

**TCORE 112D Introduction to Science**  
**BREAKING EARTH'S HOLD: UNDERSTANDING FLIGHT AND SPACE TRAVEL**  
**Wtr 2014, 5 credits SLN 19733**  
**Instructor: Prof. Linda Dawson**  
**Librarian: Carole Svenson**

<b>Class Times</b>	Tu/Th ADMC BB107	10:20-12:25pm
<b>Office Hours</b>	M 10:05-11; Th 12:30-1:30 or by email or by appt.	
<b>Contact</b>	Prof. Linda Dawson SCI 220	<a href="mailto:lidawson@u.washington.edu">lidawson@u.washington.edu</a> 253-692-5763

### **Course Description**

This course will explore topics for both flight and space travel. The basics of airplane design will be explored. The focus will then move from flying in air to flying in space. Physical concepts such as gravity and the earth's rotation will be studied in order to propose ways of leaving the earth's atmosphere. The basics of rocket design will be explored. Water rockets will be built and launched. The components of the Space Shuttle and its mission will also be explored. A visit to the Museum of Flight is planned.

### **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**

- Inquiry and Critical Thinking
  - Inquiry & Problem Solving: collect, evaluate, and analyze information and resources to solve problems of answer questions
  - Research methods & application: approach complex issues by taking a large question and breaking it down into manageable pieces
- Communication/Self-expression
  - Analysis: identify, analyze, and summarize/represent the key elements of a text
  - Expression of Ideas: express ideas clearly in writing and speaking in order to synthesize and evaluate information before presenting it
- Global Perspective – Diversity – Civic Engagement

- Global Perspective: interact with concepts, ideas, and processes related to interdependences between personal, local, and global relationships.
- Civic Engagement: interact with concepts, ideas, and processes related to civic engagement
- Quantitative Literacy
  - Use quantitative evidence (including statistics, graphs, etc.) in support of an argument
  - Analyze and evaluate a chart or graph and interpret it (through discussion, a written assignment, etc.)

### Required Texts and Materials

- All students must have access to Catalyst and online course materials
- All students must have access to the UW library online system.
- Civil Air Patrol. 2008. Aerospace: The Journey of Flight, 2<sup>nd</sup> Edition. Maxwell Air Force Base, Alabama

**Grading:** Your assignments will include a series of writings to include reaction papers, reviews, reports, and analyses of topics explores.

Paper	15%
Quizzes	30%
Homework Assignments	30%
Group Project	20%
Participation	5%

**Late Work:** I do not accept late work except for documented emergencies.

### Grading

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

### Teaching and Learning Center

The 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. For more information about the Library and its services, see:

<http://www.tacoma.washington.edu/library/>

### **Electronic Devices**

Electronic devices (including, but not limited to, cell phones, pagers, laptops, and personal digital assistants) may only be used in the classroom with the permission of the instructor. Activities that are non-relevant to the course, such as checking/sending email, playing games, and surfing the web, are considered disruptive activities when class is in session.

### **E-mail Policy**

[http://www.tacoma.washington.edu/policies\\_procedures/E-mail\\_Policy.pdf](http://www.tacoma.washington.edu/policies_procedures/E-mail_Policy.pdf)

### **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](http://www.tacoma.uw.edu/shs) or email at [uwtshs@uw.edu](mailto: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/](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/](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.

**Course Curriculum Approximate Outline: *This outline is tentative and subject to change***

<b>Wk</b>	<b>Date</b>	<b>Topic</b>	<b>Assigned Reading</b>	<b>Activities</b>	<b>Assignments</b>
1	1/7	Introduction to Flight and Space	Syllabus; Text Chap 1:		
1	1/9	Early Aviation, Basics of Flight	Text Chap 7	Basics of Flight – paper airplanes	
2	1/14	NO CLASS			
2	1/16	Principles of Navigation	Text Chap 7	Map reading and navigation	Quiz 1
3	1/21	Research on Flight	Online materials	Computer Lab	<b><u>Due: Homework 1</u></b>
3	1/23	Research on Aviation around the world	Online materials	Computer Lab	
4	1/28	Rocket Fundamentals	Text Chap 21		Quiz 2
4	1/30	Orbits and Trajectories	Text Chap 22	Orbit activity	
5	2/4	Water Rocket Prep	Online materials	Building water rocket	<b><u>Due: Homework 2</u></b>
5	2/6	Water Rocket Launch		Outside launch	
6	2/11	Definition of Space & the Solar System	Text Chap 24 & 25		Quiz 3
6	2/13	Unmanned Space Exploration: the Space Race	Text Chap 26		
7	2/18	Manned Space Exploration	Text Chap 27		<b><u>Due: Homework 3</u></b>
7	2/20	<b>Field Trip to Museum of Flight</b>			
8	2/25	Commercial Space Exploration Part 1 – Peer Review Paper	Online materials	Peer Review	Quiz 4
8	2/27	Writing - Peer Review		Peer Review	Due: Draft Paper
9	3/4	Future of Aerospace	Online materials		
9	3/6	Project work		Practice Project Presentations	Due: Draft Presentation
10	3/11	Final Project Presentations			Final Projects Due before Presentation
10	3/13	Final Project Presentations			Final Projects Due before Presentation
11	3/17				<b>Final Paper Due</b>