**INTA 2040 A: Science, Technology, and**

**International Affairs**

Fall 2017 Tu/Th 9:30 – 10:45 am

Location: IC 217

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Office hours: most Tu,Th 11-12; by appointment

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This syllabus is current as of August 15, 2017

**Objectives and Description:**

**Key questions to keep in mind over the entire semester: How did modern societies come to be what they are today? How is that changing?**

By the end of this course:

1. The students will demonstrate an understanding of how geography and environment influence the development and diffusion of technology.

1. The students will demonstrate an understanding of how geography, environment, and technology influence the development of human societies around the world.
2. The students will demonstrate an understanding of how geography, environment, science and technology (S&T) influence the forms, conduct, and outcomes of a wide range of conflicts.
3. The students will demonstrate an understanding of how S&T affect, and are affected by, political and strategic relationships among empires and nations.
4. The students will demonstrate the ability to describe the enabling and causal relationships between S&T and international affairs across different topic areas.

This will be accomplished through the study of human geography, history, and societal development through a cumulative sequence of “revolutions” (sometimes called eras or ages) that are at least partly defined by new and enormously important groups of technologies, namely:

1. The Cognitive Revolution

(To include the early materials and tools....)

1. The Agricultural Revolution
2. The Scientific and Industrial Revolutions

(To include the ages of machines, exploration and discovery, atomic, and flight)

1. The Information Revolution (?)

The primary and cumulative outcomes of all of these revolutions are still with us and will continue to define and determine our future.

**Coverage of major technology streams**:

Over the course of the semester we will use some class time to periodically cover the following long term, civilization building, technology streams: communications, energy, food, health, materials, propulsion, transport.

**Primary texts**:

Jared Diamond, ***Guns, Germs, and Steel: The Fates of Human Societies,*** Norton, NY, 1999. Chapters in the schedule below will be designated Dn, where n = chapter number as in the ToC.

Yuval Noah Harari, ***Sapiens***, HarperCollins, NY, 2015. Chapters will be designated Hn.

Martin van Creveld, ***Technology and War: From 2000 BC to the Present***, Free Press, NY, 1989. Chapters will be designated Cn.

These books are available at the campus B&N and via Amazon.com.

Please have at least half of each week’s readings done before the first class of that week.

**Grading:**

30% Class participation, attendance, short writing assignments

35% Midterm (E1)

35% Final Exam (E2)

We value our in-class time together and will try to make the most of it. Please prepare a name tent card for yourself and bring it to every class. Your name should be in large, dark, block letters against a light background. While in class, you are not to have any open screens, e.g., laptops, iPads, iPhones. We use class time to help hone listening skills and verbal exchanges.

The short writing assignments will be explained in more detail in class. None will be more than a single page. Starting with the first class of Week 3 (Sep 5), two short statements of 1-2 complete sentences each of a “revelation” or a “burning question” that came to you from the assigned reading for that week. Then do the same for the first class of each of the following weeks. These will be used to help direct and stimulate class discussion for part of the second class of that week.

Reminder: Georgia Tech operates on an honor system. We take it seriously.

**Weekly Schedule**:

Week 1

Aug 22 Science, Technology, and Human Societies through the Ages:

A Preview. What we hope to accomplish in this course and how we are

going to do it. Definition of “technology.”

Personal biosketch assignment.

Aug 24 Homo Sapiens and Global Diffusion

Start bringing your tent cards. Please bring them every day.

Readings for this week: H1. DPrologue, D1.

Week 2

Aug 29 and 31 The Cognitive Revolution, Early Materials and Tools

Personal bio due on the 29th (1 page max)

Discussion of technology streams, initial team selection (to be completed by Week 3)

Readings for this week: H2-3; D2-3

Week 3

Sep 5 and 7 The Agricultural Revolution

Readings for this week: H4-5; D4-7

GT requirement to verify student participation.

Week 4

Sep 12 The Agricultural Revolution

Sep 14 Technology Transfer;
How People Relate to Geography and Environment

Readings for this week: H6-7; D8-11

Week 5

Sep 19 and 21 To the Scientific Age; Technology and War
Great unifying ideas: numbers, measurement, written language, money

Readings for this week: H8-9; D12-13; C1-2

Week 6

Sep 26 and Sep 28 The Unification of Humankind; Technology Enabled Infrastructures Before the Industrial Revolution

Readings for this week: H10-11; D14; C3-5

Week 7

Oct 3 Exploration and Discovery

Oct 5 What have we learned so far this semester?

Readings for this week: H12-13

Week 8

Oct 10 Fall recess

Oct 12 Midterm

 Covers all of Diamond (note: options beyond D14); H1-13; C1-5; all definitions/concepts introduced in class

Week 9

Oct 17 and Oct 19 The Scientific and Industrial Revolutions

 Return and review midterms

Readings for this week: H14-15; C6-7

Week 10

Oct 24 and Oct 26 The Industrial Revolution in the 18th and 19th Centuries. Important machines, industries, and transportation advances. Leading nations.

 (SHOT) The final drop date is at the end of this week.

Readings for this week: H16-17; C8-10

Week 11:

Oct 31 and Nov 2 Technology and Conflict Through World War I

Readings for this week: C11-12

Week 12:

Nov 7 The Age of Flight

Nov 9 The Space Age

Readings for this week: C13-15, C17

Week 13:

Nov 14 The Atomic Age

Nov 16 The Information Age. From writing to the Internet of Things. Being

 connected to everything all of the time.

Readings for this week: H18, C16, C18-20

Week 14:

Nov 21 Critical Infrastructures.

Assignment: Dig up lists of critical infrastructures.

Nov 23 Thanksgiving

Week 15:

Nov 28 Critical infrastructures. Their intersection with

 the information technologies. Critical infrastructure protection.

 CI lists due.

Nov 30 Ubiquitous data collection and surveillance

Week 16:

Dec 5 Last day of classes. Cyberspace as the 5th domain of human activity?

 The animal that became a God?

Readings for this week: H19, H20, H-afterward

Dec ? Final Exam