGISTRATION IN SCIE 502

Once the prospective Supervisor has indicated their willingness to supervise you on your project

Complete the webform (https://science.ucalgary.ca/usc-independent-research-course-application) - NO LATER than 10 working days before the add/swap deadline in the term (https://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html).

Note: an abstract is required for SCIE 502. The abstract should be no more than 200 words in length and should be entered into the Project Description section of the webform.

- If approval is denied at this point, you will be notified by e-mail.
- If approval is granted, staff in the USC will enrol you into the course and you will be notified by email.