Health Sciences 3E03 – Advanced Inquiry in Health Sciences: Blood
2018-2019
Wednesdays - 2:30 PM- 5:20am - MDCL-3016

INSTRUCTOR/FACILITATOR:

Dr. William P. Sheffield, PhD
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INTRODUCTION: WHAT IS THIS COURSE?

In this course we approach the theme of “Blood” as a focus for inquiry-based learning. Why “Blood”?

• Blood is a rich area for biological inquiry. Blood flowing through the circulatory system is essential for health and alterations to blood flow and blood composition underlie many serious diseases. Blood contains multiple kinds of cells, thousands of proteins, numerous dissolved gases, and a plethora of metabolites and hormones. Blood can transmit infectious disease. Blood transfusion can restore health and save lives. The preservation of blood components for later transfusion is limited by storage lesions.

• Blood can be approached from many other perspectives in addition to the strictly biological: clinical; social; personal; ethical; cultural; political; economic; and in terms of broad health policy.

• My area of research expertise involves blood (specifically plasma and plasma proteins and to a lesser extent red blood cells and platelets) and I have been a member of the staff of Canada’s national blood transfusion service since 1989. I’ve been part of the Faculty of McMaster University since 1992 and part of the management team at Canadian Blood Services since 2007. I can use my expertise and experience to guide and assist your inquiry, encouraging you to focus on aspects of blood that interest you.

Possible topics for discussion and exploration could include (but are not limited to):

- The composition and function of blood (including types of blood cells, plasma and plasma proteins, hemostasis, host defense, hematopoeisis, stem cells and bone marrow, menstruation, cord blood);
- Diseases of the blood (including anemia, thalassemia, sickle cell disease, hemophilia, immunodeficiency, thrombosis, blood-borne infectious diseases, lymphomas, leukemias);
- Blood groups (including their genetic basis and role in selecting compatible blood for transfusion);
- Blood products and their clinical uses;
- The blood system in Canada;
- Screening donors and blood donations;
- Historical perspectives on blood and blood transfusion;
- Ethics, policy-making, and risk management in the blood system;
- Personal, political, cultural, religious and social meanings of blood.

LEARNING OBJECTIVES:

- To provide you with an opportunity to explore the place of blood in the health sciences and society;
- To provide practice in the art of finding and assessing information and recognizing its limitations;
- To provide an opportunity to work responsibly in a group;
- To develop your inquiry skills with respect to problem solving and professional communication;
- To maintain or acquire confidence and skill in oral and written presentation.
**GRADING AND EVALUATION:**

The grading scheme for the course is shown below:

<table>
<thead>
<tr>
<th>Component (in approximate order of when the activity begins)</th>
<th>Nature</th>
<th>Comments</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Physiological and clinical aspects of blood</td>
<td>Peer teaching group project (4 persons)</td>
<td>You will select a topic related to the <strong>biology</strong> of blood and inspired by either the first half of the CBS Record of Donation (ROD) (Questions 1-14) (Project 1) or from Topic List 1 for research, research updates, and a group presentation given to the class “live”. You will receive graded feedback on your first research update (5%) and on the group presentation (25%).</td>
<td>30% (5% on first research update, 25% on presentation)</td>
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<tr>
<td>6Ps Personal Portfolio</td>
<td>Individual project</td>
<td>The 6Ps of inquiry are: <strong>Personal awareness</strong>; <strong>problem identification</strong>; <strong>problem solving</strong>; <strong>professional communication</strong>; <strong>peer collaboration</strong>; and <strong>personal and peer evaluation</strong>. All activities in 3E03 will give you an opportunity to develop these skills. The Personal Portfolio requires you to track progress towards personal goals during the course. It is not intended to be something that can be fully composed just before the due date. You will declare (via e-mail) 2 personal goals linked to one or more of the 6Ps and a brief description of how you will track progress on these goals by the end of the course. You will receive ungraded feedback on your declaration. At the end of the course you will submit your portfolio for assessment. Its format is up to you. Please note that there is no specific credit for group feedback in the grading scheme unless you choose to make it part of your 6Ps Personal Portfolio. The Portfolio is the only part of the course that focuses on your development and may or may not have anything to do with the science of blood.</td>
<td>20%</td>
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<tr>
<td>Reflections on the social and cultural meanings of blood</td>
<td>Individual project</td>
<td>After a class discussion led by the Instructor in Week 2 (“Resolved that the cultural meanings of blood are metaphors for genetics”) you will choose to write either a short reflection or a term paper (see definitions below) inspired by the social and cultural meanings of blood or by any other aspect of the science of blood. You must identify your choice on the title page or equivalent opening part of your submission.</td>
<td>20%</td>
</tr>
<tr>
<td>Policy, ethics, screening, and risk in the blood system</td>
<td>Group project (4 persons, same group)</td>
<td>You will select a topic related to the <strong>intersection of blood risk management and social justice</strong> inspired by the second half of the CBS ROD (Questions 15-30) or from Topic List 2 (Project 2) to research. You will give two informal updates to the class (no graded feedback), and contribute to a shared collaborative resource. This is intended to be either a PowerPoint presentation or an essay that a hypothetical peer student from your year could access and learn from, if they were intrigued by your selected subject. It will not be presented “live”.</td>
<td>30%</td>
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REFLECTION VERSUS TERM PAPER – WHAT’S THE DIFFERENCE?

A reflection is also known as a reflective essay. There’s a pretty good one page comparison table between an “essay/report” (what I’m calling a term paper, by which I mean a scholarly paper that organizes what is known and what is not known about a particular topic, in an objective manner) and a piece of “reflective writing” that can be found at http://edshare.soton.ac.uk/12264/1/FY-RSW3ResourceReportsAndEssaysVSReflection.pdf.

This description is quite useful as well: https://penandthepad.com/reflective-essays-differ-analytical-essays-5713.html. If you are uncertain about which option you want to select, please discuss this further with your Instructor (Dr. Sheffield).

DEADLINES

Course components will be due on the dates listed below. These dates are also integrated into the Course Schedule on Page 3 of this Outline. Four of the five due dates relate to days on which you or your group must submit something on LearnLink for assessment; the fifth due date refers to the day on which group presentations will be given in class for assessment by the Instructor.

<table>
<thead>
<tr>
<th>Date</th>
<th>Assignment Due</th>
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<tbody>
<tr>
<td>September 20</td>
<td>Submission Due: Declare plan for 6P Portfolio (via e-mail to Dr. Sheffield, no specified format)</td>
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<tr>
<td>October 18</td>
<td>Assignment Due: Reflection/Term paper inspired by Week 2 Discussion (submit on LearnLink)</td>
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<tr>
<td>October 24</td>
<td>Group Presentations ((5 X 20 minutes + up to 10 minutes for questions) on Project 1 (Warning – this session could go past 5:20 PM) (assessed by Dr Sheffield)</td>
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<tr>
<td>December 6</td>
<td>Assignment Due: Shared Collaborative Resource (submit on LearnLink)</td>
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<tr>
<td>December 18</td>
<td>Assignment Due: 6 Ps Personal Portfolio (submit on LearnLink)</td>
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<tr>
<td>Week</td>
<td>Date</td>
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| 1    | September 5  | • Introductions, course overview, identification of groups  
• Mind map exercise: Baseline of class knowledge and interests in blood  
• LECTURE: (Dr. Sheffield) “Products and Patients” – Excerpts from a CBS training module used to emphasize the link between product quality and patient outcomes  
• Initial brainstorming of ideas for peer teaching by groups |
| 2    | September 12 | • GUEST SPEAKERS: Jonida Haxhirexha (CBS) + CBS blood recipient speaker (TBA)  
• FACILITATED DISCUSSION: (Dr. Sheffield) – Resolved that cultural meanings of blood are metaphors for genetics (with reference to the work of Laurence Hill, CBS Massey Lecturer and author of “Blood: The Stuff of Life”) |
|      | September 19 | NO CLASS SESSION – Dr. Sheffield will be in Ottawa for a CBS meeting.                                                                                                                                         |
| 3    | September 20 | Submission Due: Declare plan for 6P Portfolio (via e-mail to Dr. Sheffield, no specified format)                                                                                                           |
| 4    | October 3    | • GUEST SPEAKER: Dr. Donald Arnold, MD, FRCP(C), Director, McMaster Centre for Transfusion Research, on the history of blood transfusion  
• Working time (groups) |
| 5    | October 10   | Mid-term recess – No class.                                                                                                                                                                                    |
| 6    | October 17   | LECTURE: Plasma and plasma protein products (Dr. Sheffield)  
• Discussion: Should Canadians be paid for plasma donation?  
• Group working time |
| 7    | October 20   | Assignment Due: Reflection/Term paper inspired by Week 2 Discussion (submit on LearnLink)                                                                                                                     |
| 8    | October 24   | • Group Presentations ((5 X 20 minutes + up to 10 minutes for questions) on Project 1 (Warning – this session could go past 5:20 PM)                                                                       |
| 9    | October 31   | TOURS: Of the McMaster University Medical Centre Transfusion Medicine Labs, led by Dr. Michelle Zeller, MD, FRCP(C), Associate Director, Transfusion Medicine Operations, Hamilton Health Sciences (6 or 7 students at a time – MUST WEAR CLOSED-TOE SHOES)  
• Working time (when not touring) to:  
  o Select topic and start inquiry on Topic 2 |
| 10   | November 7   | LECTURE: Blood disorders (Lecturer To Be Announced)  
• Working time (groups) |
| 11   | November 14  | • Group progress reports (5)                                                                                                                                                                                  |
| 12   | November 21  | • Working time – group consultations (Dr. Sheffield will be available in MDCL 3012 for questions/discussion)                                                                                             |
| 13   | November 28  | • Group progress reports (5)                                                                                                                                                                                  |
| 14   | December 5   | • Working time – group consultations (Dr. Sheffield will be available in MDCL 3012 for questions/discussion)                                                                                             |
| 15   | December 6   | Assignment Due: Shared Collaborative Resource (submit on LearnLink)                                                                                                                                          |
| 16   | December 18  | Assignment Due: 6 Ps Personal Portfolio (submit on LearnLink)                                                                                                                                             |
RESOURCES

This is an inquiry course, so there are no required resources. If you have not already done so, please use the Resource Guide on the Health Sciences Library website that has been specifically designed for the BHSc program at http://hslmcmaster.libguides.com/c.php?g=548781&p=4448445. This will help you to meet my expectations that you will seek out the information that is pertinent to your investigations, subject it to critical scrutiny, and use it appropriately to inform your work.

Mr. Lawrence Hill is a Canadian author and former journalist at the Winnipeg Free Press and The Globe and Mail, and CBC’s Massey Lecturer of 2013. He lives in Hamilton. Among other works he is the author of “Blood: The Stuff of Life”. Mr. Hill was a guest speaker in this course in academic 2016-17 but is unfortunately unavailable this semester. We will consider some of Mr. Hill’s insights on September 12. In preparation for that discussion, before the class on September 12, you will be expected to listen to excerpts of his 5 Massey lectures, each no longer than 3 minutes in length, at http://www.cbc.ca/radio/ideas/the-2013-cbc-massey-lectures-blood-the-stuff-of-life-1.2913671. You may access these short audio recordings at no charge.

RELEVANT POLICIES AND STATEMENTS

Academic Integrity
Academic integrity is a cornerstone of good scholarship. As academics, we should take credit only for ideas and scholarly output that we have created ourselves. Ideas of others that we have incorporated into a new work of synthesis or discovery must be credited to their originators. Students and Faculty at McMaster must comply with the University policy on Academic Integrity, which can be found at https://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf. It is your responsibility to understand what constitutes academic dishonesty and comply with this policy.

I have served as a Faculty Adjudicator (Health Sciences) for Academic Integrity for both undergraduate and graduate students and I can personally attest to how seriously the University takes academic dishonesty. I've had the experience of exonerating students when I did not find evidence to support the charges against them, and I have also had to impose penalties upon students who clearly committed academic offenses described in the Policy. Academic dishonesty includes plagiarism (submitting work that is not one’s own), cheating by using unauthorized aids in examinations, undermining the examination process by inappropriately sharing exam questions, collaborating inappropriately (e.g. using another student’s submissions from last year's course as your own in this year’s course), sabotaging other students or attempting to create a disadvantage for them, and improper collusion (e.g. submitting positive peer evaluations of each other irrespective of the quality of the work).

The most common offense is plagiarism. Plagiarism is defined in part in the Policy as the submission of “academic work that has been, entirely or in part, copied from or written by another person without proper acknowledgement or for which previous credit has been obtained”. If you incorporate the ideas and/or data from a source into your presentation or essay, you have to cite the source. If you incorporate the exact words of an author (usually more than 5 consecutive words) you have to use quotation marks or other formatting to communicate this to the reader. We will have a discussion of appropriate citation and quotation practices early in the course to make absolutely certain that we all have a shared understanding of what should and should not be done, notwithstanding our obligation to follow the Academic Integrity Policy.

Accommodation for Students with Disabilities
Students who require academic accommodations should contact Student Accessibility Services (SAS) at X28652 or sas@mcmaster.ca. The details of the University’s Policy on Academic Accommodation of Students with
Disabilities can be found at http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf.

**Policy on Late Submissions**
I expect you to adhere to the deadlines listed in the Course Outline so that we can remain on track and accomplish our goals for the semester. I will modify them across the board if you present me with a good reason (e.g. “Dr. Sheffield, we all face a major deadline in a required course on the same day as your 3E03 deadline.”). The due date listed in the Course Outline means by 11:59 PM on that day unless otherwise specified. Late material will be penalized 5% per day for a maximum of 10 days. After that point, if you submit the material before April 1, 2018, I will evaluate it using no more than a 50% penalty.

For individual work, I am willing to allow each student one “flex day”, with no questions asked, for assignments. In other words, you can be up to 24 hours late on one individual assignment in the course. Group work is not eligible for this flexibility.

Students who miss deadlines for medical reasons should follow the procedures outlined at https://www.mcmaster.ca/msaf/ to obtain extensions with no penalties. Please note that students who are unable to make deadlines due to religious observances should consult the relevant University policy at: https://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-Observances.pdf.

**CLASSROOM POLICIES**
The classroom in which we meet, and its virtual extensions, must be positive, constructive spaces. We are all responsible for contributing to and sustaining such a constructive environment. Ideas can and should be challenged, constructively, but never in a manner that makes an individual student feel personally attacked, diminished, or isolated.

- We should be present and engaged. Please limit your use of cell phone to break times and otherwise silence ringers and notification sounds; I will do the same.
- We should show respect for one another by using preferred names and pronouns and inclusive language. If your preferred name and pronoun are not the ones listed in Mosaic, please let me know; otherwise I have no way of knowing if I am not addressing you in the way you prefer.
- It is a given that overtly racist, sexist, homophobic, ableist, or other forms of oppressive conduct will not be tolerated. Sometimes language that is more subtly discriminatory (but is in very common usage) detracts from the learning experience as well. We should avoid terms such as “crazy”, “insane”, or “lame” when we mean “illogical” or “unsupported by evidence” or “unreasonable” or “very poorly justified”. There is no reason to add to the challenges of those dealing with mental or physical health issues by using such terms. If we err in this way (me included) the correct course of action is to bring this lapse to the speaker’s attention in a polite and non-judgmental way.
- Vigorous discussion is welcome and intellectual disagreement is not necessarily a bad thing – provided that our classroom remains a constructive environment. As your facilitator it will be my responsibility to manage our classroom and the course in a balanced and ethical way mindful of the above points.