

Office of Undergraduate Education

**T CORE 122F: Introduction to Science**

**“Diseases That Changed the World”**

**Spring 2016**

Course Information

(The course schedule is on the last page of this syllabus)

**Class Times:** MWF, 9:30-10:50AM, WCG 209

**Instructor:** Jutta Heller, Ph.D.

**Office Location:** SCI 206

**Office Phone:** 253-692-4316

**E-mail:** jheller3@u.washington.edu

* The best way to get in touch with me is via email, as I check it regularly during the day, evenings, and even on weekends (sometimes). While I will do my best to get back to you as soon as possible, don’t expect a prompt reply after-hours or on weekends.
* E-mail Policy: <http://www.tacoma.washington.edu/policies_procedures/E-mail_Policy.pdf>

**Walk-in Office Hours:** Mondays 11AM-12:30PM; Tuesdays 10:15 -11:15AM, other times by appointment. Location: SCI 206

**Please take advantage of my office hours.** I really want to help you understand the material and will be more than pleased to talk with you. A willingness to ask questions is the hallmark of a mature, serious student. I am here to help you. You have to do your part, though, and make the effort to come talk to me. And please don’t wait until mid-quarter when you’ve fallen way behind. Start early.

Course Description

This course will investigate human diseases that significantly affected the course of history. We will consider the biology, transmission and treatment of these diseases, as well as their historical, medical, ethical and social impact on world history.

Core

The Core program consists of a coordinated series of courses that represent the various disciplines in the university. This course, along with the others in your cohort, fulfills one of the university’s general education requirements in each of the areas of knowledge plus composition. The courses are designed to both support and challenge you to develop the critical thinking, writing, research, and analytical skills you’ll need at UWT while introducing you to relevant topics in the social sciences, humanities, and sciences.

Learning Objectives

*ABILITY TO APPLY THE PROCESS OF SCIENCE*

* Understand science is evidence based and grounded in the formal practices of observation, experimentation, and hypothesis testing
* Understand and apply basic principles in experimental design
* Identify problem-specific methodologies
* Gain hands-on experience collecting data to draw conclusions
	+ Observations and procedures– importance of documentation
* Evaluate scientific information and the methods used to generate the information

*ABILITY TO USE QUANTITATIVE REASONING*

* Understand that mathematics underpins science
* Generate and interpret tables and graphs

*BILITY TO UNDERSTAND THE RELATIONSHIP BETWEEN SCIENCE, MATH AND SOCIETY*

* Understand science/math as a human endeavor in which all people can participate
* Understand how societal issues influence the direction of science and math
* Understand how science and math influence our everyday lives
* Build a sense of civic responsibility

*COMMUNICATION/SELF EXPRESSION*

* Formulate an original thesis-driven argument and sustain it in both written and verbal communication.
* Express ideas clearly in writing and speaking in order to synthesize and evaluate information before presenting it.
* Identify, analyze, and summarize/represent the key elements of a text.

*GLOBAL PERSPECTIVE*

* Think outside of cultural norms and values, including their own perspectives, to critically engage the larger world.

Course Web Page on Canvas

The T CORE 122 homepage is on Canvas. You can get to Canvas from the main UWT webpage at <http://www.tacoma.uw.edu/>, then mouse over “Tools” at the top and select “Canvas” from the menu that appears. You should be automatically enrolled in the course and see it listed on your “Dashboard”. The Canvas course page has the course syllabus, lecture slides, additional readings, important announcements and handouts, and other fun and useful information that may be added over the course of the quarter. *Be sure to check the Canvas site frequently for announcements and uploaded material.* Let me know if you have any trouble with this and we can figure it out together.

Required Texts and Materials

* Book: Sherman IW. 2007. Twelve Diseases That Changed Our World. Washington (DC): ASM Press.
* Additional materials posted on Canvas.
* A calculator – does not need to be fancy, but should **NOT** be attached to your cell phone.
* Internet access (computer lab or personal computer).

Course Requirements & Grading

<http://www.tacoma.uw.edu/enrollment-services/grading-policies>

The course grading scheme is set up in such a way that missing just one or two small things will not have a huge impact on your grade, but missing several will!

***Assignments***

Read each assignment description (excluding in-class assignments) *well before* the due date and ask your instructor for clarification if needed. Assignments are to be completed individually, unless otherwise stated. Your instructor may not be able to access certain formats on Canvas, thus electronic submissions must be .doc, .docx, or .pdf. Graded assignments cannot be redone for a grade increase.

Did you know that you and other UW students can get a **FREE subscription to Microsoft Office 365**? Visit https://www.washington.edu/itconnect/wares/uware/microsoft/microsoft-office-365-proplus/

**Pre/Post Surveys = 30 points**

You will complete two surveys at the beginning (“pre”) and end (“post”) of the quarter. These assignments are worth a total of 30 pts and will be used to help science faculty assess:

* how this class impacts your science-related assumptions (TOSRA)
* how this class impacts your scientific literacy skills (TOSLS)
* how this class impacts your understanding of diseases and their impact on history and society

A third survey is short and biographical and is due at the end of the first week of the quarter for extra credit.

**In-class activities & exercises** = **30 points**

* There will be exercises to be completed during most lectures. They may also be based on answering questions or completing exercises that I ask you to work on in groups during lecture. This will help me find out what questions and unclear points still remain at the end of lecture. Since these are measures of participation and exist to encourage attendance and engagement, there will be no make-up for missed in-class activities.

**Homework**

* **Responses (blogs): 4 x 10 points each = 40 points.**You must respond to the prompts provided throughout the quarter. These prompts are based on a topic or an issue we have discussed in class. Your blog (200-300 words) can describe the issue being addressed, including personal feelings and opinions, as well as what you think the societal impact is. Keeping a blog (aka “free write”) will allow you to develop key skills in critical analysis and writing communication. Assessment rewards thoughtful analysis in your own words and clear, succinct writing.
* **Problem sets = 20 points.**
These assignments are designed to help you practice concepts from the readings and lecture.

**Quizzes and Exams**

* **Two (2) quizzes: 15 points each (30 pts total)**
* **Two (2) exams, including final: 50 points each (100 pts total)**

The quizzes and exams may cover any material related to subjects discussed in lecture, class discussions, or readings. The quizzes and the exams will be a mixture of problems, open-ended questions, and even multiple-choice or fill-in-the-blank questions.

**Authentic Lab Experience = 15 points**

* As an “introduction to science” course, it is critical for you to experience the scientific process rather than just hearing about it. We will conduct an experiment that looks at the antibiotic resistance in *Staphylococcus epidermidis* bacteria isolated from your skin. Part of this laboratory experiment will be to submit your hypotheses and results in a report. A detailed description of this assignment will be posted on Canvas.

**Final Project = 50 points**

* Early in the quarter you and one or two of your peers will select a disease of local or global concern and research it from as many angles as you can: molecular, medical, social, psychological, ethical, legal, historical, etc, and develop a public health initiative (or plan) to educate the public about disease prevention, screening, etc. You get to choose the disease, but it has to be one that was NOT covered in detail in class! As part of this assignment you will also do research on one or more scientists who were/are significantly involved in the discovery or research of this disease. You will be completing various parts of this assignment with instructor guidance throughout the quarter.
* **You will be submitting three regular reports on the progress of your research. Think of these progress reports as “drafts”. Each progress report is worth 10 points.**
* This group project will result in either
	+ an oral presentation to the class that will allow you to develop speaking skills
	+ **or** a video – such as a Public Service Announcement (PSA) or documentary. UWT staff will help you learn how to film and edit your video, so no technical knowledge is required (see <http://www.tacoma.uw.edu/information-technology/multimedia-and-video-production>)
	+ **or** a poster presented at the Spring Student Showcase in early June (date TBD).
* Either of these assignments is worth 50 points. A detailed description of this assignment will be posted on Canvas.

**Points per assignment:**

Surveys (TOSLS & TOSRA) 30 pts (8.45%)

Quizzes (2 x 15 pts) 30 pts (8.45%)

In class exercises 30 pts (8.45%)

Homework assignments (Blogs and Problem sets) 60 pts (16.9%)

Exams (2 x 50 pts) 100 pts (28.2%)

Final Project Progress reports (3x10 pts) 30 pts (8.45%)

Lab Experiment Report 15 pts (4.2%)

Participation 10 pts (2.8%)

Final Project 50 pts (14.1%)

**TOTAL POINTS POSSIBLE 355 pts**

**Group Work**

Group work is to be equally distributed among the members of your group. Please inform your instructor if a group member is not doing his/her share of the work and you have tried unsuccessfully to resolve the issue. You are still responsible for turning in a complete Final Project even if one or more of your group members drops the class or fails to participate. Those who do not contribute will receive a score of zero for that assignment.

**Absences from exams**

If you know in advance that you will have a legitimate conflict with a scheduled exam, please let me know in writing during the first week of the course the nature of your conflict and which date it applies to. We may be able to arrange to take the exam 1-2 days in advance. If you miss an exam for a legitimate but unforeseeable reason such as documented illness (one that reasonably prevents you from making it to the exam or a highly infectious and contagious disease), a makeup exam will be conducted at the next possible date and convenience of the instructor. Do not assume that you will be able to make up an exam if 1) it is not a documented medical emergency or 2) you do not provide me with written notice during the first week of classes. Please refer to the section below entitled “Disability Services” for special needs.

## Final Grades

Your final grade will be calculated using the formula below. You will receive a point grade on all exams, exercises, and assignments that can be easily converted to a final percentage and a UW decimal grade using a standard UW Grade Schedule (see below). Any questions regarding final grades will be discussed at the beginning of the next quarter so that your instructor may enjoy her break. There will be no rounding up and requests to be "bumped up" to a higher grade will be ignored.

**Incomplete**

<http://www.washington.edu/students/gencat/front/Grading_Sys.html#I>

An Incomplete is given only when the student has been in attendance and has done satisfactory work until within two weeks of the end of the quarter and has furnished proof satisfactory to the instructor that the work cannot be completed because of illness or other circumstances beyond the student's control. A written statement of the reason for the giving of the Incomplete, listing the work which the student will need to do to remove it, must be filed by the instructor with the head of the department or the dean of the college in which the course is given.

**Grading Scale**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Letter** | **% cutoff** | **UW decimal grade** |  | **Letter** | **% cutoff** | **UW decimal grade** |  | **Letter** | **% cutoff** | **UW decimal grade** |
| A | 97-100 | 4.0 |  | B- | 83 | 2.8 |  |  | 71 | 1.6 |
|  | 94-96 | 3.9 |  |  | 82 | 2.7 |  |  | 70 | 1.5 |
| A- | 93 | 3.8 |  |  | 81 | 2.6 |  | D+ | 69 | 1.4 |
|  | 92 | 3.7 |  |  | 80 | 2.5 |  |  | 68 | 1.3 |
|  | 91 | 3.6 |  | C+ | 79 | 2.4 |  |  | 67 | 1.2 |
|  | 90 | 3.5 |  |  | 78 | 2.3 |  | D | 66 | 1.1 |
| B+ | 89 | 3.4 |  |  | 77 | 2.2 |  |  | 65 | 1.0 |
|  | 88 | 3.3 |  | C | 76 | 2.1 |  |  | 64 | 0.9 |
|  | 87 | 3.2 |  |  | 75 | 2.0 |  | D- | 63-62 | 0.8 |
| B | 86 | 3.1 |  |  | 74 | 1.9 |  |  | 61-60 | 0.7 |
|  | 85 | 3.0 |  | C- | 73 | 1.8 |  | E | 59-0 | 0.0 |
|  | 84 | 2.9 |  |  | 72 | 1.7 |  |  |  |  |

**Late Work**

If you have a serious personal issue and need an extension on an assignment, please contact me **in advance** to make alternate arrangements and get a possible no-penalty extension. I reserve the right not to grant extensions. I do not grant extensions after due dates have passed. Late submissions of lab worksheets or assignments will not be accepted without an extension given prior to the due date. A late submission of the paper will be penalized at a rate of 1/3 off per day that it is late and is worth no points after 3 days, including weekends and holidays. I will not give you feedback on late assignments and papers (including drafts) and they will not necessarily be graded in a timely manner.

**Electronic Devices**

Electronic devices (including, but not limited to, cell phones, pagers, laptops, and personal digital assistants) may only be used in the classroom ONLY with the permission of the instructor. Activities that are non-relevant to the course, such as reading/writing emails, social networking, facebooking, surfing the web, playing games, and texting, are considered disruptive activities when class is in session AND WILL NOT BE ALLOWED. I will not hesitate to publicly ridicule students who do not comply with this policy.

**Classroom etiquette**

To ensure a positive, effective learning environment, you must always act and speak respectfully to one another and to me.

* Please arrive promptly, and do not pack up your things or leave until the lesson is over. If an exception is unavoidable, choose your seat unobtrusively.
* Attendance is expected at all class periods. If you are absent from class, it is your responsibility to check on announcements made while you were absent.
* Your fellow classmates and your instructor will all appreciate it if you do not give them your contagious disease. Please do stay home from class if you are unwell and suspect it may be catching. It is your responsibility to contact your instructor to come up with a make-up plan.
* Class participation is critical and expected. Contribute to the learning atmosphere, ask/answer questions, engage in group work, and come prepared. Preparation may include having done any assigned readings, having had adequate sleep and/or caffeine, and having a positive attitude so you are *mentally* present - not just physically! **Please review the Participation Rubric posted on Canvas.**
* Fully engaging in the course means that you should NOT be doing work for other classes, or socializing (in person or electronically) during our class time. If I deem your behavior disruptive, I may ask you to leave. If you are bothered by someone else, feel free to speak to them (respectfully) and don’t hesitate to tell me.
* We will be engaging in a laboratory experiment in the middle of the quarter.
* Turn cell phones (pagers, laptops with alarms) off before you enter lecture, especially for exams!!!
* Do not bring children, friends or other visitors to class without talking to me about it first.
* In return you can expect from me to show you as much respect as you show me. I am always available to meet with you if there is anything you wish to discuss with me. Come to my office hours or make an appointment. I will also do my very best to return graded exams and assignments to you as soon as possible.

**Missing class**

Make responsible decisions about your own and public health. Please contact me *as soon as possible* ifyou cannot make it in to a quiz or an exam for a *legitimate* reason like inclement weather, personal/family member illness, or a university-sponsored absence, so we can make alternate arrangements for making up what you missed. Please do not wait until the end of the quarter to contact me about missed assignments, as it gets progressively harder to arrange for a makeup!

Study Groups

Study groups can be a powerful learning experience and can make studying more efficient, effective, and fun. Focused study with others allows you to pool your ideas and see material from a different perspective. It also gives you a chance to organize, verbalize, and explore your own ideas or questions and get feedback from the group. I strongly encourage you to form study groups that meet regularly to discuss the subject matter of the course.

To form a study group:

* Talk to people in class to find others with similar schedules and goals.
* Aim for 2 – 4 students per group. Larger groups may not give everyone a chance to participate fully; smaller ones may not generate enough ideas or feedback.
* Choose a convenient, comfortable place to meet, with minimal distractions. Schedule the first meeting early in the quarter, to clarify the goals of the group (to go over weekly study questions, to study for exams, to discuss the reading and/or ideas generated by the class, etc). I recommend a weekly meeting, but other arrangements can work well, too. Make verbal commitments not to schedule other activities during the agreed on meeting times.
* At the first meeting, discuss how long you will meet each time, the kinds of activities you think would be most helpful, if you would prefer a structured group that might assign particular duties or questions to each person or a group that is more free-form, etc. If you find that the group you’ve signed up for doesn’t have compatible goals or preferences, find another.

Teaching and Learning CenterThe TLC provides a wide variety of instructional resources and support for teaching and learning at UW Tacoma. Teaching and learning are ongoing processes that take practice, commitment, and time. We are here to assist you in achieving your goals and provide math/quantitative, writing, science, and other tutoring services. <http://www.tacoma.washington.edu/tlc/>

Academic Standards/Plagiarism

All student work must be free of plagiarism. Plagiarism is defined in the University catalog and in the Student Handbook. Consult your professor if you have any questions.

A major part of your experience in the class will be reading, synthesizing, and using the knowledge and ideas of others. It is the responsibility of the faculty to help you in this process and to be certain you learn to credit the work of others upon which you draw. To plagiarize is to appropriate and to pass off, as one's own ideas, writing or works of another. Plagiarism is no less of a misconduct violation than vandalism or assault. Ignorance of proper documentation procedures is the usual cause of plagiarism. This ignorance does not excuse the act. Students are responsible for learning how and when to document and attribute resources used in preparing a written or oral presentation.

For more information, please refer to the “Student Academic Responsibility” document prepared by the Committee on Academic Conduct in the College of Arts and Sciences, UW Seattle:

<http://depts.washington.edu/grading/pdf/AcademicResponsibility.pdf>

Library

The UWT Library provides resources and services to support students at all levels of expertise. We guide students through the research process, helping them learn how to develop effective research strategies and find and evaluate appropriate resources. Science Librarian: Katie Monks, monksk@uw.edu. For more information about the Library and its services, see: <http://www.tacoma.washington.edu/library/>

**Student Health Services**

Student Health Services (SHS) is committed to providing compassionate, convenient, and affordable health care for University of Washington Tacoma students, from care for illness and minor injury to women’s health and preventative medicine, including vaccination services. Insurance is not required. Funded by UW Tacoma student fees, office visits are provided free of charge. Treatment plans may incur costs, such as medications, labs, or vaccines, most of which are offered at discounted rates. For more information, please visit www.tacoma.uw.edu/shs or email at uwtshs@uw.edu. If you have questions or would like to schedule an appointment, please call (253) 692-5811 or stop by SHS at the Laborer’s Hall on Market Street.

Counseling Center (Student Success)

The Counseling Center offers short-term, problem-focused counseling to UW Tacoma students who may feel overwhelmed by the responsibilities of college, work, family, and relationships. Counselors are available to help students cope with stresses and personal issues that may interfere with their ability to perform in school. The service is provided confidentially and without additional charge to currently enrolled undergraduate and graduate students. To schedule an appointment, please call 692-4522 or stop by the Student Counseling Center (SCC), located in MAT 354.

<http://www.tacoma.washington.edu/studentaffairs/SHW/scc_about.cfm/>

Disability Support Services (Student Success)

The University of Washington Tacoma is committed to making physical facilities and instructional programs accessible to students with disabilities. Disability Support Services (DSS) functions as the focal point for coordination of services for students with disabilities. In compliance with Title II of the Americans with Disabilities Act, any enrolled student at UW Tacoma who has an appropriately documented physical, emotional, or mental disability that "substantially limits one or more major life activities [including walking, seeing, hearing, speaking, breathing, learning and working]," is eligible for services from DSS. If you are wondering if you may be eligible for accommodations on our campus, please contact the DSS reception desk at 692-4522. <http://www.tacoma.washington.edu/studentaffairs/SHW/dss_about.cfm/>

Campus Safety Information: <http://www.tacoma.uw.edu/administrative-services/campus-safety>

Safety Escort Program

For your safety, UW Tacoma encourages students, faculty, staff and visitors to use the Safety Escort Program. Campus Safety Officers are available to walk you to your car or other campus destinations during the following hours: Monday - Thursday — 6 a.m. to 11 p.m.; Friday — 6 a.m. to 10 p.m. The service is free of charge. During busy periods, the Campus Safety Officer may ask you to meet in a common location as to facilitate escorting multiple people. Dial 253-692-4416 to request a Safety Escort.

In case of a fire alarm

Take your valuables and leave the building. Plan to return to class once the alarm has stopped. Do not return until you have received an all clear from somebody "official," the web or email.

In case of an earthquake

DROP, COVER, and HOLD. Once the shaking stops, take your valuables and leave the building. Do not plan to return for the rest of the day. Do not return to the building until you have received an all clear from somebody "official," the web‚ or email.

Inclement Weather

Call (253) 383-INFO to determine whether campus operations have been suspended. If not, but driving conditions remain problematic, call the professor's office number. This number should provide information on whether a particular class will be held or not, and/or the status of pending assignments. If the first two numbers have been contacted and the student is still unable to determine whether a class will be held, or the student has a part-time instructor who does not have an office phone or contact number, call the program office number for updated information. Information on many of these resources can be found at: <http://www.tacoma.uw.edu/teaching-learning-technology/e-syllabus-campus-information-resources-policies-expectations>

**Course Schedule\***

**\* Subject to change at instructor’s discretion.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Wk**  | **Day/Date** | **Class Topic** | **Readings & Assignments** |
| 1  | Mon Mar 28 | Introduction – Meet & greet |   |
| Wed Mar 30 | Course Overview: Syllabus, Canvas, etc.  |   |
| Fri Apr 1 | Introduction to the Biology: Cells & Molecules | **Biographical Survey due (Canvas)** |
| 2  | Mon Apr 4 | “How I Learned to Love the Library” with Katie Monks**MEET in SNO 136 (to the right of the reference desk)** | **TOSLS, TOSRA surveys due (Canvas).** |
| Wed Apr 6 | The spread and impact of diseases  |   |
| Fri Apr 8 | Introduction to Bacteria |  |
| 3 | Mon Apr 11 | Faculty Candidate guest lecture | **Response/Blog #1 due**  |
| Wed Apr 13 | The Bubonic Plague and the Spread of Eurasian diseases to the Americas | Sherman Ch. 5 |
| Fri Apr 15 | **Quiz 1;** Cholera | Sherman Ch. 3 |
| 4  | Mon Apr 18 | Cholera, cont’d | **Final Project Progress Report #1 Due** |
| Wed Apr 20 | Tuberculosis and Antibiotic resistance | Sherman Ch. 7 |
| Fri Apr 22 | Antibiotic Resistance lab exercise, Part 1**Meet in SCI 217. Wear lab-appropriate clothing.** |  |
| 5 | Mon Apr 25 | Antibiotic resistance lab exercise, Part 2**Meet in SCI 217. Wear lab-appropriate clothing.** | **Response/Blog #2 due** |
| Wed Apr 27 | **Midterm Exam** |   |
| Fri Apr 29 | Antibiotic resistance lab exercise, Part 3; How to make a graph in excel**Meet in SCI 217. Wear lab-appropriate clothing.** |  |
| 6 | Mon May 2 | Eukaryotic Pathogens and their diseases: Malaria | Sherman Ch. 8, **Final Project Progress Report #2 Due** |
| Wed May 4 | Malaria, cont’d.  |  |
| Fri May 6 | Malaria, cont’d: View slides of pathogens under microscope**Meet in SCI 217. Wear lab-appropriate clothing.** |  |
| 7  | Mon May 9 | Introduction to Viruses  | **Response/Blog #3 due**  |
| Wed May 11 | **Quiz 2**; Viruses and their Diseases: Influenza | Sherman Ch. 10 |
| Fri May 13 | Viruses and their Diseases: Smallpox | Sherman Ch. 4 |
| 8 | Mon May 16 | Viruses and their Diseases: HIV/AIDS | Sherman Ch. 11 |
| Wed May 18 | HIV/AIDS, continued | **Final Project Progress Report #3 Due** |
| Fri May 20 | The history and origin of vaccinations | Sherman, pp. 57-67 |
| 9 | Mon May 23 | Vaccinations: what’s the argument about? | Additional materials |
| Wed May 25 | Introduction to Genetics |  |
| Fri May 27 | Genetic Disorders: Hemophilia and the Royal House of Europe | **Response/Blog #4 due;** Sherman Ch. 1 |
| 10  | **Mon May 30**  | **Memorial Day – NO CLASS**  |   |
| Wed June 1 | Group prep time |   |
|  | Fri June 3 | Oral Presentations | **Final Project due** |
| 11 | **Wed June 8** | **FINAL EXAM, 8-10:05 AM, WCG 209** |  |

**Disclaimer: Topics, readings, due dates and the rest of this syllabus may be revised or updated as the quarter unfolds.** Such changes will be announced in class, and additionally an updated version of this document may be posted on Canvas. It is your responsibility to keep abreast of these changes! *Absence is not an excuse for ignorance of these changes***. If you need to take time off to observe religious holidays, please let me know. I am happy to accommodate your request.**