COURSE OBJECTIVE: The main objective of this course is to investigate digital camera images, filtering, anisotropic wavelets, feature extraction, and topological methods that facilitate image classification and content-based image retrieval.

CONTACT HOURS: 3

PRE-REQUISITES: ECE 3580 (or 024.358) or equivalent desirable.

COURSE CONTENT: Digital representation of images. Two-dimensional operations and transforms. Image enhancement, registration, differencing, filtering, and coding. Topological methods will include study of collections of open sets in regions-of-interest in digital images and image filtering. Classifying, retrieving and comparing image content.

HOMEWORK: Bi-weekly assignments.

TEXTBOOK:

EVALUATION:
Your final course grade is determined by your performance in assignments, term test, and a final examination. The weighting of each of these components is as follows:

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>VALUE</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
<td>Bi-weekly assignment of problem(s) to solve.</td>
</tr>
<tr>
<td>Project</td>
<td>10%</td>
<td>Takehome project.</td>
</tr>
<tr>
<td>Term Test</td>
<td>30%</td>
<td>2 one hour term tests.</td>
</tr>
<tr>
<td>Final Examination</td>
<td>50%</td>
<td>3 hour final examination.</td>
</tr>
</tbody>
</table>
INSTRUCTOR INFO:
Name: James F. Peters
Office: E1-530
Tel: 474-7419
Email: jfpeters@ee.umanitoba.ca

Office Hours: By appointment, only.

VOLUNTARY WITHDRAW:
March 16, 2012

REQUIREMENTS/REGULATIONS
- Student Responsibilities: It is the responsibility of each student to contact the instructor if he or she is uncertain about his or her standing in the course and about his or her potential for receiving a failing grade. Students should also familiarize themselves with Sections 4 and 6 of the Regulations dealing with incomplete term work, deferred examinations, and attendance and withdrawal.
  - Lectures: Attendance at lectures is essential for successful completion of this course. Students must satisfy each evaluation component in the course.

ACADEMIC INTEGRITY:
Students are expected to conduct themselves in accordance with the highest ethical standards of the Profession of Engineering and evince academic integrity in all their pursuits and activities at the university. As such, in accordance with the General Academic Regulations and Requirements of the University of Manitoba, Section 7.1, students are reminded that plagiarism* or any other form of cheating in examinations, assignments, laboratory reports or term tests is subject to serious academic penalty (e.g. suspension or expulsion from the faculty or university). A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty

*Plagiarism: to steal and pass off (the ideas or words of another) as one's own : use (another's production) without crediting the source