

## **GUIDELINES FOR FNH 497 (2-6) DIRECTED STUDIES and FNH 499 (6) UNDERGRADUATE THESIS IN FOOD NUTRITION AND HEALTH**

This course provides a means for individual students to undertake customized projects designed to provide an opportunity for students to develop and strengthen their research skills and to accommodate special research interests that cannot be met through other FNH courses. With prior approval, credit for FNH 497/499 may be accepted in lieu of equivalent credit for FNH 425 in majors where this course is required. Admission to these courses is arranged through the **undergraduate program advisor** for the relevant major, and must be recommended by the faculty member who will be supervising the work that the student is to undertake. Students interested should contact the undergraduate advisor for their major and the individual faculty member(s) with whom they are interested in conducting a project well in advance of the beginning of the academic term; for example, students should approach potential supervisors in summer regarding thesis projects to start in September. Opportunities for conducting projects are limited.

The work plan is arranged and agreed to by the student and the faculty member and should be set out in writing with a copy to the undergraduate advisor, as described in the "**Project Proposal**". The proposal is due two weeks after the start of the terms. Students will be expected to spend approximately 40 hours of work per credit. This includes time spent on literature search, design of experiments, experimental work and generating reports and presentations.

A regular schedule of consultations should be pre-arranged between the supervisor and the student in order to monitor and discuss progress and time spent by the student on the project. If the project is to be conducted totally, or in part, at a location other than UBC, the supervising faculty member will make appropriate arrangements for regular monitoring of progress and time. This may entail appointment of an on-site co-supervisor.

If the project is associated with a summer or part-time, paid or volunteer position held by the student, care must be taken to ensure that any hours of work on the directed studies project are over and above those required of the related position. The supervisor must be satisfied that this requirement has been met. Normally, a minimum of 50% of the work required for the course must be conducted during the session in which the student is enrolled in the course. Exceptions to this requirement may be requested in advance where its application would result in a course overload, unnecessary delay in time to graduation, or the imposition of extra fees.

It is expected that the thesis will be completed within the academic year when it is initiated. The maximum period allowed for completion is 12 months, according to the University of British Columbia calendar, as quoted below. It is expected that FNH 499 Undergraduate Thesis courses will be completed within **no more than two consecutive terms**, unless otherwise agreed to at time of registration. If a grade has not been reported by the deadline, a "T" standing will be recorded. The "T" standing may be changed once the thesis Academic Supervisor submits a written record of the grade to the FNH Program Advisor.

*If a student in a baccalaureate program who receives a "T" standing in a graduating essay or other course approved by the faculty completes the course within 12 months of the end of the term in which the student first registered for the course the "T" standing will be replaced by the grade assigned. If the course is not completed within 12 months the "T" standing will be replaced by a grade of zero (or "F" standing in a Pass/Fail course) (From <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,42,96,0>).*

### **Deadlines for the course**

The following deadlines must be followed and any deviations should be approved first with the undergraduate program advisor. It is suggested that the student and their supervisor discuss and come to an agreement on any other deadlines that are pertinent, before the start of the project where possible.

<b>Milestone</b>	<b>Deadline</b>
Submission of project title and name of supervisor to undergraduate advisor (with signature from supervisor)	First Friday of the term
Project proposal	Second Friday of the term
Submission of thesis draft to supervisor (FNH 499 only)	Penultimate Friday of the term
Submission of final thesis copy to supervisor (FNH 499)	First Friday followed by a Monday in the exam period
Oral presentation of research work	Scheduled by the undergraduate advisor during the exam period

### **The project proposal**

The document should be no more than 2 pages consisting of the following information:

- The aim or hypothesis of the project (the ideas that are being tested).
- The significance of the project (why is it interesting or important), supported by relevant background information and literature.
- The experimental approach that will be used.
- The potential problems or difficulties that might be encountered in the project.
- The time line for the work (the dates when specific steps or milestones will be completed).
- Detailed breakdown of the overall mark as agreed upon by the student and supervisor.

The project proposal must be approved by the undergraduate advisor within the agreed upon date or the student will be removed from the course.

### **Responsibilities of the supervisor**

- Selection of appropriate research project in conjunction with the student
- Provision of suitable laboratory supplies and equipment to perform the work, including ethics approval if required
- Providing guidance on experimental design, data analysis, and presentation of results
- Scheduling of regular meetings with the student (e.g. weekly or biweekly)
- Giving feedback on the thesis draft in a timely manner
- Evaluating the student's performance and assigning a grade
- Arranging for a second evaluator for the oral presentation and/or written report

Note: the role of the supervisor in the written report should be restricted to providing general recommendations regarding structure, development, and progression of ideas; providing advice on the use of correct grammar, spelling, and sentence structure. Such guidance should be restricted to the first draft of the report.

### **Responsibilities of the student**

- Make arrangements well in advance to work under the guidance of a faculty member as a thesis supervisor.

- *Strict* adherence to deadlines and guidelines for the course, as stated in this document and arranged with the supervisor
- Submit copies of the project proposal to the project supervisor and the Undergraduate Advisor via the course website on Canvas
- Allocate appropriate time to this course over the two terms.
- Optional: submit a brief (one or two pages) progress report to the project supervisor approximately halfway through the term including:
  - Major accomplishments in the work to that time.
  - Major problems in the project.
  - Significant changes in the aim or approach for the project.
  - Remaining experiments that are expected to be completed.
- FNH 499 only Submission of two bound copies of the final thesis for evaluation.

### **Course Evaluation**

For purposes of determining a grade for the oral presentation and written thesis, evaluation will be conducted by the supervisor and at least one other faculty member selected from the student's program. The breakdown of the marks should be agreed upon between the student and supervisor and detailed in the project proposal. At least 20% of the overall marks must be assigned by the second evaluator.

### **Project Work** (*all marks assigned by the supervisor*)

The breakdown of the mark for lab work should be agreed upon by the supervisor and the student. A suggested breakdown is given as follows:

- Initiative (20%)
- Technique (20%)
- Comprehension (20%)
- Organization, work habits, attention to safety/proper protocols (20%)
- Dedication and Perseverance (20%)

Note that supervisors may also assign a portion of the lab work component to the oral presentation and/or final report if they wish to increase the relative weighting of those components.

### **Oral Presentation**

Normally students will give a presentation during the exam period and will be evaluated by several faculty members according to a standard rubric (included as an attachment). In all cases the students mark will be a weighted average with 50% of the weight coming from the supervisor and the remaining 50% divided equally among other evaluators.

### **Final Report**

For students enrolled in FNH 497 the breakdown of the mark for the final report presentation should be agreed upon between the student and the supervisor. Students enrolled in FNH 499 must complete a written thesis and will be assigned marks according to the breakdown below. In all cases the students mark will be a weighted average with 50% of the weight coming from the supervisor and the remaining 50% divided equally among other evaluators.

- Abstract (5%)

- A concise summary of the report
- No abbreviations should be used
- Introduction, Statement of Objectives (5%)
  - Introduction of the research topic
  - Clear outline of the hypothesis, rationale, objective and specific aims of the project
- Literature Review (15%)
  - Showing depth and scope of the pertinent literature
- Materials and Methods (15%)
  - Concise and explicit description of the experimental methods used
  - Detailed description of newly developed methods
  - Citation of appropriate references for methods not developed by the student themselves
  - Source of materials and chemicals used
  - Methods used for data analysis, if appropriate
- Results (10%)
  - Presentation of figures, tables, appendices where applicable, in a manner that is commonly used in research publications for the area.
  - Inclusion of statistical significance of data
  - Presentation of data solely generated by the student during the project
- Discussion (20%)
  - Demonstrating critical analysis of results and comprehension of subject area
- Conclusions (5%)
- References (5%)
  - Citation of all literature referred to in the report
  - Consistent and appropriate format used
- Clarity, grammar (sentence structure, spelling), organization (20%)

### Thesis Write-up Guidelines (FNH 499 only)

The following items are suggestions as to the write-up of theses. For specific items, the Research Supervisor should be consulted. Also available for consultation, are copies of theses of previous classes. Each thesis should contain, in the order given, the following sections:

**Title page:** This page contains the title, author's name, a statement as follows: "A thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Agriculture in the Department of Food Science", and the date (see example attached).

**Abstract:** This is a condensation of the contents of the thesis, usually 200 words or less, giving significant information in the report. It serves as a quick reference to determine if the thesis contains information a person is looking for.

**Table of Contents:** This should list all major and subheadings accompanied by the page on which they are found (see example attached).

**List of Tables:** The table number, caption and page on which it is found are listed.

**List of Figures:** The figure number, legend and page on which it is found are listed.

**Acknowledgements:** This section expresses thanks and appreciation to individuals, institutions or organizations that were particularly helpful in the carrying out of the thesis work. This section is optional.

**Introduction:** The introduction outlines to the reader the thesis subject, its importance, presents the specific problem of the thesis and indicates the nature of the investigation carried out.

**Literature Review:** This section generally outlines or discusses findings reported by others in books and journals, relating to and leading to the proposed investigation as related in the thesis (corrected version submitted for marking in October inserted)

**Materials and Methods:** This section should describe the experimental procedures employed and the equipment and facilities used, in a manner which would allow others to duplicate the work.

**Results and Discussions:** This section can be written as a combination of the two or as separate entities. The section relates the information, experimental data or observations resulting from the study and describes the findings and what they mean are described logically, leading up to a set of conclusions. The format of tables and figures should be as in the Journal of Food Science or Journal of Agricultural and Food Chemistry.

**Conclusions:** This section reports the conclusions reached on the basis of evidence presented in the discussion. This may often be combined with a concise summation of results reported in the previous section.

**References:** This should be an alphabetical listing of authors of literature cited in the thesis. The format to be used for citing in the thesis body and listing at the end should be that of the Journal of Food Science or Journal of Agricultural and Food Chemistry.

**Appendix:** Appendices are repositories for details that must be recorded because they may be needed, but would slow the reader down unnecessarily if placed in the body of the thesis. Appendix materials must be referred to in the body of the thesis. Calculations, detailed analyses and test figures are typical material found in this section.

This thesis should be legibly typed or printed on good quality bond paper. It should be in 12 pt font, with 2.54 cm margins, double spaced, and printed single sided. The two copies to be submitted to the thesis advisor may be good quality photocopies. The copies submitted should be bound in suitable binders such as Duo-tang or Acco-press binders, or coil bound.

(Title page example)  
**TITLE OF THE THESIS**

By

**Your name**

**A Thesis Submitted in Partial Fulfillment for the Requirements for the Degree of Bachelor of  
Science in Food and Land Systems**

Food, Nutrition, and Health Program

Faculty of Land and Food Systems

**The University of British Columbia**

April 20XX

## TABLE OF CONTENTS (Example)

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(Note: results and discussion may be presented as a single section or may be presented as two separate sections)	
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## FNH 499 Grading Rubric for Thesis Oral Presentation

<b>Category/Rating</b>	<b>Poor (0-3)</b>	<b>Acceptable (3.5)</b>	<b>Good (4)</b>	<b>Excellent (5)</b>
<b>KNOWLEDGE &amp; CONTENT</b>				
<b>Adequacy of introduction</b>	Introduction and background information was unfocused; audience did not know what the objectives of the presentation were.	Audience had an idea of the focus and objectives of the presentation, but some of the background was either missing or irrelevant.	Captured audience attention; presented adequate background; objectives were clear by the end of the introduction.	Captured audience attention; presented relevant background, quickly established a focus, and clearly stated objectives of the presentation.
<b>Explanation of experimental approach and methodology</b>	Presented procedures used without demonstrating why those methods were chosen or an understanding of the principles.	Presented overview of experimental approach, and described methods to be used.	Presented details of the chosen experimental approach; accurate description of main principles and key steps of methods.	Gave clear rationale and details for the chosen experimental approach; accurate description of main principles and key steps of methods.
<b>Explanation of results</b>	Data was not presented clearly, and/or incorrect explanations of the results were given.	Presented the data obtained from each of the methods; made a good attempt to explain the results.	Presented the data obtained from each of the methods clearly; explained the meaning of each of these results.	Presented the data obtained from each of the methods clearly; provided meaningful interpretation and inter-connections of results
<b>Clarity &amp; accuracy of discussion; Critical judgment exercised</b>	Did not show any understanding of the significance and limitations of the research findings	Gave a good effort to explain the significance and limitations of the research findings	Demonstrated good understanding of the significance and limitations of the research findings	Articulated critical judgment and good understanding of the significance and limitations of the research findings
<b>Appropriateness of conclusion and take-home message</b>	Ended the presentation abruptly; or a conclusion was presented that did not reflect the main points of the presentation.	Summarized main points of the presentation; audience left with a take-home message.	Summarized main points of the presentation; audience left with a clear take-home message; presentation concluded logically.	Summarized main points in an integrated fashion; audience left with a clear take-home message; presentation concluded logically.
<b>Response to questions</b>	Lacked accurate or relevant answers to most of the questions asked.	Made strong effort to answer questions, and handled most questions knowledgeably, but with some hesitation.	Handled most questions knowledgeably and with confidence.	Handled questions knowledgeably and with confidence; demonstrated greater depth of knowledge than what was presented.



**ORGANIZATION & DELIVERY**

<b>Category/Rating</b>	<b>Poor (0-3)</b>	<b>Acceptable (3.5)</b>	<b>Good (4)</b>	<b>Excellent (5)</b>
<b>Flow of information</b>	Presentation of information is disconnected; audience found it difficult to understand the main points and to follow the presentation.	Logical organization of information; some gaps or pauses in the transitions between sub-topics of group members.	Smooth and logical organization of information; transitions between sub-topics and group members were mostly effective.	Smooth and logical organization of information; effective bridging between sub-topics and among group members; easy to follow.
<b>Effectiveness of delivery</b>	Reading extensively from notes or the monitor; no eye contact with audience; low volume &/or speaking in a monotone	Spoke in a clear voice at an acceptable pace; occasionally relying on notes or the monitor; made some eye contact with the audience.	Spoke clearly, with good volume and intonation and at a good pace; established good eye contact with the audience	Spoke clearly and confidently, with good volume and intonation and at a good pace; excellent eye contact with the audience
<b>Enthusiasm, professionalism</b>	Apathetic presentation of information; distracting gestures, inappropriate demeanor and/or frequent use of slang or colloquialism	Demonstrated interest for the topic. Occasional distracting gestures or inappropriate choice of words.	Demonstrated enthusiasm for the topic; conveyed professionalism in language and demeanor.	Demonstrated a passion for the topic and instilled interest in the audience; conveyed professionalism in language and demeanor.
<b>Use of visual aids</b>	Most visual aids were too "busy", &/or had text with too small font size or verbatim to speaker's presentation.	Visual aids were used to convey information to the audience. Some slides may have been difficult to understand or see clearly.	Visual aids were attractive and effectively used to clearly convey information to the audience.	A variety of visual aids was used to capture the attention of the audience and enhance understanding of the presented information.
<b>Adherence to time limit</b>	Presentation was longer than 18 minutes or shorter than 12 minutes.	Kept to within three minutes of the prescribed 15 minute time limit	Kept to within two minutes of the prescribed 15 minute time limit.	Kept to within a minute of the prescribed 15 minute time limit!



University of British Columbia  
**Faculty of Land and Food Systems**  
**FNH 497/499**  
**Registration Form**

_____ Date Registered
Initials: _____ FNH Program Advisor

<b>Student Name:</b>		<b>UBC Student #:</b>	
<i>Select the course option</i>			
	FNH 497 – Directed Studies		FNH 499 – Undergraduate Thesis

<i>Select a Term</i>	
	Sept-Dec (Winter Session, Term 1)
	Jan-Apr (Winter Session, Term 2)
	Sept – Apr (Winter Session, Terms 1 & 2)
	May – Aug (Summer Session, Terms 1 & 2)

Start Date (yy/mm/dd)		Expected End Date(yy/mm/dd)	
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<i>Select all applicable boxes:</i>
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<input type="checkbox"/> <i>approved institution Canada</i>	<input type="checkbox"/> <i>approved institution international</i>	<input type="checkbox"/> <i>UBC Farm</i>	<input type="checkbox"/> <i>Other</i>
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<b>Project site:</b>	
<b>Academic supervisor:</b>	<b>Site supervisor: (If applicable)</b>

<b>Project Title</b>

_____ <b>Student Signature</b>	_____ <b>Academic supervisor signature</b>	_____ <b>Site supervisor signature</b>
_____ <b>Date</b>	_____ <b>Date</b>	_____ <b>Date</b>

