Class Time: Wednesdays, 6:30-7:50 PM  
Location: Room 1208, Conrad Grebel University College  
Instructor: Paul Heidebrecht  
Phone: 519-885-0220 Ext. 24225  
Email: pheidebr@uwaterloo.ca (best way to reach me)  
Office Hours: Book an online meeting weekdays between 8:30 AM – 4:30 PM via Calendly

Territorial Acknowledgment:  
This class meets on the traditional territory of the Attawandaron (also known as Neutral), Anishnaabeg, and Haudenosaunee peoples. Conrad Grebel University College and the University of Waterloo are situated on the Haldimand Tract, the land promised to the Six Nations that includes 10 kilometers on each side of the Grand River. Please read Grebel's full land acknowledgement for additional context.

COVID-19 Guidelines for In-person Classes:
1. Everyone must submit proof of vaccination in accordance with University of Waterloo regulations, with rare and specific exceptions that require rapid antigen testing.
2. Everyone must complete the COVID-19 screening questions using the Campus Check-In tool before arriving on campus, and must not attend class if experiencing any COVID-19 symptoms.
3. Everyone must wear a face covering while on campus.
4. Everyone must maintain physical distance (2-metres apart) while outside of instructional spaces. This guideline will also be observed within room 1208.
5. All course materials will be provided through online means.

Please consult the University of Waterloo COVID-19 Information website for the most up-to-date information on guidelines.

Contingency Plans:  
In the event of the short or longer term cancellation of in-person classes at the University of Waterloo, this class will meet synchronously at the regularly scheduled time via Zoom (passcode: 3bZ8vc). If a student is going to miss a class due to illness or because they are required to self-isolate due to COVID-19 protocols, they should contact their instructor as soon as possible.

Course Description:  
This course is built on the conviction that the kinds of problems engineers seek to address, and the ways they seek to address them, should matter for anyone interested in advancing peace in the world. Topics include: historical connections between the discipline of engineering and warfare, understanding the engineering method and mindset, and technological frontiers for peacebuilding.
Course Description, continued:

Intended to test the foundational assumption of the University of Waterloo’s Peace and Conflict Studies program—that peace is everybody’s business—initial offerings of this course verified that PACS has something important to offer to the field of engineering, and that engineering as a discipline has something important to contribute to the advancement of peace. This course is also intended to encourage and equip students to tackle pressing social challenges through other curricular (e.g., Capstone Design or Senior Research projects) and co-curricular (e.g., co-op work terms or entrepreneurship programming) offerings at Waterloo.

Course Learning Outcomes:

By the end of the term, students should be able to:

1. clearly articulate why peace is the business of engineers;
2. augment their approach to analyzing and solving problems with insights from both engineering and peacebuilding theory and practice;
3. convince non-engineers that engineers can contribute to building sustainable peace; and
4. identify opportunities to apply their expertise and passions to make a meaningful social impact.

Course Delivery:

This course is being offered in a hybrid or blended format, combining elements of the asynchronous online version delivered in 2020, and the fully in-person versions delivered in 2019 and prior years. Each weekly module includes the following five required learning events:

<table>
<thead>
<tr>
<th>Mode</th>
<th>#</th>
<th>Event</th>
<th>Description</th>
<th>Estimated Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Preparation</td>
<td>1</td>
<td>Required Reading</td>
<td>Read and comment on an assigned article, report, or book excerpt via Perusall</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Supplemental Resource</td>
<td>Watch a video, listen to a podcast, or review website content</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Guest Interview</td>
<td>Watch a pre-recorded video interview with an engineer and/or peacebuilder</td>
<td>30 minutes</td>
</tr>
<tr>
<td>In-person Class</td>
<td>4</td>
<td>Check-in</td>
<td><strong>Engage</strong> with the instructor on the required reading, supplemental resource, and guest interview for the week, as well as previous in-class assignments</td>
<td>20 minutes</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Assignment</td>
<td>Complete an assigned exercise or task and submit required outputs via LEARN</td>
<td>60 minutes</td>
</tr>
</tbody>
</table>

Course Assessment:

<table>
<thead>
<tr>
<th>#</th>
<th>Element</th>
<th>Weight</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-class Assignments</td>
<td>50% (best 10 of 12 x 5% each)</td>
<td>Weekly</td>
</tr>
<tr>
<td>2</td>
<td>Course Engagement</td>
<td>30%</td>
<td>Various</td>
</tr>
<tr>
<td>3</td>
<td>Final Exam</td>
<td>20%</td>
<td>December 17</td>
</tr>
</tbody>
</table>
Additional Course Assessment Instructions:

(i) In-class Assignments
Every weekly module will include an assignment that will require students to complete an exercise or task related to the topic of the week. This will be a major component of student evaluation, and detailed instructions will be provided for each individual assignment. Required outputs must be submitted via LEARN by the end of each class on Wednesdays at 7:50 PM; late assignments will NOT be accepted. The assessment rubric is as follows:

- 60% – Met the minimum expectations for the assignment
- 75% – Demonstrated a meaningful level of engagement with the assignment
- 90% – Made a contribution that went above and beyond expectations

(ii) Course Engagement
Assessment of course engagement will utilize a specifications grading approach. Each activity is graded pass/fail, and the overall grade for course engagement will be based on the number of levels that students complete successfully. Late submissions will not be accepted unless negotiated in advance.

<table>
<thead>
<tr>
<th>Course Engagement Levels</th>
<th>Grade</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: Required reading engagement</td>
<td>60%</td>
<td>Weekly until Dec. 1</td>
</tr>
<tr>
<td>▪ Post good questions, comments, and responses on Perusall by noon before class each Wednesday; an average Perusall score of 1.0 or higher is required to achieve this level.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2: Level 1 + all class surveys completed</td>
<td>70%</td>
<td>Sep. 29, Oct. 27, Nov. 17</td>
</tr>
<tr>
<td>▪ Provide feedback on course topics, readings, guests, and assignments via three surveys posted on LEARN.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 3: Levels 1 &amp; 2 + participation in one campus or community event</td>
<td>80%</td>
<td>By Dec. 1</td>
</tr>
<tr>
<td>▪ Submit a report via LEARN on a campus or community event attended that contributes to at least one of the learning outcomes for this course.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 4: Levels 1, 2 &amp; 3 + extended reading</td>
<td>90%</td>
<td>By Dec. 8</td>
</tr>
<tr>
<td>▪ Read one of the books listed in the “Extended Reading Bibliography” at the end of this syllabus and complete a virtual book review discussion with your professor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 5: Levels 1, 2, 3 &amp; 4 + publication</td>
<td>100%</td>
<td>By Dec. 17</td>
</tr>
<tr>
<td>▪ Publish an opinion piece, news article, or blog post in an on-campus or community media outlet that in some way addresses the question: “Why is peace the business of engineers?”</td>
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</tbody>
</table>

(iii) Final Exam
This class will conclude with a take-home final exam distributed on December 1; answers must be submitted via LEARN by the end of the day on December 17. The exam will be composed of essay questions that provide the opportunity to demonstrate your own knowledge of the topics and readings encountered throughout this course, and insights you have gleaned from guest interviews and assignments. Evaluation will also be based on the overall presentation and organization of your answer, including sentence structure and mechanics.
Additional UWaterloo Course Policies:

**Academic Integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See the [Office of Academic Integrity webpage](#) for more information.

**Discipline:** A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for their actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor or the PACS Graduate Studies Coordinator. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to [Policy 71 - Student Discipline](#). For typical penalties, check [Guidelines for the Assessment of Penalties](#).

**Grievance:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt, please be certain to contact the PACS Graduate Studies Coordinator who will provide further assistance.

**Appeals:** A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

**Accommodation for Students with Disabilities:**
The [AccessAbility Services](#) office, located in Needles Hall (room 1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the start of each academic term.

**Mental Health Support:**
All of us need a support system. The faculty and staff at Conrad Grebel University College and the University of Waterloo encourage students to seek out mental health supports if they are needed.

**On Campus:**
- Counselling Services: counselling.services@uwaterloo.ca / 519-888-4567 ext. 32655
- **MATES:** one-to-one peer support program offered by the Waterloo Undergraduate Student Association (WUSA) and Counselling Services
- Health Services Emergency service: located across the creek from Student Life Centre

**Off campus, 24/7:**
- **Good2Talk:** Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-433 ext. 6880
- **Here 24/7:** Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- **OK2BME:** set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Download [UWaterloo and regional mental health resources (PDF)](#) and the [WatSafe app](#) to quickly access mental health support information.
Course Schedule:
The following schedule will be updated on an ongoing basis to fill gaps in required readings, supplemental resources, and guest interviews. All updates will be posted in advance on LEARN and Perusall.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Online Preparation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sep. 8</td>
<td>Course introduction: Why peace is everybody’s business</td>
<td>Course syllabus</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Sep. 15</td>
<td>Why has war been the business of so many engineers?</td>
<td>Niesmua and Blue, “Engineering and War”</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sep. 22</td>
<td>Peace movements as a response to changes in the technology of warfare</td>
<td>Article 36, “Some Key Issues in Humanitarian Disarmament”</td>
<td>Üzümcü, “Nobel Lecture”</td>
</tr>
<tr>
<td>4</td>
<td>Sep. 29</td>
<td>Technological frontiers for peace activists</td>
<td>JustPeace Labs, “Technology in Conflict”</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Nov. 3</td>
<td>Peacebuilding for people who aren’t peacebuilding professionals</td>
<td>Docherty and Lantz-Simmons, “What is Old is New Again”</td>
<td>Institute for Economics &amp; Peace, “Global Peace Index 2021”</td>
</tr>
</tbody>
</table>

- Oct. 11-15 Thanksgiving Day holiday and Reading Week

Survey #1 due
Survey #2 due
### Course Schedule, continued:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Required Reading</th>
<th>Supplemental Resource</th>
<th>Guest Interview</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Nov. 10</td>
<td>The technological underpinnings of positive peace</td>
<td>Meier, “The Rise of Digital Humanitarians”</td>
<td>TBD</td>
<td>Bruce Taylor</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Nov. 17</td>
<td>PeaceTech</td>
<td>Choi-Fitzpatrick, “Drones for Good”</td>
<td>TBD</td>
<td>Althea Middleton-Detzner</td>
<td>Survey #3 due</td>
</tr>
<tr>
<td>11</td>
<td>Nov. 24</td>
<td>Conflict on the project team</td>
<td>TBD</td>
<td>Kutch, “What productive conflict can offer a workplace”</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Dec. 1</td>
<td>Engineers as social innovators</td>
<td>Riley, “We’ve Been Framed!”</td>
<td>Canadian Grand Engineering Challenges</td>
<td>Jeremy Showalter</td>
<td>Last day for campus or community event report</td>
</tr>
<tr>
<td>-</td>
<td>Dec. 8</td>
<td>N/a</td>
<td>N/a</td>
<td>N/a</td>
<td>N/a</td>
<td>Last day for Extended Reading discussion</td>
</tr>
<tr>
<td>-</td>
<td>Dec. 17</td>
<td>N/a</td>
<td>N/a</td>
<td>N/a</td>
<td>N/a</td>
<td>Final Exam due; last day for publication</td>
</tr>
</tbody>
</table>
Course Concept Map:

By Katherine Walker (PACS 315 class of 2020)
Required Reading Bibliography:


Supplemental Resources:

Extended Reading Bibliography:


[Unless otherwise noted, print or online editions of all books are available from the UWaterloo Library]