ECE 536 – Computer Vision
Term – Spring 2019 (201901)

Instructor
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Office Hours
Days: Fri
Time: 13:00 – 15:00
Location: EOW 353

Instructor
Dr. Alexandra Branzan Albu
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E-mail: aalbu@uvic.ca
Location: EOW 307

Course Objectives
- To provide students with the basic skills needed to analyze, formalize, and solve Computer Vision problems.

Learning Outcomes
Upon completion of this course, the students will be able to:
- understand basic concepts, mathematical tools, algorithms for digital image processing, and classification of visual patterns
- implement an algorithm to solve a specific computer vision problem
- evaluate the performance of the algorithm using quantitative evaluation methods

Syllabus
Overview of the main concepts and methods in computer vision; image preprocessing for feature extraction; image segmentation; binary shape analysis; texture analysis; motion analysis and tracking; feature selection; pattern recognition and classification

A-Section(s): A01 / CRN 20926
Days: Monday and Thursday
Time: 8:30 – 9:50 am
Location: ECS 108

Optional Text
Title: Computer Vision: Algorithms and Applications
Author: R. Szeliski
Publisher: Springer
Year: 2010

References: Additional mandatory readings will be posted regularly on the course web site.
**Assessment:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Due Dates/Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>40%</td>
<td>Week 3, Week 6, Week 9, Week 12</td>
</tr>
<tr>
<td>Mid-term</td>
<td>15%</td>
<td>Mar 14</td>
</tr>
<tr>
<td>Project</td>
<td>30%</td>
<td>TBD</td>
</tr>
<tr>
<td>Final Exam</td>
<td>15%</td>
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**Note:**

- There will be **four programming assignments**: All assignments are work 10% of the final mark.
- The **project** will have **four deliverables**: a proposal report, project code, one oral presentation and one final report.
- Failure to pass the cumulative mark of midterms will result in a failing grade for the course.
- Failure to pass the cumulative mark of assignments will result in a failing grade for the course.

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Graduate Calendar. [https://web.uvic.ca/calendar2019-01/grad/academic-regulations/grading.html](https://web.uvic.ca/calendar2019-01/grad/academic-regulations/grading.html)

**Note to Students:** Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair’s Assistant to set up an appointment.

**Accommodation of Religious Observance:** [https://web.uvic.ca/calendar2019-01/grad/registration/Registration.1.17.html#](https://web.uvic.ca/calendar2019-01/grad/registration/Registration.1.17.html#)

**Policy on Inclusivity and Diversity:** [https://web.uvic.ca/calendar2019-01/general/policies.html](https://web.uvic.ca/calendar2019-01/general/policies.html)

**Standards of Professional Behaviour:** You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities. [https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf](https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf)

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Graduate Calendar for the UVic policy on academic integrity. [https://web.uvic.ca/calendar2019-01/grad/academic-regulations/academic-integrity.html](https://web.uvic.ca/calendar2019-01/grad/academic-regulations/academic-integrity.html)

**Equality:** This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation.
Alternatively, you may want to contact the Resource Centre for Students with a Disability located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

Course Lecture Notes
Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

Sexualized Violence Prevention and Response at UVic
UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Sexualized violence resource office in EQHR; Sedgewick C119
Phone: 250.721.8021
Email: svpcoordinator@uvic.ca
Web: www.uvic.ca/svp