

Dalhousie University – Faculty of Agriculture
AGRI5710 Digital Image Processing Module
Module Outline
Spring/Summer/Fall 2024

Instructor: Dr. David Barrett, Module Instructor
Office: Haley Institute, Room 100-14
Office Phone: 902-896-2305 (leave a voice message)
Office Hours: by appointment
Email: david.barrett@dal.ca

Class Time:

Lectures – 1 h introductory lecture

Module Description:

Students will spend most of the module planning, carrying out, and presenting a digital image processing assignment of their own research images or images from their fields of research. The instructor will approve of and provide some assistance with this assignment. Every student will have designated periods of time to use the image processing system(s), such as the Image Pro Plus software program. Each student will be involved in presentation-peer evaluation.

Students will be required to study relevant background material. The instructor will assign readings on image processing, concepts of processing, and examples of digital image processing.

The final exam will cover image processing, concepts of processing, and examples of digital image processing.

PREREQUISITES: STAA 2000 or equivalent (required)
CSCI 1000 or equivalent (recommended)

Learning Outcomes and Objectives:

In this module we will explore digital image processing and concepts of processing through independent study, a digital image processing assignment, including a report and oral presentation, and a final exam. By the end of this course, students will have learned:

- About digital image processing and concepts of processing.
- To identify and examine many examples of digital image processing from their everyday lives and own imaging-based research areas.
- To plan, execute, and present a digital image processing assignment of their own research images or images from their fields of research.

Textbooks and Additional Materials:

Digital Image Processing: Principles and Applications by G. Baxes LIBRARY RESERVE

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Module Requirements and Grading:

Peer Mark of Presentation	5%	Last Week of Module	In class
Instructors Mark of Presentation	15%	Last Week of Module	In class
Assignment Report	45%	Last Week of Module	Online
Final Exam (1 h; closed book; oral)	35%	Last Week of Module	In class
	100%		

Policy on Re-grading Assignment Report: Within one week of an assignment report being returned, the student(s) may request in writing that their assignment report be re-graded. The reason for the request must be clearly and reasonably outlined in the e-mail of request.

Policy on Missed Classes: According to the regulations in the Dalhousie University Calendar, students are expected to attend all classes. Attendance in the Oral Presentations is mandatory. Also, at the discretion of the instructor, a student who misses an oral presentation will receive a mark of zero on their own presentation.

Assignment Report: Each report will be completed by each student. Your assignment must be approved by the module instructor. Students who do not submit their report on the agreed upon deadline will receive a 20% reduction in their mark for each 24-hour period after the deadline, even if the report is submitted just a few minutes late.

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Module Grading and Scale:

A final letter grade will be assigned based on the following scale:

Percentage	Grade	Definition	Notes
89.5-100	A+	Excellent	Considerable evidence of original thinking; demonstrated outstanding capacity to analyze and synthesize; outstanding grasp of subject matter; evidence of extensive knowledge base.
84.5-89.4	A		
79.5-84.4	A-		
76.5-79.4	B+	Good	Evidence of grasp of subject matter, some evidence of critical capacity and analytical ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.
72.5-76.4	B		
69.5-72.4	B-		
0-69.4	F	Inadequate	Insufficient evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or irrelevant use of the literature.
0.00	INC	Incomplete	
Neutral and no credit obtained	ILL	Compassionate reasons, illness	

Module Schedule:

The module schedule may be revised/amended due to unusual circumstances (e.g., instructor illness, Public Health/university requirements, campus closure due to inclement weather). This may include doing presentations and exams online rather than in person. Any such change, including changes in presentation and assignment dates, will be communicated to students by e-mail.

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APPENDIX

Faculty of Agriculture Statements

Availability of Faculty:

Your instructor will answer emails and other communications in a timely manner and within their own normal work hours. You should not expect your instructor to respond immediately to your message; a response might take 24- 48 hours. Please plan accordingly. Furthermore, faculty are not expected to check and respond to emails during evening and weekend hours.

University Statements, Policies, Guidelines and Resources for Support

Territorial Acknowledgement:

The Dalhousie University Senate acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.

Internationalization

At Dalhousie, “[thinking and acting globally](#)” enhances the quality and impact of education, supporting learning that is “interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders.”

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate.

<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog>

Accommodations and Academic Support:

If you are having difficulty with course content or have challenges meeting any of the deadlines, please contact the professor for this course as soon as possible to discuss your options. Any student who may require academic accommodations is encouraged to meet with Bev Zinck, Coordinator of Academic Accommodations in Student Success Centre, Dairy Building. She can also be reached at (902)896-2463 or scc@dal.ca. You can learn more about academic accommodations at <https://www.dal.ca/about-dal/agricultural-campus/ssc/accessibility/accommodations.html>

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Use of plagiarism detection software:

All assignments may be submitted to Dalhousie's current plagiarism detection software, a program that compares documents to online sources. If you do not wish to have your assignments submitted to this software, you must notify the module instructor of that within the first week of the module, and we will arrange other methods to verify that the work is yours, such as submitting all drafts and resource notes in addition to the assignment.

Academic Integrity:

Students are not allowed to collaborate with one another on their individual assignments, reports, or presentations.

In this course, LLM/AI systems, such as ChatGPT, are not allowed to be used by students to complete term papers.

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

We must all work together to prevent academic dishonesty because it is unfair to honest students. The following are some ways that you can achieve academic integrity; some may not be applicable in all circumstances.

- make sure you understand Dalhousie's policies on academic integrity (see https://www.dal.ca/dept/university_secretariat/academic-integrity.html)
- do not cheat in examinations or write an exam or test for someone else
- do not falsify data or lab results
- be sure not to plagiarize, intentionally or unintentionally, for example...
 - clearly indicate the sources used in your written or oral work. This includes computer codes/ programs, artistic or architectural works, scientific projects, performances, web page designs, graphical representations, diagrams, videos, and images
 - do not use the work of another from the Internet or any other source and submit it as your own
 - when you use the ideas of other people (paraphrasing), make sure to acknowledge the source
- do not submit work that has been completed through collaboration or previously submitted for another assignment without permission from your instructor (These examples should be considered only as a guide and not an exhaustive list.)

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If you are ever unsure about any aspect of your academic work, you should talk with your professor or go to one of the following resources:

- Academic Integrity website:
https://www.dal.ca/dept/university_secretariat/academic-integrity.html)
- - Links to policies, definitions, online tutorials, tips on citing and paraphrasing
- Writing Centre (see <http://writingcentre.dal.ca/>) - Assistance with learning to write academic documents, reviewing papers for discipline-specific writing standards, organization, argument, transitions, writing styles and citations
- Dalhousie Libraries (see <http://www.library.dal.ca/>) - Workshops, online tutorials, citation guides, Assignment Calculator, RefWorks

What will happen if an allegation of an academic offence is made against you?

As your instructor, I am required to report every suspected offence.

The full process is outlined in the [Faculty Discipline Flow Chart](#).

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2).

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The [Code of Student Conduct](#) allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

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Dalhousie students are asked to take responsibility for their own short-term absences (3 days or less) by contacting their instructor by phone or email prior to the academic requirement deadline or scheduled time and by submitting a completed Student Declaration of Absence to their instructor in case of missed or late academic requirements. Only two separate Student Declaration of Absence forms may be submitted per course during a term.

(read more: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/academic-policies/Information%20for%20students.html)

Review of Grades:

Students who have questions about final grades that are assigned are encouraged to discuss them with the module professor. In addition, students should consult the chair of the department or an academic advisor. If their concerns cannot be resolved, students may also use the formal process that follows for the re-assessment of final grades, as set forth in the Dalhousie University Calendar, except when such grades are the result of an academic discipline penalty.

SECTION C:

Dalhousie courses are governed by the academic rules and regulations set forth in the [Academic Calendar](#) and the [Senate](#).

Important student information, services and resources are available as follows:

University Policies and Programs

- [Important Dates in the Academic Year](#) (including add/drop dates)
- [Classroom Recording Protocol](#)
- [Dalhousie Grading Practices Policy](#)
- [Grade Appeal Process](#)
- [Sexualized Violence Policy](#)
- [Scent-Free Program](#)

Learning and Support Resources

- Academic Support - Advising [Truro](#)
- [Student Health & Wellness Centre](#)
- [On Track](#) (helps you transition into university, and supports you through your first year at Dalhousie and beyond)
- [Indigenous Student Centre](#). See also: [Indigenous Connection](#).
Truro : <https://www.dal.ca/about-dal/agricultural-campus/ssc/communities/indigenous-student-support/services.html>

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- Elders-in-Residence: The [Elders in Residence program](#) provides students with access to First Nations elders for guidance, counsel and support. Visit the office in the [Indigenous Student Centre](#) or contact the program at elders@dal.ca or 902-494-6803.
- [Black Student Advising Centre](#)
- [International Centre](#)
- [South House Sexual and Gender Resource Centre](#)
- [LGBTQ2SIA+ Collaborative](#)
- [Dalhousie Libraries](#)
- [Copyright Office](#)
- [Dalhousie Student Advocacy Service \(DSAS\)](#)
- [Dalhousie Ombudsperson](#)
- [Human Rights & Equity Services](#)
- [Writing Centre](#)
Truro: contact <https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/writing-centre.html>
- [Study Skills/Tutoring](#)
- Program Specific Academic Advising:
<https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising/academic-advisors.html>

Safety

- [Biosafety](#)
- [Chemical Safety](#)

Department Chair Approval

Name: Dr. Bruce Rathgeber

Signature: _____

Date: _____

*Form revised and updated July 2023.
Associate Dean Academic, Faculty of Agriculture*