

BROCK UNIVERSITY
Department of Biological Sciences

GUIDELINES FOR HONOURS THESIS PROJECTS
OENOLOGY & VITICULTURE 4F90/4F91

(Revised October 2024)

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PART ONE

1. ADMISSION OF STUDENTS TO OEVI 4F90/4F91
 - (a) All students registering for OEVI 4F90 must also register for OEVI 4F91 at the same time.
 - (b) Note that the OEVI 4F90/4F91 program is administered by the Department of Biological Sciences, through a unique OEVI 4F90/4F91 Program Coordinator. Admission of students to the 4F90/4F91 program will normally require completion of 14.0 credits and a major average of 75% or greater. Students must first apply to Fourth Year by filling out the Year Four application (<https://brocku.ca/registrar/wp-content/uploads/sites/45/ApptoYear4Studies.pdf>) and will be notified by the Department if they are eligible to the program. The Department of Biological Sciences (hereinafter referred to as “the Department”) will attempt to accommodate all students who wish to enroll in the OEVI 4F90/4F91 program provided they meet the criteria above.
 - (c) Year IV students who do not meet this standard may be admitted to the program at the discretion of the Program Coordinator and the supervising faculty member (i.e. supervisor), to the extent that space and facilities permit.

- (d) Every faculty member has the right to refuse supervision of a specific student. However, this will be exercised only under extraordinary circumstances and must have some defensible basis. The Chair of the Department, in consultation with the Program Coordinator, will judge the defensibility of such refusals.
- (e) A 4F90/4F91 student shall not normally be paid by the supervisor while enrolled in the course (see Dept. Minutes May 10, 1983).
- (f) Faculty on sabbatical leave will not normally supervise OEVI 4F90/91 students.

2. RESPONSIBILITIES OF THE SUPERVISOR AND COMMITTEES

The thesis program has been instituted primarily to provide Honours students with significant experience in the investigative process. Although it is undesirable to legislate formal regulations regarding the responsibilities of supervisors and committees vis-a-vis students, some guidelines are appropriate.

Supervisor:

- (a) Thesis projects should be illustrative of the entire research process, from the formulation of hypotheses through to the decision-making steps, analysis and the communication of results. They should be real problems and not primarily isolated aspects, or technical problems associated with the supervisor's personal research program.
- (b) BSc projects are not the equivalent of MSc studies, and their principal goal is not the publication of a research paper. Consistent with the aim of the OEVI 4F90/4F91 program, they should be well defined and relatively limited in scope. Open-ended projects should not be encouraged, and every effort should be made to avoid studies which are unlikely to yield results within the time period available.
- (c) Since Thesis students cannot ordinarily be expected to have the background knowledge necessary to formulate a research hypothesis and then to design the studies necessary to test it, supervisors should work closely with their students in this phase of the study, and also assist in the development of analytical, observational and related procedures. Previous experience suggests that most students have difficulty in setting up realistic experimental schedules. Supervisors should help with this and ensure that such schedules are followed. Regular (i.e. weekly) meetings between student and supervisor are advised. Since most students require assistance in the organization of their reports, a schedule has been defined which provides time for the Student to prepare and submit more than one thesis draft. Supervisors should ensure that the drafts are of reasonable quality with respect to style, organization, etc., before submission to Committee members.
- (d) A most important part of the learning experience of these courses is data analysis, interpretation of results and integration of these into the current scientific thought. Since this is the ultimate reason for doing research, it is very important that students be guided through this process by the Supervisor and shown how this is accomplished.
- (e) The duties of the Supervisor cease with the final submission of the thesis, when he or she reverts to membership on the examining committee.

N.B.

When OEVI 4F90/4F91 is taken during any 8-month period, no thesis investigation will normally be initiated before commencement of the 8 month term. Students may carry out projects in the laboratories of faculty members for whom they have worked as summer research assistants but may not use, for a thesis, any data or material obtained directly from such an appointment. Moreover, no Year II or Year III student may be hired as a

research assistant with the understanding that he or she is then obligated to carry out a thesis project under the supervision of the faculty member concerned.

Committees:

Each student registered for the thesis program will be assigned one committee that will act as both an advisory committee and an examination committee.

- (a) Committee: The OEVI Program coordinator and Supervisor, will strike a Committee for each student. This will consist of the Supervisor of the project and one other faculty member of the Department (“the Advisor”) preferably with some knowledge of the area in which the project is to be conducted. The faculty member that is not the project supervisor will act as chair of the committee. If students have two faculty members that are co-supervising their project, the committee will consist of both supervisors along with the additional faculty member. The Committee as such, or as individuals, should be available for consultation throughout the project. This arrangement will not preclude the Student’s seeking advice from other faculty members. The Committee will hear the first and second seminars of each student and mark the progress seminar and report as outlined in Section 4, will assist in problem organization, data evaluation, and will mark the final thesis, final seminar and final defense as outlined in Section 4. The Chair of the committee will be in charge of the final thesis presentation and defense. Following the defence both committee members will return the final grade forms to the OEVI Course coordinator.

3. STARTING DATES

BIOL/OEVI 4F90 and BIOL/OEVI 4F91 may be started in fall (September to April cohort), winter (January to August cohort) or spring (May to December cohort). The same regulations apply whether a student starts in the fall, winter or spring with the exceptions of deadline dates. Deadline dates for all three cohorts are listed in section 4.

4. SCHEDULE AND DEADLINES

Schedule:

- (a) Each member of the Department with expertise in the field (including Adjunct Faculty) is expected to participate in the OEVI 4F90/91 program. It is recommended that faculty members update the OEVI Program coordinator and the OEVI academic advisor on their current research areas so that they can suggest potential supervisors for interested Fourth Year students.

Faculty members or Researchers with a PhD outside the Department who are recognized as CCOVI Fellows or CCOVI Professional Affiliates are permitted to supervise OEVI 4F90/4F91 students, provided that the projects being proposed are scientific in nature and fit the criteria indicated in 2(f) above—i.e., that they contain sufficient rigor and scientific content. These topics must be deemed acceptable by the OEVI Program Committee before the student can begin work.

Each student participating in the program will be required to make his/her arrangements with a supervisor, and to register these with the OEVI Program Coordinator no later than one week following the commencement of the term in which OEVI 4F90/91 is started.

Two faculty members may co-supervise a 4F90/91 project if so desired.

- (b) Each student will be required to present three seminars during the course:
- (i) The initial planning seminar will be scheduled during the first month of the term that 4F90/91 commences. These seminars should deal largely with the nature of the problem and the

proposed design of the study. The principal goal will be to provide for a committee input with respect to the final organization of the study. A 1 to 2 page written outline should be provided to the committee at the start of the seminar. This planning seminar presentation will be no longer than 15 minutes and will be followed by a 5 to 10 minute discussion period. No grade is given for this seminar.

- (ii) The progress seminar will be scheduled after submission of the written progress report at the start of the second 4 month term (see Section 4, Deadlines for dates and Section 5 for content). The seminar should focus on research progress to date including data collected and any data analysis. Background and introductory material should also be included to restate the purpose of the research, objectives and hypotheses. The seminar should not exceed 20 minutes in length followed by a question and discussion period. The committee may then make recommendations as to possible further experiments, data analysis, etc. The written progress report and seminar are graded, and each committee member will return progress report forms to the OEVI Course coordinator following the seminar
 - (iii) The final seminar will be scheduled within a two-week period after final submission of the thesis (see section 4, Deadlines for due dates and Section 5 for content). The Student will be expected to outline the problem, its background, the design of the study and results obtained and discuss the conclusions. The seminar should not exceed 40 minutes in length. A defense of the thesis will follow in closed session with the Examining Committee. The total session should not exceed 1.5 hours.
- (c) Each student will prepare two written reports during the course:
- (i) The progress report (as a MS Word document) will be emailed to the OEVI Course Coordinator at the end of the first term. See section 4, Deadlines for due dates and section 5 for content requirements. The progress report is limited to 15 pages in length.
 - (ii) A defence-ready thesis as a MS Word document) will be emailed to the OEVI Course Coordinator at the end of the second term. See section 4, Deadlines for due dates and section 5 for content requirements. The final thesis is normally expected to be limited to 50 pages in length.

5. DEADLINES

6.

- (a) Under no circumstances should theses be submitted for examination without prior submission of draft(s) to the Supervisor.
- (b) Submission of the first draft to the Supervisor will be at least three weeks before the final submission date. This should allow sufficient time for revisions and final typing.
- (c) Due Dates*
 - (i) September – April cohort
 - Planning seminar: Prior to September 30
 - Progress Report: December 20 by 5 pm, emailed to the OEVI Course Coordinator
 - Progress Seminar: Friday of the first week of January
 - Final Thesis: April 1 by 5 pm, emailed to the OEVI Course Coordinator
 - Final Seminar and Defense: Scheduled day prior to April 14
 - Submission of Final Thesis: No later than one week after the final date of scheduled exams.

- (ii) January – August cohort
 - Planning seminar: Prior to January 31
 - Progress Report: April 20 by 5 pm, emailed to the OEVI Course Coordinator
 - Progress Seminar: Friday of the first week of May
 - Final Thesis: August 1 by 5 pm, emailed to the OEVI Course Coordinator
 - Final Seminar and Defense: Scheduled day prior to August 14
 - Submission of Final Thesis: No later than one week after the final date of scheduled exams.

- (iii) May – December cohort
 - Planning seminar: Prior to May 31
 - Progress Report: August 20 by 5 pm, emailed to the OEVI Course Coordinator
 - Progress Seminar: Friday of the first week of September
 - Final Thesis: December 1 by 5 pm, emailed to the OEVI Course Coordinator
 - Final Seminar and Defense: Scheduled day prior to December 14
 - Submission of Final Thesis: No later than one week after the final date of scheduled exams.

- (d) For all cohorts, submissions to the OEVI Course coordinator will occur prior to 5 p.m. on the due date or if a weekend or Holiday, on the following Monday as announced by the OEVI Course Coordinator. Final submission of the thesis will be emailed to the OEVI Course Coordinator. No further revisions will be permitted. This copy is to be graded, as submitted by the Committee. Failure to submit the thesis on the deadline date will carry the penalty of a reduced grade unless, under exceptional circumstances, the Chair of the Department, in consultation with the OEVI Course Coordinator, exercise discretionary powers. There are no predetermined penalties. Penalties are determined by faculty of the Departmental Committee as a whole on an individual, case-by-case basis. The final seminar and oral defense will be scheduled by the Course Coordinator within two weeks of the thesis submission (i.e., between the last day of classes and the start of the examination period).

7. EVALUATION

Progress Report: A progress report worth 15% of the grade for OEVI 4F91 must be emailed to the OEVI 4F90/91 Coordinator as a MS word document by December 20 (for projects started in September), April 20 (for projects started in January) or August 20 (for projects started in May). The report will be distributed to the Committee for grading. If any of these dates should fall on a weekend or Holiday, then the deadline will be the following Monday. The progress report will normally only include an introduction and literature survey along with literature cited. The report is to be written in a concise manner such that a complete literature review is presented in 15 pages. Progress Seminar: After the written report has been submitted, the student will give a seminar reviewing progress to date for their research worth 15% of the grade for OEVI 4F90 (2 weeks following submission; 1st week of Jan for September to April cohort, first week of May for the January to August cohort, first week of September for the May to December cohort). The progress seminar is limited to 20 minutes with a discussion to follow. The total time including seminar and discussion should not normally exceed 1 hour total.

Defence-ready Thesis: The defence-ready thesis must be emailed as a MS Word documents to the OEVI Course Coordinator for examination (see Section 6 and Part 2 for details of thesis format).The electronic copy must be submitted on April 1 (for the September to April cohort), August 1(for the January to August cohort) or December 1 (for the May to December cohort). Both members of the committee (the supervisor and the chair) will grade the thesis for Scientific Merit (50% of OEVI 4F90) and Library Research and Communication (50% of 4F91). These marks will be submitted to the OEVI Course Coordinator before the seminars and defenses.

- (a) Final Seminar presentations: Final seminars of less than 40 minutes in length with a question period thereafter will be held within a two-week period after submission of the thesis. Grades worth 15% of OEVI 4F90 (Scientific merit) and 20% of 4F91 (communication) will be assigned to the seminar.

- (b) Closed oral defenses: The closed oral defenses in which the Student and Examining committee meet for not more than one hour will be held after the seminar presentation. Questioning by committee members will normally pertain to the thesis topic but students should anticipate questions on the theoretical basis and appropriateness of methodology used and also on the broad ramifications and significance of their topic. Grades worth 20% of OEVI 4F90 (Scientific merit) and 15% of 4F91 (Communication) will be assigned to the defense.

Marks assigned to the seminar and the defense are to be submitted to the OEVI Course Coordinator immediately following termination of the final defense of the thesis and prior to any discussion. The marks assigned by individual committee members will have equal weight.

Final Mark Allocation:

	4F90 (Scientific merit)	4F91 (Library research and Communication)
Progress report	0	15%
Progress seminar	15%	0
Thesis	50%	50%
Seminar	15%	20%
Defense	<u>20%</u>	<u>15%</u>
	100%	100%

For purposes of transmission to the Registrar, two final grades will be assigned, one for OEVI 4F90 and one for OEVI 4F91 based on the marking scheme in section 5(e).

- (c) The mark assigned for OEVI 4F90 will reflect the scientific merit of the thesis and should be based on the results, an understanding of those results in the thesis and the defense of the thesis during examination.
The mark assigned for OEVI 4F91 will reflect the communicative abilities of the student and the thoroughness of the library research. This will be based in part on the thesis and in part on the seminar presentation.
- (d) The OEVI Program Coordinator will collate all mark assignments, weigh and calculate the average marks for each subsection and for each of the two courses. In cases of extreme discrepancies in assigned marks, the OEVI Program Coordinator should attempt to arrive at some acceptable consensus.
- (e) All grades, including the individual mark assignments of committee members, must be returned to the OEVI Program Coordinator of the course.
- (f) Final grades will not be transmitted to the Registrar until: (i) a final electronic version of the thesis (as a .pdf file) has been submitted to the Administrative Assistant of the Department and CC-ed to the Program Coordinator (see 5j, below); and (ii) all data have been turned over to the Supervisor.

Disposition of theses: After the thesis has been corrected to the satisfaction of the Supervisor, a final electronic version of the thesis will be prepared by the Student. This must be a single .pdf file. Multiple files will **not** be accepted.

8. THESIS FORMAT

A short thesis outline is available at the end of this document (see Part Two). It is suggested that all theses follow a format similar to the following:

- (a) Title Page
- (b) Acknowledgments
- (c) Abstract
- (d) Introduction and Literature Review (combined or separate sections): concisely outline the problem, the goal of the study and the approach used

- (e) Materials and Methods
- (f) Results
- (g) Discussion
- (h) Summary and Conclusions
- (i) Literature Cited
- (j) Appendices

The final thesis should not be longer than 50 pages. At the discretion of the supervisor, additional data may be included in appendices but will not be marked by the thesis committee.

9. BUDGET AND SUPPLIES

- (a) A budget will be allocated for OEVI 4F90/91 projects by the Chair of the Department of Biological Sciences, provided sufficient funds are available.
- (b) Students will be held accountable and responsible for all equipment and unused supplies, and these are to be returned in clean condition to their supervisor prior to the thesis defense.
- (c) In general, the teaching laboratories will have priority in questions of equipment use.
- (d) If possible, students will be provided with individual locked cupboards for the storage of materials.
- (e) The following items constitute reasonable charges against project budgets: apparatus, glassware, chemicals, mileage costs associated with field studies, laboratory consumables, photographic and drawing supplies used by the Student in thesis preparation, reasonable inter-library loan costs. Costs of thesis typing and photocopying are specifically excluded.

10. KEYS/SWIPE-CARD ACCESS

Laboratory keys will be issued to the Student by the Supervisor. For students requiring swipe-card access to labs, the Supervisor will make the necessary arrangements. Final grades for each Student will not be transmitted to the Registrar until his/her university keys have been returned to the Department and/or Institute (CCOVI). Exceptions will be made for students who continue to work in the same laboratory as graduate students, student assistants, or research assistants.

11. APPEALS

It is recognized that under some circumstances students may wish to appeal a final grade. In such instances, the Chair of the Department will appoint an ad hoc committee to deal with the appeal.

12. GRADUATION

Students intending to graduate at the Spring Convocation must complete an "Application to Graduate" by March 1st. Students intending to graduate at the Fall Convocation must complete an "Application to Graduate" by August 1st. These applications are available in the Office of the Registrar and must be submitted to them by the dates listed above.

13. INTELLECTUAL PROPERTY

All students must be apprised of Brock University's policy on Ownership of Student-created Intellectual Property. Both the Student and his/her Supervisor must complete the Intellectual Property Agreement form and return it to the Office of Research Services.

PART TWO

BROCK UNIVERSITY
Department of Biological Sciences

INSTRUCTIONS FOR THE PREPARATION AND SUBMISSION OF BSc (HONOURS) THESES

A student submitting a BSc (Honours) thesis for degree credit must ultimately submit a single electronic .pdf copy of the approved thesis to the Administrative Assistant of the Department of Biological Sciences AND the OEVI Course Coordinator their before the degree will be conferred. The thesis shall be a report of research work carried out during the candidate's final year. The following regulations are provided for the guidance of students and faculty.

GENERAL INFORMATION

1. **Defence-ready thesis.** The electronic thesis should be formatted as a Word document, with the paper size being Letter Size (21.59 cm x 27.94 cm), except for drawings and maps, on which no restriction is placed. A margin of 2.54 cm on all sides is acceptable. The student should bring their own copy of the thesis to the thesis defense.
2. Faculty approval of the thesis after the thesis defence. When the thesis is approved by the examining committee and corrections are completed (and approved by the Supervisor) the Student must submit a single electronic copy in .pdf form to the supervisor, OEVI 4F90/91 Course coordinator, and Administrative Assistant of the Department of Biological Sciences no later than seven days after the final date of scheduled exams. A copy of the thesis must also be submitted on disk. This electronic file must be corrected of any errors noted by the examiners and must contain all charts, maps, figures, tables, and appendices as finally approved. Any student that does not submit the final electronic version on time will receive an "Incomplete" grade for 4F90 and 4F91. Students will also be required to return all keys that were signed out and provide all data to the Supervisor. Grades will not be submitted to the Office of the Registrar until the final electronic version of the thesis have been submitted, until all keys have been returned and until all data have been returned to the Supervisor.

FORMAT

- A. Preliminary Pages
 1. Title page. The form of the title page must follow the sample shown at the end of these instructions. It must state the full title of the thesis, the candidate's name in full, the degree expected, the title of the department and the year of submission.
 2. Abstract. The abstract should be a summary of the thesis outlining the problem, the methods of investigation, the main results and the general conclusions. It should not normally exceed 300 words.
 3. Acknowledgments. This section should be a brief acknowledgment of assistance given to the candidate during the research and writing.
 4. Table of Contents. This should set forth all the principal topics or subdivisions of the thesis.
 5. List of Tables.
 6. List of Illustrations. This should include separate lists of all figures, plates, and maps.

B. Text

Although the following sections may not be applicable to all theses, they are offered as a guide.

1. Introduction and Literature Review (combined or separate sections). The introduction to a thesis should normally present the purpose, methods and scope of the study together with a survey of the literature pertaining to the subject of the investigation.
2. Materials and Methods. This section should present a detailed account of all methods used in the investigation.
3. Results. All results to be presented in the thesis must be given in this section together with any explanations that are necessary.
4. Each Figure number and legend should appear on the same page as the Figure and be placed under the Figure at the bottom of the page. Tables should have Table number and title placed above the Table at the top of the page.
5. Discussion and Conclusions. A discussion of the results obtained in the investigation and a summary of the candidate's conclusions should be given in one final section or may be presented in two separate sections.

Footnotes. The extensive use of footnotes is not acceptable, but where such additions to the text are considered necessary, they should be placed at the bottom of the appropriate page. A consistent style for footnotes, approved by the major department, must be followed throughout the thesis.

C. Literature Cited

The Literature Cited is a very important part of a thesis and care should be given to its preparation. The general form of each citation and the method of abbreviating names of periodicals should be the same as that used in an appropriate journal recommended by the Supervisor.

The usual mode of referencing is that known as the name-and-year system outlined in the Literature Cited subsection of the *Council of Biology Editors (CBE) Manual on Scientific Style and Format*, a copy of which is available online (<http://www.brocku.ca/mathematics-science/departments-and-centres/biology/undergrad/honours>).

Formats recommended for the most commonly used citation types are outlined below:

Journal Article

Surname of senior author, initials of senior author (if two authors), and, initials of junior author, surname of junior author (if three authors), comma, initials of second author, surname of second author, and, initials of third author, surname of third author, period, date, period, title of journal article (capitalize first word and proper names only), period, abbreviated journal title, period, volume number, colon, first page number of article, hyphen, last page number of article, period.

Paper citation example; continuously paginated journal:

McCarthy, M.G. and B.G. Coombe. 1985. Water status and winegrape quality. *Acta Hort.* 171:447-456.

Paper citation example; non-continuously paginated journal:

Reynolds, A.G. 2008. Irrigation management in the East: How much is enough? *Wine East* 35(5): 38-49, 62-63.

Book

Author(s) as above, period, date, period, title (capitalize first word and proper names only), period, publisher, comma, place (city) of publication, period, last page number, period.

Book citation example:

Mullins, M.G., A. Bouquet, and L.E. Williams. 1992. *Biology of the Grapevine*. Cambridge University Press, Cambridge, UK.

Part of Book or Proceedings

Author(s) as above, period, date, period, title of section (capitalize first word only), comma, p, period, first page of section, hyphen, last page of section, period, in (italicized), initials of author or editor of book, surname of author, comma, title of book (capitalize first word only), period, publisher, comma, place of publication, period.

Proceedings citation example:

Cline, R.A., K.H. Fisher, and O.A. Bradt. 1985. The effects of trickle irrigation and training system on the performance of Concord grapes. *In* Brown, R.B. (Ed.): *Proceedings of the 3rd International Drip/Trickle Irrigation Congress*. pp. 220-230. Amer. Soc. Agric. Engineers, St. Joseph, MI.

Miscellaneous Publications

Government Publication citation example:

Ontario Ministry of Agriculture, Food and Rural Affairs. 2002. *Fruit Production Recommendations*. Publication 360, Ontario Ministry of Agriculture, Food and Rural Affairs, Toronto, ON.

D. Appendices

Appendix pages are numbered in chronological sequence following the last page of the Literature Cited section of the thesis. Appendices can be used to present material accessory to the argument of the text. These may be of such nature as not to form integral parts of the text. Such material as extensive tables, mathematical developments, and additional experiments may well form appendices.

Each topic shall form a separate appendix, which must be identified by an upper-case Roman letter. References used in appendices will not be included in the list of references but should appear as a separate section at the end of the Appendix.

These instructions serve as a guide to the principal points to be kept in mind when organizing the thesis. It is the responsibility of the thesis supervisor to ensure that details not considered here (e.g., coloring of illustrations, quality of photographic plates, etc.) are discussed and clarified with the student.

(SAMPLE TITLE PAGE)

Using GPS, GIS and Airborne Imaging to Understand Niagara Terroir

Linda Tremblay

Department of Biological Sciences

(Submitted in partial fulfillment of the requirements for
the degree of Bachelor of Science - Honours)

Brock University

St. Catharines, Ontario

August 2007