Science and Technology, 7 & 8

2019-2020

Teacher	Email	Website	Office Hours
Mr. C. Woodford	woodford@cita.utoronto.ca	www.cita.utoronto.ca/~woodford	MWF 11am-1pm

General Information

Description

This course is intended to continue your understanding, knowledge, and application of science and technology concepts and to enable you to think scientifically. We will be doing a lot of hands-on learning, and will aim to do plenty of demos and labs in class with about 1 lab every week. Participation, applying yourself, and having fun are the keys to success!

Expectations and Goals

Assess:

- the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
- personal, social, economic, and environmental factors that need to be considered in designing and building structures and devices;
- the costs and benefits of technologies that reduce heat loss or heat-related impacts on the environment;
- the personal, social, and/or environmental impacts of a system, and evaluate improvements to a system and/or alternative ways of meeting the same needs;
- the impact of human activities and technologies on the sustainability of water resources.

Investigate:

- interactions within the environment, and identify factors that affect the balance between different components of an ecosystem;
- ways in which heat changes substances, and describe how heat is transferred;
- a working system and the ways in which components of the system contribute to its desired function;
- factors that affect local water quality.

Demonstrate an understanding of:

- interactions between and among biotic and abiotic elements in the environment;
- the relationship between structural forms and the forces that act on and within them;
- heat as a form of energy that is associated with the movement of particles and is essential to many processes within the earth's systems;
- different types of systems and the factors that contribute to their safe and efficient operation;
- the characteristics of the earth's water systems and the influence of water systems on a specific region.

Design and construct:

- a variety of structures, and investigate the relationship between the design and function of these structures and the forces that act on them.

Course Materials

Required Materials

For each class, you will need to have:

• Exercise, binder with loose leaf, etc. for writing on and keeping all of your notes and materials in

• Pen or pencil, something to write with

• Textbook currently being referenced

Required Text

Pearson Investigating Science and Technology 7 Textbook, L. Sander, N. Alexander, M. Carlin, G. Fatkin, D. Herridge, M. Lattner, C. Little, J. Walsh, S. Wohl; **Pearson Investigating Science and Technology 8** Textbook, L. Sander, N. Alexander, M. Carlin, G. Fatkin, D. Herridge, M. Lattner, C. Little, J. Walsh, S. Wohl;

Course Schedule

We will aim to cover 5 units: Form & Function, Heat in the Environment, Systems in Action, Water Systems, and Interactions in the Environment. Each unit will have labs, demos, assignments, tests and projects in a fashion that suits the material and is subject to change. You should expect 2-4 labs (with a lab report!), 2-3 assignments, 1 project, and 1 test per unit. We will also aim to leave ~2 weeks in each term for exploratory lessons on topics that you and your classmates can decide on.

Note that notes and supplementary material will be made available on my website (www.cita.utoronto.ca/~woodford) several days before we cover the material. Please take the time to read the relevant textbook subchapter and/or online notes before coming to class.

Book & Chapter	Topic	Term & classes
Pearson 8, Ch. 10, 11, 12	Water Systems	Term 1, 18 classes
Pearson 8, Ch. 4, 5, 6	Systems in Action	Term 1, 12 classes
	Student-chosen material (I)	Term 1, 6 classes
Pearson 7, Ch. 4, 5, 6	Form and Function	Term 2, 10 classes
Pearson 7, Ch. 10, 11, 12	Heat in the Environment	Term 2, 15 classes
	Student-chosen material (II)	Term 2, 6 classes
Pearson 7, Ch. 1, 2, 3	Interactions in the Environment	Term 3, 25 classes
	Student-chosen material (III)	Term 3, 6 classes

Marking Scheme

Component	Grade Value
Assignments (est. 18)	25%
In-class work (group and individual), conversation	15%
Unit Tests (est. 5)	20%
Unit Projects (est. 5)	20%
Labs & Lab reports (est. 12)	20%

Assignments, projects, and lab reports will be due on the hour at the start of class, and will be considered late otherwise. The penalty for lateness is 15% per day. Assignments, projects, and lab reports more than 1 page double-sided should be stapled before being submitted.

"Late to class" will apply to any student who is not in their seat with all required materials at the ready at 5 past the hour that class starts (ie. 10:05am).