Draft Course Outline

Biochemistry 4455G - Translational Concepts in Cancer Biology
The translation of cancer research discoveries into clinical practice, emphasizing critical thinking, research design, evaluation of data from the literature and ethics. Students will engage with community partners associated with cancer research, patient support and care, and will work on a team project relevant to the partners’ needs.

Antirequisite(s):
Prerequisite(s): Biochemistry 4450A
Corequisite(s):
Pre-or Corequisite(s):
Extra Information: 3 lecture/tutorial hours per week; 0.5 course.

Instructors (tentative):
Dr. David Rodenhiser (Course Coordinator)
Associate Professor, Departments of Biochemistry, Paediatrics and Oncology
Office: Victoria Hospital/LRCP A4-134 (drodenhi@uwo.ca)

In recent years, profound advances across multiple disciplines have led to an improved understanding of cancer biology and the delivery of advanced multi-disciplinary cancer care. Biochemistry 4455G provides undergraduate students with state-of-the-art knowledge of the complex field of cancer research via the delivery of information related to translational aspects of cancer treatment, in which knowledge discovered at the lab bench is translated into treatments that benefit cancer patients.

Biochemistry 4455G is a Community Engaged Learning course, in which students work in small groups with community partners associated with cancer research, support, and care on projects directly relevant to the needs of patients. Partnering organizations are identified and coordinated through Community Service Learning @ Western at The Student Success Centre.

A notable aspect of Biochemistry 4455G is the use of WALS (the Western Active Learning Space; http://www.uwo.ca/wals/). WALS is a technology-enabled active learning environment combining face-to-face and online learning through a variety of active learning strategies. The WALS environment encourages levels of interaction, engagement and knowledge retention by students through hands-on collaborative learning, content-sharing and collaboration enabled through BBC and Western’s OWL LMS backbone.

Learning Outcomes

After successfully completing Biochemistry 4455G, students will be able to:
1. Define and describe the theoretical and practical nature of current issues that underscore new cancer treatments under development.
2. Engage in project-based community-engaged learning with community partners and understand how cancer-related issues affect cancer patients, their families and the healthcare system.
3. Work in teams to develop an implementation program in conjunction with the community
partner.
4. Communicate complex information related to cancer to members of the public, including the
community partner.
5. Identify, describe, and analyze career opportunities in the field of cancer biology.

Schedule and Tentative Content

Week 1 Course Introduction and Orientation I: Lecture content will focus on state-of-the-art
understanding of cancer as a complex set of diseases, and general concepts of cancer treatment.
Week 2 Course Introduction and Orientation II: Lecture content will include insights on the
multidisciplinary nature of the cancer research and the clinical care enterprise, as well as the
spectrum of patient-centered clinical care and psychosocial support.
Week 3 “SPEED DATING” Introductory meetings with community partners
Week 4 TOPIC 1: To Be Determined (TBD) in discussions with community partners
(all topics include class discussions and assigned readings)
Week 5 TOPIC 2: (TBD)
Week 6 TOPIC 3: (TBD)
Week 7 Progress Reports and ‘Ignite’ Presentations
Week 8 TOPIC 4: To Be Determined (TBD) in discussions with community partners
Week 9 TOPIC 5: (TBD)
Week 10 TOPIC 6: (TBD)
Week 11 PRESENTATIONS: Teams 1, 2 & 3
Week 12 PRESENTATIONS: Teams 4, 5 & 6
Week 13 Course Overview, Reflections and Feedback

Potential Topics: General Content and Context

The cohort of community partners who agree to mentor our learner groups in Biochemistry
4455G will include clinician and basic science colleagues, cancer survivor groups, patient
advocates and community partners identified and coordinated through Community Service
Learning @ Western at The Student Success Centre. The specific mentors will likely vary yearly
and, while the specific sets of expertise provided by these community partners may vary
accordingly, their foundational focus on cancer will provide a consistent basis for the particular
topics to be offered to our learners.
Topics will emphasize translation of research discoveries into clinical practice through reading,
evaluating and the critique of current oncology research from the basic science and clinical
oncology literature. Topics will integrate the molecular genetic basis of cancer, general concepts
of imaging, application of standard and novel treatment modalities, the development, enrollment
and outcomes of clinical trials, cancer biology as a discipline encompassing patient-centered,
cross-disciplinary, research-based clinical care. These topics will be discussed and evaluated
with our learners through the lens of our community partners.
Course Materials

No textbook is required. Readings from the basic science and clinical oncology literature will be assigned as appropriate.

Evaluation

Evaluation is based on both individual performance and quality of contributions, as well as the activities undertaken within the small teams undertaking the community-oriented projects. Fifty percent (50%) of the grade is based on individual performance and 50% on team performance. To reflect their integral importance to the course, community partners will provide assessments of up to 20% of the students’ final marks in the course.

<table>
<thead>
<tr>
<th>Grade type</th>
<th>Grade Component</th>
<th>Evaluator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual performance 55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>In-class participation (attendance, discussion)</td>
<td>Professor/TA</td>
</tr>
<tr>
<td>10%</td>
<td>Participation – communication, preparation, contribution, respect of others</td>
<td>Peer evaluation</td>
</tr>
<tr>
<td>5%</td>
<td>Individual Ignite talk presentation</td>
<td>Professor/TA</td>
</tr>
<tr>
<td>15%</td>
<td>Quizzes – based on assigned readings</td>
<td>Professor/TA</td>
</tr>
<tr>
<td>5%</td>
<td>Critical Reflection</td>
<td>Professor/TA</td>
</tr>
<tr>
<td>15%</td>
<td>Community engagement</td>
<td>Community partner</td>
</tr>
<tr>
<td>Team performance 45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td>In-class team presentation</td>
<td>(75% prof/TA, 25% class)</td>
</tr>
<tr>
<td>10%</td>
<td>Deliverable (e.g. Ignite, Video; Brochure)</td>
<td>(75% prof/TA, 25% class)</td>
</tr>
<tr>
<td>5%</td>
<td>Implementation report / group grade</td>
<td>Community partner</td>
</tr>
<tr>
<td>20%</td>
<td>Implementation report</td>
<td>Professor</td>
</tr>
</tbody>
</table>

The following evaluations will be provided to students prior to the deadline to withdraw from the course without penalty: Quiz #1 (10%), assessment of Ignite Talk deliverable (5%), and the interim assessment of participation (5%).

Biochemistry 4455G will model our evaluation of students’ performance in ‘community engagement’ after similar established courses such as HS4711 (Gerontology in Practice): ‘The community partner will provide each student individually and every team with a grade based on three criteria: (1) Good working habits, (2) Acceptance and positive response to constructive criticism, and (3) Focus on learning and serving’.