

## COURSE SYLLABUS

|                        |   |                      |               |
|------------------------|---|----------------------|---------------|
| <b>COURSE TITLE:</b>   | BIOL 479.3 Literature Research in Biology |                      |               |
| <b>COURSE CODE:</b>    | To be determined                          | <b>TERM:</b>         | Fall, 2017    |
| <b>COURSE CREDITS:</b> | 3 credit units                            | <b>DELIVERY:</b>     | 5P            |
| <b>CLASS SECTION:</b>  | 01  | <b>START DATE:</b>   | Start of term |
| <b>CLASS LOCATION:</b> | tbd                                       | <b>END DATE:</b>     | End of term   |
| <b>CLASSTIME:</b>      | tbd                                       | <b>LAB LOCATION:</b> | tbd           |

### Course Description

The course is designed to provide students with experience in researching and interpreting primary research in biology. Students will study a research question with a faculty supervisor, primarily through a research literature review. A written report and an oral presentation are required.

**Prerequisites:** BIOL 301 and 18 cu of additional senior BIOL courses or course considered to be equivalent to BIOL (at least 3 cu of these must be at the 300 or 400 level), and permission of the Department.

**Note:** Students are required to obtain a faculty supervisor prior to registration in this course.

### Learning Outcomes

By the completion of this course, students will be expected to:

1. be able to locate and critically review the primary research literature in their area of study
2. have improved their scientific writing and oral presentation skills
3. demonstrate the ability to write for non-specialist audiences
4. work independently and manage their time appropriately

**Note:** The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at: [http://www.usask.ca/university\\_secretary/LearningCharter.pdf](http://www.usask.ca/university_secretary/LearningCharter.pdf).

## Course Overview

The course consists of 5 hours of organized and independent study per week for a total of 13 weeks. During this time, the student will be introduced to literature research in a discipline of Biology. The student(s) will explore a topic agreed upon by the student and the supervisor. The primary activity of the student will be to use University Library resources to conduct a review of the primary scientific literature relevant to the topic under study. In addition to spending time on the literature review and writing, the student is expected to meet with the faculty supervisor regularly (ideally, on a weekly basis) to specifically discuss their progress towards meeting the course objectives, and to receive feedback on their writing. The final course component will consist of an oral presentation by the student. This presentation will summarize the literature review and relate findings from their research. Other students or individuals from the Department of Biology may be invited to the final presentation as appropriate.

## Class Schedule

The exact schedule will depend on the nature of the practical work undertaken during the course. Students should plan to spend five hours per week on independent and directed study and meeting with the faculty supervisor. During the first week of the course, the faculty supervisor will submit a brief description of the research project to the Head of the Department of Biology for approval (see Appendix I).

## Instructor

Regular, Associate and Adjunct Faculty in the Department of Biology, will supervise the students in this course.

## Required Resources

Access to the University Library and Arts & Science Computer Account is needed.

## Grading Scheme

|                                    |      |
|------------------------------------|------|
| Short Summary of Research Area     | 20%  |
| Practical Research Performance     | 20%  |
| Initial Draft of Literature Review | 10%  |
| Research Literature Review         | 30%  |
| Oral Presentation                  | 20%  |
|                                    |      |
| Total                              | 100% |

## Evaluation of Student Performance

### Midterm Practical Research Performance

**Value:** 10% of final course grade

**Date:** assessed two weeks prior to the last day to formally withdraw from the term

**Description:** this will be an assessment of the student's ability to learn and perform the work directed by the research supervisor, including an assessment of the student's ability to plan and organize their work schedule. This midterm assessment should be discussed in the weekly meeting between the faculty supervisor and the student that occurs two weeks prior to the last day to formally withdraw from course. Any deficiencies in student performance, especially those that result in a failing grade for this component, should be specifically discussed and a remediation plan agreed upon by the faculty supervisor and student. The elements of this plan should be documented, and signed by the supervisor and the student.

### Final Practical Research Performance

**Value:** 10% of final course grade

**Date:** assessed prior to the end of the term

**Description:** this assessment will be based on the student's performance on aspects performed subsequent to the Midterm Practical Assessment, and should take into account any special remediation plan agreed upon during the Midterm Assessment.

### Summary of Research Area For Non-Specialists

**Value:** 20% of final course grade

**Due Date:** two weeks prior to the last day to formally withdraw from the term

**Description:** the student will provide a short (<5 page) summary of the research area, written for non-experts. The specific form will be agreed upon by the student and the supervisor, but could take a variety of forms including, but not limited to, an article for a trade publication, news article for the public, webpage or blog post. It is expected that the student will provide an outline and initial draft, worth 5% of the 20% total, for formative feedback from the supervisor at least two weeks before the due date. The final draft will be worth 15% of the final course grade.

### Initial Draft of the Literature Research Review

**Value:** 10% of final course grade

**Due Date:** at least two weeks before the final research review due date

**Description:** the student will provide an initial draft of their research review for formative feedback from the supervisor. The exact format of this written review will depend to some extent on the discipline, but it is anticipated that the student will incorporate current published literature into the review paper, and specifically highlight the current state of the field and future research directions. The supervisor will provide feedback and suggestion for improving the final draft.

### Literature Research Review

**Value:** 30% of final course grade

**Due Date:** last week of the term (i.e., prior to the start of the final exam period).

**Description:** the student will research the primary peer-reviewed literature relevant to the project under study and prepare a substantive written review of this literature. The exact format of this written review will depend to some extent on the discipline, but it is anticipated that the

student will incorporate current published literature into the review paper, and specifically highlight the current state of the field and future research directions. The written review will be provided to the faculty supervisor no later than the last weekly meeting and will be evaluated taking into account any suggestions made on the initial draft.

### **Oral Presentation**

**Value:** 20% of final grade

**Date:** scheduled during the last week of the term

**Format:** 30 minute presentation with appropriate visual aids.

**Description:** the student will present a short seminar on the topic of their literature research paper. This presentation will be advertised within the Department of Biology and the student can expect an audience that includes a variety of individuals from the Department. An example rubric that could be used for the assessment of this presentation is attached in Appendix II.

## **Providing Feedback to Students**

It is important that the student be provided with adequate feedback about their performance as the course progresses, and that an opportunity is provided for them to rectify serious deficiencies. The weekly meetings between the student and faculty supervisor are an important aspect of this assessment and feedback. These meetings should be used to discuss the student's progress in the literature search, discuss their findings, and as an opportunity to ensure consistent progress is being made towards an appropriate level of understanding of the scientific literature. It is intended that this feedback occur through verbal discussions, with the expectation that students will learn and grow through this feedback. Serious concerns about student performance that are raised as part of the Midterm Practical Research Performance assessment should be documented as described above.

## **Late Assignments/Missed Deadlines/Attendance**

### **Expectations**

Students are expected to plan and execute their work schedule and to perform these as they have agreed to do so. Missing this work or deadlines will be negatively reflected in their Practical Research Performance grades. Faculty will accept and grade the final literature review when are submitted (i.e., after the last weekly meeting of the student and faculty supervisor). However, failure to submit these course requirements will incur a penalty equivalent to a 5% deduction from the assigned grade for every day that the work is overdue. Work that is overdue by more than seven days will be assigned a grade of o.

A student who misses the Oral Presentation will be assigned a grade of o for that component of the course.

The course instructor is sensitive to situations beyond a student's control that affect their ability to complete assigned work in a timely fashion. Circumstances arise that may require your absence. In the case of illness or other personal situations, please inform the course instructor of

your circumstances within 72 hours of your first absence or missed deadline. Permission to defer the submission of assigned work must be obtained from the course instructor. Requests for extensions exceeding one week beyond the scheduled date for submission will require a written explanation: all other requests will be dealt with informally by the course instructor.

## **Criteria That Must Be Met to Pass**

Students must provide their faculty supervisor with their final report at the end of the course. Failure to do so will result in a final course grade of 49%, or lower depending on their performance in other aspects of the course, along with a grade comment of INF (Incomplete Fail).

## **Integrity Defined (from the Office of the University Secretary)**

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct - ([http://www.usask.ca/university\\_secretary/honesty/StudentAcademicMisconduct.pdf](http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf)) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals - ([http://www.usask.ca/university\\_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf](http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf)).

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: [http://www.usask.ca/university\\_secretary/pdf/dishonesty\\_info\\_sheet.pdf](http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf).

## Grading System

A percentage system for reporting final grades was implemented by the University of Saskatchewan in September, 1986. The university-wide relationship between literal descriptors and percentage scores for undergraduate courses is as follows:

|   |  |
|---|--|
| <p><b>90-100</b><br/><b>Exceptional</b></p> | <p>A superior performance with consistent strong evidence of</p> <ul style="list-style-type: none"> <li>• a comprehensive, incisive grasp of the subject matter;</li> <li>• an ability to make insightful critical evaluation of the material given;</li> <li>• an exceptional capacity for original, creative and/or logical thinking;</li> <li>• an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.</li> </ul>   |
| <p><b>80-90</b><br/><b>Excellent</b></p>    | <p>An excellent performance with strong evidence of</p> <ul style="list-style-type: none"> <li>• a comprehensive grasp of the subject matter;</li> <li>• an ability to make sound critical evaluation of the material given;</li> <li>• a very good capacity for original, creative and/or logical thinking;</li> <li>• an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.</li> </ul>  |
| <p><b>70-79</b><br/><b>Good</b></p>         | <p>A good performance with evidence of</p> <ul style="list-style-type: none"> <li>• a substantial knowledge of the subject matter;</li> <li>• a good understanding of the relevant issues and a good familiarity with the relevant literature and techniques;</li> <li>• some capacity for original, creative and/or logical thinking;</li> <li>• a good ability to organize, to analyze and to examine the subject material in a critical and constructive manner.</li> </ul>   |
| <p><b>60-69</b><br/><b>Satisfactory</b></p> | <p>A generally satisfactory and intellectually adequate performance with evidence of</p> <ul style="list-style-type: none"> <li>• an acceptable basic grasp of the subject material;</li> <li>• a fair understanding of the relevant issues;</li> <li>• a general familiarity with the relevant literature and techniques;</li> <li>• an ability to develop solutions to moderately difficult problems related to the subject material;</li> <li>• a moderate ability to examine the material in a critical and analytical manner.</li> </ul>        |
| <p><b>50-59</b><br/><b>Minimal Pass</b></p> | <p>A barely acceptable performance with evidence of</p> <ul style="list-style-type: none"> <li>• a familiarity with the subject material;</li> <li>• some evidence that analytical skills have been developed;</li> <li>• some understanding of relevant issues;</li> <li>• some familiarity with the relevant literature and techniques;</li> <li>• attempts to solve moderately difficult problems related to the subject material and to examine the material in a critical and analytical manner which are only partially successful.</li> </ul> |
| <p><b>&lt;50</b><br/><b>Failure</b></p>     | <p>An unacceptable performance</p>   |

## **Accommodations Through Disability Services for Students (DSS)**

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check <http://www.students.usask.ca/disability/> or contact DSS at 966-7273 or [dss@usask.ca](mailto:dss@usask.ca).

Students who are in need of accommodation for certain aspects of this course must present the appropriate letter from DSS to their faculty supervisor, and engage in a discussion with the faculty supervisor as to the nature of the accommodation needed. Where appropriate, the faculty supervisor may seek advice about the accommodation from the experts at DSS.

## **Student Supports**

The statements below meet the requirements for the inclusion of this information on the syllabus in Arts & Science. You may add to this information if you wish, but do not remove any information.

## **Student Learning Services**

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site <https://www.usask.ca/ulc/>.

## **Student and Enrolment Services Division**

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the SESD web site <http://www.usask.ca/sesd/>.

## **College Supports**

Students in Arts & Science are encouraged to contact the Undergraduate Student Office and/or the Trish Monture Centre for Success with any questions on how to choose a major; understand program requirements; choose courses; develop strategies to improve grades; understand university policies and procedures; overcome personal barriers; initiate pre-career inquiries; and identify career planning resources. Contact information is available at: [\(http://artsandscience.usask.ca/undergraduate/advising/\)](http://artsandscience.usask.ca/undergraduate/advising/).

**APPENDIX I**  
**BIOLOGY 479.3**  
**Literature Research Proposal Form**

**Student's name:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Student number:** \_\_\_\_\_ **NSID:** \_\_\_\_\_

**Proposed Supervisor:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Course & CRN#:** \_\_\_\_\_ **Term:** \_\_\_\_\_

**Proposed Project Title:**

**Project Outline:** Please provide a brief outline of the proposed research project. Include any relevant methodology and explain what the student will learn over the course of the project (attach additional pages if necessary).

Please indicate when grades will be assigned. Will anyone other than the proposed supervisor be providing any assessment?

**A copy of the final literature review is to be provided to the Department. The original Research Notebook may be retained by the Course Supervisor depending on intellectual property requirements.**

Approved: \_\_\_\_\_  
(Department Head)

Date: \_\_\_\_\_



## Appendix II. Biology 479 Presentation Evaluation Form

Presenter: \_\_\_\_\_

| Category  | Grade       |
|---|-------------|
| Was the background information adequately covered?  | /20         |
| Did the presenter summarize the methods and results at a level you could understand?  | /10         |
| Did the speaker effectively explain the significance and major findings of their research?  | /10         |
| Did the presenter help you to understand or learn the concepts, theories, or terms applicable to their research? Did the presenter answer questions adequately?   | /20         |
| <u>Verbal expression/Projection/Mannerisms:</u><br>Was the presenter confident and engaging? Were mannerisms negative or positive?<br>Was word choice precise?<br>Did the presenter use Uh, Um etc., use slang, or stand too stiffly or pace excessively?<br>Was there eye contact or did they stare at notes/screen? | /15         |
| <u>Visual/technical aids:</u><br>Was the presentation well organized?<br>Were there errors in slides or too many words used?<br>Were the aids helpful or too distracting?<br>Was the font size appropriate?   | /15         |
| <u>Overall impression:</u><br>Stimulating; prepared; clear; incorporated sources throughout. Did the presenter use their allotted time effectively (i.e. too short? too long?)  | /10         |
| <b>TOTAL:</b>   | <b>/100</b> |

**General comments and/or constructive criticisms:**

(continue on back as needed)