

Graduate Module

Module Title: Lipid nutrition

Instructor: Dr. Stefanie Colombo

Dates module will be offered: January to February 2019

Frequency of formal classes/meetings: 2-hour meetings each week for 5 weeks

Module Content and Learning Objectives:

The module will provide advanced knowledge in the area of lipid nutrition, in terms of lipid biochemistry, lipid analysis, and current topics in lipid research. Students will learn the basics of lipid biochemistry (intact lipids, lipid classes, fatty acids, lipid oxidation), learn how to sample lipids appropriately and how to prepare them for analysis, and learn the variety of options for lipid analysis. We will discuss current topics in the field of lipid nutrition, including (but not limited to) transgenic oilseeds, the role of DHA in brain health, impacts of climate change on fatty acid production, new analytical techniques, etc. The module will consist of lectures, group discussion, and independent work.

Students will be required to write a review paper on a topic of choice in the area of lipid nutrition (plant/animal/system of choice) in consultation with Dr. Colombo (~10 double-spaced pages). The student will present their review paper to the instructor and students in the module (20 minutes allotted time).

Learning Objectives:

Following completion of this module, students will be able to:

1. Describe aspects of general lipid chemistry and biochemistry
2. Describe various lipid components including intact lipids, fatty acids, lipid oxidation products
3. Compare basic methods of lipid analysis, including sample preservation, lipid extraction, derivatization, and lipid class characterization
4. Discuss current topics in the field of lipid nutrition (plants/livestock/humans/fish) and critically analyze the recent literature
5. Formulate a hypothesis, integrate available knowledge and arrive at a conclusion on a lipid nutrition-related topic

Method of Evaluation:

Review Paper on Current Topic in Lipid Nutrition: 70%

Oral Presentation on the Review Paper: 30%

Total: 100%

Any restrictions on enrollment: Graduate student standing, with interest in the area of lipids.