

APPLIED GENERAL EQUILIBRIUM ANALYSIS
FALL SEMESTER, 2017
<https://www.gtap.agecon.purdue.edu/AgEc618/>

Instructors:

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Course time:

Lectures and lab assignments are offered over the web. Lab assignments are due by Saturday 12 p.m.. *Weekly class discussions take place on Monday from 4:30 – 5:30pm in RAWLS 1071.* As the semester progresses, we may occasionally use the Wednesday slot as need arises, as well as during the final week of classes to permit presentation of student projects.

Office hours:

Wednesday, 4:00 – 5:00 pm, as well as other times by appointment (use email to make appointments). Questions and discussions on the web board are strongly encouraged.

Intended Audience:

PhD students, and MS students with strong a foundation in micro-economics, having an interest in the quantitative analysis of economy-wide issues relating to public policy, marketing and international trade, economic development, resources, technology and the environment.

Prerequisites:

Graduate level microeconomics (ECON 511 or ECON 607 or equivalent).

Readings:

All readings will be available on-line, through the password-protected course website.

Software:

Horridge, M., RunGTAP, Center for Global Trade Analysis, Purdue University, 2009.
Harrison, W.J. and K.R. Pearson, GEMPACK, version 11.1, Center for Policy Studies, Monash University, 2012.

Grading:

Weekly Homework (50% of grade) – These generally take 2-3 hours to complete and they are submitted electronically on a weekly basis. They comprise the core of the coursework.

Midterm Exam (20% of grade). The purpose of this exam is just to ensure that you have absorbed the key lessons of the weekly assignments during the first seven weeks. We will build on this core material in the second half of the course.

Individual presentation and write-up of special project (30% of grade). This is the ‘main event’. In consultation with the instructors, you will choose a topic, thereupon replicating and extending an existing study. You will present your findings during the final week of class. *For a list of studies available for replication, please refer to the Potential Applications List.*

Communication:

The primary out-of-class method of communication for this course will be the class web page and via email to your @purdue.edu account. As a student it is your responsibility to check the class web page and your @purdue.edu email on a frequent basis at least once every 24 hours.

Emergencies:

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor’s control. I will post such changes on the class web page and will send an email to your @purdue.edu account. **YOU ARE EXPECTED TO READ YOUR @PURDUE.EDU EMAIL ON A FREQUENT BASIS.**

Students with Disabilities:

If you have a disability that requires special academic accommodation, please make an appointment to speak with me within the first three weeks of the semester in order to discuss any adjustments. It is important that we talk about this at the beginning of the semester. Please note that university policy requires all students with disabilities to be registered with the [Office of the Dean of Students](#) before classroom accommodations can be provided. The information is provided at <http://www.purdue.edu/drc/>

Academic Integrity:

University policy on academic misconduct is clear - academic dishonesty in any form is strictly prohibited. Academic misconduct includes citing someone else’s work as your own, using “cheat sheets” or sharing your answer with someone else. Anyone found to be cheating or help someone else cheat will be referred to the Dean of Students for disciplinary action which may include dismissal from the University. A guide to academic integrity is provided by the Dean of Students office: <http://www.purdue.edu/odos/aboutodos/academicintegrity.php> .As a student you should be familiar with this material.

Course Description:

This course has two objectives. First, and foremost, the course seeks to *provide students with a conceptual framework for looking at issues from an economy-wide perspective*. It is hoped that this will remain with participants *regardless of whether they choose to conduct their own applied general equilibrium (AGE) analyses in the future*. This is accomplished via a set of lectures, homework assignments, and structured computer simulation exercises. These are designed to provide insights into the basic mechanisms and key parameters that determine inter-sectoral linkages in the economy. They are also structured in a way that emphasizes connections to the literature in production, consumption, marketing, trade, resources, welfare and environmental economics. As such, it often helps students to conceptualize the connections between some of their other, more specialized, coursework.

The other objective of this course is to *expose participants to an operational framework (including theory, software and data) for conducting global AGE analysis*, which they can draw upon in future research efforts. They will exercise this framework in the context of a class project to be written up and presented to the class at the end of the semester. This project will involve replication of an existing applied general equilibrium application, followed by an agreed-upon, extension of the published work.

The computer assignments and the course project will all be implemented in the context of the RunGTAP software interface (Horridge, 2009) to GEMPACK. This is a Windows environment for conducting applied general equilibrium analysis with the Global Trade Analysis Project (GTAP) model, designed to allow users to focus on economics with the programming details being largely taken care of behind the scenes. The use of this tool has largely eliminated the time required to get participants “up to speed” on the software front. RunGTAP runs GEMPACK programs “behind the scenes”. GEMPACK is an algebraic modeling language (similar to GAMS) that permits the user to write out the model in a transparent fashion. It is specifically designed for application to large-scale partial and general equilibrium models in a policy-oriented environment. Students will become expert users of these tools, but the design of the course is such that *they will not need to become expert programmers in GEMPACK*.

The GTAP Data Base which we will use in this course is amenable to a wide range of applications. It is currently in use by more than 15,000 researchers. Many of the leading national and international policy-oriented agencies are also using it, including: World Bank, the WTO, the UN Conference on Trade and Development, the European Commission, the US International Trade Commission, and US Departments of Agriculture, Commerce, Energy and Environmental Protection. Current GTAP applications span a wide range of areas, including: trade policy reform, regional economic integration, resource and environmental economics, impacts of technological progress, climate change impacts and mitigation, and international migration. There is a searchable database of GTAP applications on the web at:

https://www.gtap.agecon.purdue.edu/resources/res_list.asp?SearchField=Type&SearchValue=GTAP+Application

Course Requirements

The central tool for learning in this course will be weekly homework assignments designed to reinforce the material covered in the lectures. In the second half of the semester, there will two additional assignments, but the focus will quickly turn to the class projects. These projects will involve the replication of an existing, published study, thereupon extending it in some meaningful way. This final presentation and write-up of this work will be in lieu of a final exam.

Course Overview

Part I: Closed Economy Analyses: Weeks 1-7

- Week 1: Getting Started
- Week 2: Overview of the Closed Economy Model
- Week 3: Producer Behavior
- Week 4: Household Behavior
- Week 5: Aggregation across Agents and Market Responses
- Week 6: Welfare Analysis in a Second-best Setting
- Week 7: Review and take-home exam

Part II: Open Economy Analysis: Weeks 8-9

- Week 8: Fall Break, followed by Introduction to the Multi-region model
- Week 9: Global Sectors, Macroeconomic Closure, and Welfare Decomposition

Part III: Climate Change: Weeks 10-11

- Week 10: Introduction to Integrated Climate Assessment and Mitigation Policy
- Week 11: Estimating the Impacts of Climate Change

Part IV: Firm Heterogeneity in General Equilibrium: Weeks 12-14

- Week 12: The Melitz Model in Applied General Equilibrium
- Week 13: Firm Heterogeneity in the GTAP framework
- Week 14: Parameter Estimation and Calibration (followed by Thanksgiving Break)

Part V: Synthesis and Presentations: Weeks 15-16

- Week 15: Putting AGE analysis in Perspective: Wrapping things up
- Week 16: Student Presentations

COURSE SYLLABUS

In the course outline that follows each week's activities may involve seven different types of tools for learning. They are listed in the order in which we recommend they be done.

Lectures: These are both voice-over *PowerPoint* lectures, as well as lecture notes intended to be carefully read and digested. They are designed to introduce the topics of the week.

Illustrative simulation: This offers an opportunity to get your hands "dirty" with a simulation, before all of the material is covered. This can be a useful motivating factor for delving more deeply into the material.

Required Readings: Must be read.

Supplementary Readings: These are optional.

Homework: Homework assignments are due by midnight Saturday. This gives us time to correct them so that we can discuss any weaknesses/challenge areas the following Monday. Check the course calendar on the website for updates in case assignment due dates are changed.

Weekly Discussion: Each week there will be a session at which students can discuss the assignments, lectures and readings, as well as raising other issues. Ongoing discussion will be facilitated via the website bulletin board.

Special Project: During the second half of the semester, there will be weekly tasks associated with participants' special projects, culminating in presentation of their own extension of an existing study.

Part I: Closed Economy Analysis

Week 1. Getting Started

Lectures:

- Lecture 1: Introduction to AGE Analysis: Why General Equilibrium?
- Lecture 2: Motivation for Starting with a One-Region Model

Illustrative Simulation:

Simulation 1: Introduction to RunGTAP for the One Region Model: OneGTAP Tutorial

Required Readings:

- Hertel, Thomas W., 1990. "General Equilibrium Analysis of Agriculture: What Does It Contribute?" *Journal of Agricultural Economics Research*, Summer Issue, Vol. 42, No.3.

Supplementary Readings:

- Kehoe, P.J. and T.J. Kehoe, 1994. "A Primer on Static Applied General Equilibrium Models," *Quarterly Review*, Federal Reserve Bank of Minneapolis, Spring Issue, pp. 2-16.

Homework:

Assignment 1: Viewing of Database and Numeraire Simulation.

Week 2. Overview of the Closed Economy Model

Lectures:

- Lecture 1: Overview of the Closed Economy, GTAP Framework
- Lecture 2: Accounting Relationships in the One Region Model
- Lecture 3: Price Linkage Relationships
- Lecture 4: Detailed Listing and Derivation of Accounting Equations
- Lecture 5: Tax/subsidy Conventions
- Lecture 6: Model equations
- Lecture 7: Detailed Listing and Derivation of Price Linkages

Illustrative Simulation:

Simulation 1: Output Tax Shock: Viewing OneGTAP Output

Required Readings:

- Brockmeier, M. “A Graphical Exposition of the GTAP Model”, sections 1 - 3, GTAP Technical Paper No.8, Center for Global Trade Analysis, Purdue University. This can be downloaded from: http://www.gtap.agecon.purdue.edu/resources/tech_papers.asp

Supplementary Readings:

Participants should read one of the following surveys of applied general equilibrium analysis to get a feel for how these models have been used in the past:

- Francois, J. F. and C.R. Shiells, 1994. “AGE Models of North American Free Trade”, chp. 1 in Francois and Shiells (eds.) *Modeling Trade Policy: Applied General Equilibrium Assessments of North American Free Trade*, New York: Cambridge University Press.
- Hertel, T., 2002. “Applied General Equilibrium Analysis of Agricultural and Resource Policies”, Chapter 26 in *Handbook of Agricultural and Resource Economics*, edited by Bruce Gardner and Gordon Rausser, Amsterdam: North Holland Press.
- Robinson, S. 1998. “Multisectoral Models of Developing Countries: A Survey”, *Handbook of Development Economics*, Chenery and Srinivasan, (eds.), Amsterdam: North Holland Press.

Homework

Assignment 2: Proving Walras Law in the One Region Model

Week 3. Producer Behavior

Lectures:

- Lecture 1: Introduction to Producer Behavior
- Lecture 2: General and Particular Restrictions on a Production Function
- Lecture 3: Notes on the Restrictions on the Production Function
- Lecture 3: The Nested CES Production Function: Theory and a Specific Example
- Lecture 5: Notes on the CES Functional Form
- Lecture 6: A Specific Production Function

Illustrative Simulation:

Simulation 1: Conditional (Output Constant) Producer Response to a Change in Input Price

Required Readings:

- Hertel, T. and M. Tsigas. 1997. "Structure of GTAP", chapter 2, pages 38-46, in *Global Trade Analysis: Modeling and Applications*, edited by Thomas W. Hertel. New York: Cambridge University Press, online at: https://www.gtap.agecon.purdue.edu/products/gtap_book.asp.

Supplementary Readings:

- Keller, W.J. 1980. "Firm Behavior", Chapter 5 in *Tax Incidence: A General Equilibrium Approach*. Sections 5.1-5.6, 5.8 and appendix pp. 59-84, Amsterdam: North Holland Press.
- Gohin, A. and T. Hertel. 2003. "A Note on the CES Functional Form and Its Use in the GTAP Model" GTAP Research Memorandum No. 02, Center for Global Trade Analysis, Purdue University, USA.

Homework

Assignment 3: Producer Behavior – Conditional Elasticities of Demand

Week 4. Household Behavior

Lectures:

- Lecture 1: Overview of Final Demand
- Lecture 2: General and Particular Restrictions on Consumer Demand
- Lecture 3: Treatment of Government and Savings Demands
- Lecture 4: CDE Expenditure Function
- Lecture 5: Final Demand in the Presence of Non-homothetic Separability

Illustrative Simulation:

- Simulation 1: Household Response to a Price Change.
- Simulation 2: Introduction to AnalyseGE Software.

Required Readings:

- Hertel, T. and M. Tsigas. 1997. "Structure of GTAP", chapter 2, pages 46-51 and chapter 4, pages 133-147, in *Global Trade Analysis: Modeling and Applications*, edited by Thomas W. Hertel. New York: Cambridge University Press.
- Hertel, Thomas W. 2001. "Notes on Final Demand in the Presence of Non-homothetic, Weak Separability", Center for Global Trade Analysis, Purdue University (PDF from course website Module 4).

Supplementary Readings:

- McDougall, R.M. "A New Regional Household Demand System for GTAP," GTAP Working Paper no. 14, Center for Global Trade Analysis, Purdue University. This can be downloaded from: http://www.gtap.agecon.purdue.edu/resources/working_papers.asp
- Howe, H. 1975. "Development of the Extended Linear Expenditure System from Simple Savings Assumptions", *European Economic Review* (6):305-310.
- Keller, W.J. 1980. "Household Behavior", Chapter 4, sections 4.1-4.3 and appendix in *Tax Incidence: A General Equilibrium Approach*. Amsterdam: North Holland Press.

- Keller, W.J. 1980. "Public Consumption", Chapter 8 in *Tax Incidence: A General Equilibrium Approach*. Sections 8.1-8.6, pp. 131-148, Amsterdam: North Holland Press.

Homework

Assignment 4: Analysis of Consumer Behavior

Week 5. Aggregation across Agents and Market Responses

Lectures:

- Lecture 1: Supply Response in the one region model
- Lecture 2: Notes on Supply Response
- Lecture 3: Market Demand
- Lecture 4: Equilibrium Demand Elasticities & Dalton's Law

Supplementary Lectures:

- Lecture 5: Links between AGE Analysis and input-output/social Accounting Matrix based Analysis
- Lecture 6: Partial vs. General Equilibrium Closures

Illustrative Simulation:

- Simulation 1: Supply Response to a Change in Producer Prices
- Simulation 2: Market Demand Response to a Price Change

Required Readings:

- Hertel, Thomas W. 2011. "The Global Supply and Demand for Agricultural Land in 2050: A Perfect Storm in the Making?," *American Journal of Agricultural Economics*. Focus on the technical appendix and interpretation of equation (1) in the text. The appendix may be found here: https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=3428

Supplementary Readings:

- Keller, W.J. 1980. "Dalton's Law" chapter 3: in *Tax Incidence: A General Equilibrium Approach*. Sections 3.1-3.6, pp. 17-29, Amsterdam: North Holland Press.

Homework

Assignment 5: Markets: General Equilibrium Incidence of an Output Subsidy

Week 6: Welfare Analysis in a Second-best Setting

Lectures:

- Lecture 1: Equivalent Variation as a Measure of Welfare Change
- Lecture 2: Welfare Decomposition

Illustrative Simulation:

- Simulation 1: Welfare Change due to an Output Tax

Required Readings:

- Huff and Hertel, 1996 "Decomposing Welfare Changes in the GTAP Model", GTAP Technical Paper #5, part 1, Center for Global Trade Analysis, Purdue University. This can be downloaded

from: http://www.gtap.agecon.purdue.edu/resources/tech_papers.asp

Supplementary Readings:

- Keller, W.J. 1980. "The Excess Burden in a General Equilibrium Model" chapter 7 in *Tax Incidence: A General Equilibrium Approach*. Sections 7.1-7.7, pp. 103-130, Amsterdam: North Holland Press.

Homework

Assignment 6: Welfare Effects of a Manufactures Subsidy

Week 7: Take-home exam due Oct 6, Friday 12pm , followed by Fall Break

Part II: Open Economy Analysis

Week 8: Introduction to the Multi-Region model

Lectures:

- Lecture 1: Overview
- Lecture 2: Accounting Relationships
- Lecture 3: Price Linkages
- Lecture 4: Armington Structure
- Lecture 5: Summary of Model Equations

Supplementary Lectures:

- Lecture 6: Data Base Overview and Discussion of the Domestic Data Bases
- Lecture 7: Bilateral Merchandise Trade Data
- Lecture 8: Other International Data Sets

Required Readings:

- Brockmeier, M. "A Graphical Exposition of the GTAP Model", section 4, GTAP Technical Paper No. 8, Center for Global Trade Analysis, Purdue University. This can be downloaded from: http://www.gtap.agecon.purdue.edu/resources/tech_papers.asp
- Remainder of chapter 2 in GTAP book, also chapters 3 - 5.

Supplementary Readings:

- Badri N.G., A. Aguiar, and R. McDougall, Eds. 2015. *Global Trade, Assistance, and Production: The GTAP 9 Data Base*, Center for Global Trade Analysis, Purdue University, chapters 1-3 (also browse through the more detailed chapters so that you know what is available) on the web at: https://www.gtap.agecon.purdue.edu/databases/v9/v9_doco.asp

Homework

Assignment 7: Exercises with Behavioral Equations

Week 9: Global Sectors, Macroeconomic Closure, and Welfare Decompositions

Lectures:

- Lecture 1: Global Transport Sector
- Lecture 2: Global Bank
- Lecture 3: Multi-region Welfare and Terms of Trade Decomposition

Supplementary Lectures:

Lecture 4: International Transport Margins by Mode

Required Readings:

- Huff and Hertel, 1996 “Decomposing Welfare Changes in the GTAP Model”, GTAP Technical Paper #5, part 2. This can be downloaded from:
http://www.gtap.agecon.purdue.edu/resources/tech_papers.asp
- McDougall, R.A. 1993. “Two Small Extensions to SALTER”, SALTER Working Paper No. 12, Industry Commission: Canberra, Australia.

Homework

Assignment 8: Welfare Decomposition of a Trade Policy Shock

Part III: Global Economic Analysis of Climate Change

Week 10: Introduction to Integrated Climate Assessment and Mitigation Policy

Required Readings:

- McDougall, R. and A Golub, 2009. "GTAP-E: A Revised Energy-Environmental Version of the GTAP Model", GTAP Research Memorandum No. 15, Center for Global Trade Analysis, Purdue University, USA,
https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=3D2959
- Blanford, G.J., E. Kriegler and M. Tavoni, 2014. “Harmonization vs. fragmentation: overview of climate policy scenarios in EMF27,” *Climatic Change*, 123:383-396, DOI: 10.1007/s10584-013-0951-9

Supplementary Reading:

- Nordhaus, 2014. “Estimates of the Social Cost of Carbon: Concepts and Results from the DICE-2013R Model,” *Journal of the Association of Environmental and Resource Economists*, 1(1/2)273-312. DOI: 10.1086/676035.
- Interagency Working Group on Social Cost of Carbon. 2010. Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866. February. United States Government.
https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf

Week 11: Estimating the Impacts of Climate Change

Required Reading:

- Hsiang, Solomon, Robert Kopp, Amir Jina, James Rising, Michael Delgado, Shashank Mohan, D. J. Rasmussen, et al. 2017. “Estimating Economic Damage from Climate Change in the United States.” *Science* 356 (6345): 1362–69. doi:10.1126/science.aal4369.
- Moore, Frances C., Uris L.C. Baldos, Thomas W. Hertel, and Delavane Diaz, 2016. “New Science of Climate Change Impacts on Agriculture Implies Higher Social Cost of Carbon” *Nature Communications*, under third round review.

Supplementary Reading:

- Hertel, T., W., M. B. Burke and D. B. Lobell, 2010. “The Poverty Implications of Climate-Induced

- Crop Yield Changes by 2030”, *Global Environmental Change*.
- Hertel, T., W. and D. Lobell, (2014) “Agricultural Adaptation to Climate Change in Rich and Poor Countries: Current Modeling Practice and Potential for Empirical Contributions”, *Energy Economics*.

Part IV: Firm Heterogeneity in General Equilibrium

Week 12: The Melitz Model in General Equilibrium

Lecture:

- Lecture 1: Introduction to firm heterogeneity
- Lecture 2: Incorporating firm heterogeneity into a CGE model

Required Readings:

- Melitz, M. J. 2003. "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica*, 71, 1695-1725.
- Dixon, P., M. Jerie, and M. Rimmer, 2015. "Modern Trade Theory for CGE Modeling: the Armington, Krugman, and Melitz Models", *Journal of Global Economic Analysis*, (1):1:110.

Supplementary Readings:

- Balistreri, E. J. and T. F. Rutherford, 2013. "Computing General Equilibrium Theories of Monopolistic Competition and Heterogeneous Firms," in *Handbook of Computable General Equilibrium Modeling*, ed. by P. B. Dixon, and D. W. Jorgenson. Vol. 1, 1513-1570. <http://inside.mines.edu/~ebalistr/hndbook/hndbook.html>

Week 13: Firm Heterogeneity in the GTAP framework

Lecture:

- Lecture 1: Implementation of firm heterogeneity in GTAP
- Lecture 2: Application of GTAP-HET to the Transatlantic Trade and Investment Partnership (TTIP) Agreement

Required Readings:

- Akgul, Z., N.B. Villoria and T.W. Hertel, (2016) “GTAP-HET: Introducing Firm Heterogeneity into the GTAP Model”, *Journal of Global Economic Analysis*, (1):111-180.

Homework:

- Assignment 9: Trade Policy Analysis in the Firm Heterogeneity Model

Week 14: Parameter Estimation and Calibration of Firm Heterogeneity Models

Lecture:

- Lecture 1: Estimation and Calibration of Firm Heterogeneity Models

Required Readings:

- Ahmad, S. and Z. Akgul, (2017) “Using Power Laws to Identify the Structural Parameters of Trade Models with Firm Heterogeneity”, Economics Working Paper Series 2017-05-E, U.S. International Trade Commission.

Supplementary Readings:

- Hillberry, R. and D. Hummels, 2013 “Trade Elasticity Parameters for a Computable General

Equilibrium Model,” in *The Handbook of Computable General Equilibrium Modeling*, edited by Peter Dixon and Dale Jorgenson, part of the Handbook of Economics Series from Elsevier Publishers.

Part V: Synthesis and Presentations

Week 15: Putting AGE Analysis in Perspective

Required Readings:

- Hertel, T. W., 2012. “Global Applied General Equilibrium Analysis using the GTAP Framework”, in *The Handbook of Computable General Equilibrium Modeling*, edited by Peter Dixon and Dale Jorgenson, part of the Handbook of Economics Series from Elsevier Publishers.
- McDougall, R. A., 1993, *Uses and Abuses of CGE Analysis*, mimeo, Center for Global Trade Analysis, Purdue University, Working Paper No. 5, download from: http://www.gtap.agecon.purdue.edu/resources/working_papers.asp

Week 16: Student Presentations, Synthesis and Course Wrap-up

Assignment Overview

Part I: Closed Economy Analysis: weeks 1-7

- Week 1 - Assignment 1: Viewing of Database and Numeraire Simulation. Due 08/26
- Week 2 - Assignment 2: Walras Law. Due 09/02
- Week 3 - Assignment 3: Producer Behavior – Conditional Elasticities of Demand. Due 09/09
- Week 4 - Assignment 4: Analysis of Consumer Behavior. Due 09/16
- Week 5 - Assignment 5: General Equilibrium Incidence of a Manufactures Subsidy. Due 09/23
- Week 6 - Assignment 6: Welfare Effects of a Manufactures Subsidy. Due 09/30
- Week 7 - Take-home exam. Due 10/06, Fri, 12pm.

Part II: Open Economy: weeks 8-9

- Week 8 - Assignment 7: Exercises with Behavioral Equations. Due 10/14.
- Week 9- Assignment 8: Welfare Decomposition of a Trade Policy Shock (Due 10/21) & Assemble/Test Replication Files.
- Week 10 - Replication Write-up. Due 10/29, Sun
- Week 11 – Work on Extension
- Week 12 - Extension Write-up. Due 11/12, Sun
- Week 13 - Assignment 9: Trade Policy Analysis in the Firm Heterogeneity Model. Due 11/18.
- Week 14 - Draft PPT for class presentations. Due 11/26, Sun
- Week 15 - Final PPT for class presentations. Due 12/03, Sun
- Week 16 - Final Write-up. Due 12/10, Sun.

*All assignments are due on Saturdays.