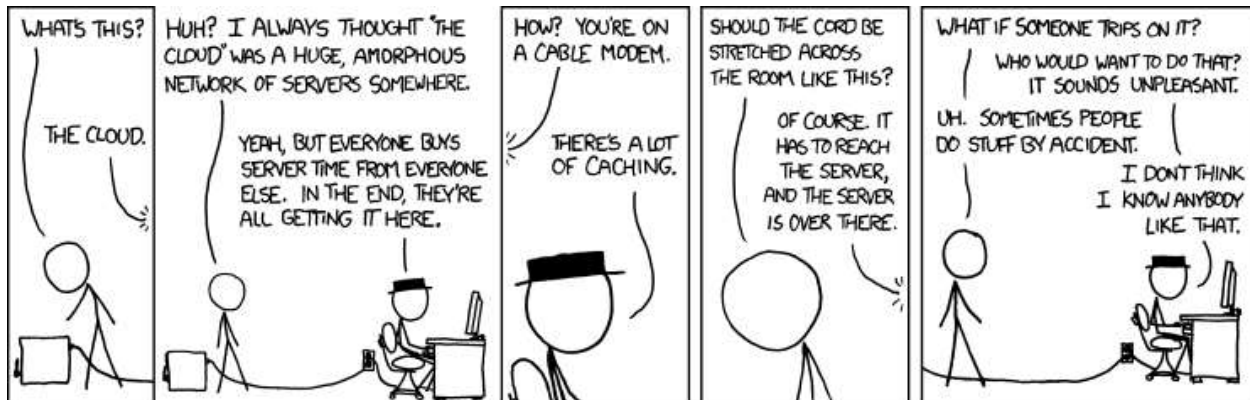


# ITMO 444-01/02 Cloud Computing Technologies

Class Meets Tuesday & Thursday 11:25 – 12:40 – Tech Park South 2030



[Link to campus map](#)

## Faculty Information

Instructor: Jeremy Hajek

Telephone: (630) 296-4012

Office Hours: Monday & Wednesday 10:00 am – 2:30 PM

Email: [hajek@iit.edu](mailto:hajek@iit.edu) – Skype: jeremy.hajek

## Course Catalog Description

Computing applications hosted on dynamically-scaled virtual resources available as services are considered. Collaborative and non-collaborative "cloud-resident" applications are analyzed with respect to cost, device/location independence, scalability, reliability, security, and sustainability. Commercial and local cloud architectures are examined. A group-based integration of course topics will result in a project employing various cloud computing technologies.

3.000 Credit hours

2.000 Lecture hours

2.000 Lab hours

## Prerequisites

ITMD 411 & ITMO 456

## Credits

ITM-enrolled students will receive, upon successful completion of the course, 3 semester hours of credit.

**Laboratory Day, Time, and Place**

Lecture Days, Time & Place: Tuesday and Thursday 11:25 AM to 12:40 PM

Tech Park South room 2030 – Smart Tech Lab

35th and State Street on IIT's Mies Campus, or online via IIT Online.

**Directions:**

The best way to get to TS-2030 (Tech South) Smart Tech lab is to enter via the tower on 35th street. Swipe your hawk card at the desk. Take the elevator to the second floor. Exit the elevator and turn left and head north across the bridge to the Tech South building (the walls will turn orange).

Then at the intersection turn left and you will see the Smart Tech Lab directly ahead, if the doors are open the walls will be green with a blue floor.

**Course Objective and Outcome****Objectives:**

Each successful student will be able to demonstrate building and running cloud-based services on a large scale. They will gain the knowledge of deploying and managing elastic and cloud based applications on industry standard platforms as well as open-source platforms. Students will be prepared with knowledge of Cloud Based Operations and Application Development.

**Outcomes:**

Students completing this course will be able to:

- Be able to explain, document, and implement the fundamental aspects of IaaS, PaaS, SaaS
- Use and administer industry standard cloud resources
- Be able to correctly identify cloud native operations and development methodologies
- Build and deploy elastic scaling applications on a cloud platform
- Understand how to design applications using a cloud native architecture
- Understand web technologies for software deployment

## Course Schedule

Week	Date	Topic/Lab	Homework
1	Aug 21 & 23	Thinking Cloud	Chapter 1
2	Aug 28 & 30	Designing in a Distributed World	Chapter 2 & 3
3	Sept 04 & 06	Designing for Operations/ Service Platforms	Chapter 4
4	Sept 11 & 13	Application Architectures	Chapter 5
5	Sept 18 & 20	Design Patterns for Scaling	Chapter 6
6	Sept 25 & 27	Design Patterns for Resiliency	Chapter 7
7	Oct 02 & 04	Operations in a Distributed World	Chapter 8
8	Oct 09 & 11	Midterm Exam	NA
9	Oct 16 & 18	Cloud Concepts w/AWS	NA
10	Oct 23 & 25	Cloud Concepts w/AWS	NA
11	Oct/Nov 30/01	Cloud Concepts w/AWS	NA
12	Nov 06 & 08	Cloud Concepts w/AWS	Chapter 13, 16, 17
13	Nov 13 & 15	Design Documents & Monitoring	NA
14	Nov 20 & 22	TBA Guest Speaker – 22 <sup>nd</sup> NO CLASS FALL BREAK	TBA
15	Nov 27 & 29	TBA Guest Speaker and Exam Review	TBA
16	Week of Dec 03 <sup>rd</sup>	Final Examination	TBA

### Grading

**Weekly Assignments:** Will be released on the Thursday of class week and due by the following Thursday before the start of class. **No late work can be accepted.**

**Review Questions:** will be issued on Thursday of class week and will be due the following Tuesday 11:59 PM  
**No late work can be accepted.**

### Grading:

**Grading criteria for ITMO 444-01 Live Section students will be as follows:**

A total of 390 points are available

- 10 points per weekly assignments (8 assignments) = 80
- 2 MPs (mini projects) will be outcomes of the lectures and will build upon each other leading to the final project and presentation, worth 50 points each = 100
- 1 Final project worth 50 points
- 1 Final Exam worth 50 points
- 8 Chapter review questions x 10 points each = 80

**Grading criteria for ITMO 444-02 Online Section students will be as follows:**

A total of 360 points are available

- 10 points per weekly assignments (8 assignments) = 80
- 2 MPs (mini projects) will be outcomes of the lectures and will build upon each other leading to the final project and presentation, worth 50 points each = 100
- 1 Final project worth 50 points
- 1 Final Exam worth 50 points

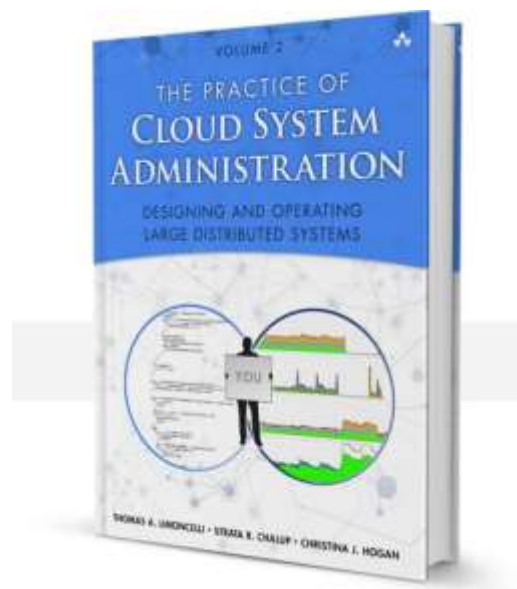
- 8 Chapter review questions x 10 points each = 80

## Grading:

Grading criteria for ITMO 444-01 and 444-02 students will be as follows:

A Outstanding work reflecting substantial effort.....	90-100%
B Satisfactory work fully meeting expectations.....	80-89.99%
C Substandard work not meeting expectations.....	70-79.99%
D Substandard work not meeting expectations. ....	60-69.99%
E Unsatisfactory work .....	0-59.99%

## Text Book



### The Practice of Cloud System Administration: Designing and Operating Large Distributed Systems, Volume 2

ISBN-13: 978-0321943187

Publisher: Addison-Wesley Professional

Publication date: 9/15/2014

Pages: 560

## Blackboard and other technologies

We will use IIT's Blackboard system (<http://blackboard.iit.edu/>) to communicate, submit homework, ask questions, and get feedback. Each student should have been notified of his or her Blackboard account for this course. If you have not been notified, go to above web page where there is contact information. Be familiar with how to use Blackboard.

## Course Requirements:

### Student Responsibilities:

Class attendance and active participation are essential if students are to receive maximum benefit from the class. Participation require preparation including completion of reading, labs, assignments and exams by the due dates. If you cannot attend class or complete

assignments, labs, or exams on time, please let the instructor know beforehand so that we can discuss alternative strategies. It is the student's benefit to use their time wisely whether it is in preparation for class, during scheduled class, or in the lab. When students are in any IIT lab environment, they should abide by the college policies. Questions and comments are welcome.

**Computer:**

You need to maintain access to a computer that is in working condition and that you have administrator access to during the semester.

**Academic Policy:** Any violations of IIT policies regarding academic honesty and or integrity will be referred automatically to the appropriate college authorities for disposition. Please see appropriate pages in the college catalog for definitions and regulations. The minimum penalty for cheating will be a zero for all parties involved on that exam, assignment, lab or quiz. Bottom line: don't do it.

**Withdraw policy:** No longer attending class does not constitute an automatic withdrawal.

**Classroom behavior:** During the class time, considerate conduct by all persons is important to a favorable learning environment. Any infringement on the rights of others to get an education will be dealt with in an appropriate manner. Please set all electronic devices such as cell phones or pages to silent modes. Don't let your phone go off in the class.

**Notes:** If you develop some issue or outside issue develops please come and see me sooner than later. Usually some compromise or accommodation can be reached. Help me to help you solve any problem you may have.

**Code of Academic Honesty**

IIT expects students to maintain high standards of academic integrity. Students preparing for the practice of a profession are expected to conform to a code of integrity and ethical standards commensurate with the high expectations society places on practitioners of a learned profession. No student may seek to gain an unfair advantage over another. The Code of Academic Honesty is explained in the IIT Student Handbook and all students are expected to know and adhere to this code.

**Plagiarism:**

All work you submit in this course must be your own. You must fully attribute all material directly quoted in papers and you must document all sources used in the preparation of the paper using APA- style bibliographic entries. No more than thirty-three percent of material included in any paper may be direct quotes. Students have submitted plagiarized material to me frequently over the last five years and I will not tolerate it. If you submit plagiarized material you can expect to receive a grade of ZERO for the assignment, and it may result in

your expulsion from the course with a failing grade as per the “IIT Code of Academic Honesty” found in the IIT Student Handbook.

Blackboard is a Learning Management System which we will use for our course. You can login to Blackboard at [blackboard.iit.edu](https://blackboard.iit.edu) or through [my.iit.edu](https://my.iit.edu). For information on training classes and tutorial videos see the Google site: <https://sites.google.com/a/iit.edu/blackboard/>

**Our Contract:** This syllabus is my contract with you as to what I will deliver and what I expect from you. If I change the syllabus, I will issue a revised version of the syllabus; the latest version will always be available on Blackboard. Areas with changes will be indicated by a black bar in the right-hand margin of the page.

**Disabilities:** Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me as soon as possible. My office hours are listed on the first page of the syllabus. The Center for Disability Resources (CDR) is located in 3424 S. State St., room 1C3-2 (on the first floor), telephone 312.567.5744 or [disabilities@iit.edu](mailto:disabilities@iit.edu)