

SYLLABUS – *DevOps and the modern IT team*

TCMG 476 — Technical network capstone

Fall 2017

Class: **TH 11:10–12:25 EDCT 616**

Lab: **H 12:45–3:30 EDCT 616**

Course Description and Prerequisites

This course will provide a survey of concepts used to manage a modern IT team, with emphasis on the ideas and philosophies encapsulated in the *DevOps* movement. We will discuss the ideas behind Lean and Agile organizations, systems automation and infrastructure as code, delivering modern IT services at scale, and how the IT unit relates to other groups within the organization (business relationship management and IT governance). Prerequisites for this course include the completion of TCMG 303 or 304 with a grade of C or better, and upper-level status within the Technology Management degree program.

Course Objectives

Upon completion of the course, students will have a basic understanding of the concepts and practices behind the DevOps model of IT service delivery. This includes: classifying types of work within an IT unit; systems automation and infrastructure as code; continuous integration/delivery of software; and the importance of communication and culture within an IT group. Additionally, students will have acquired hands-on experience with a variety of tools commonly used in DevOps environments, such as version control systems, virtual machines and containerization systems, infrastructure automation tools, and systems monitoring and reporting tools. The course will provide the opportunity to work in teams to deliver modern IT services, and experience the DevOps model of service delivery from the inside.

Instructor Information

Adam Mikeal

Director of IT, College of Architecture

adam@tamu.edu

(979) 862-3396

Office: Langford A122

Office hours: M 10–11; W 2–4; By appointment

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this

legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu/>.

Academic Integrity

We expect all students to abide by the Aggie Honor Code: *An Aggie does not lie, cheat, or steal, or tolerate those who do*. For additional information, visit <http://aggiehonor.tamu.edu/>.

Grading Policies

Final grades will be allocated on a 1400-point scale (A=1260–1400, B=1120–1259, C=980–1119, D=840–979, F<840). Attendance and participation in class is a critical part of your grade. The University views class attendance as the responsibility of an individual student. University rules related to excused and unexcused absences are located online at <http://student-rules.tamu.edu/rule07>. The total grade is comprised of the following components:

Attendance	20%	280 pts
Daily quizzes (readings)	20%	280 pts
Weekly ERFAs	20%	280 pts
Group projects and labs	30%	420 pts
In-class and online participation	5%	70 pts
Leadership and character	5%	70 pts

Attendance and class engagement — 20%

A primary skill needed to work in a DevOps environment is the ability to work within a group, and to be considered a dependable and productive member of a team. This means you must be prepared, be on time, and be engaged. Accordingly, a substantial part of your grade is based on timely attendance and participation in class and on your team. It's really simple: show up to class (unless you're sick — then stay home. Nobody wants to catch that... =P).

Daily quizzes (assigned readings) — 20%

There will be brief quizzes over each assigned reading on the due dates listed in the course schedule. These quizzes will be conducted promptly at the beginning of each class period using eCampus, and no make-ups will be allowed due to late arrival. Don't worry: as long as you've read the material this will be another easy grade.

Weekly ERFAs — 20%

Each week for the first fourteen weeks of the semester, you will have an online self-assessment called an **ERFA**. ERFAs encourage you to *Engage, Reflect, Find, and Apply* what you are learning in this course. The weekly ERFA assessments open in eCampus at 5pm on Friday afternoon and close at 11:59pm on Sunday night, and ask questions about that week's readings, lectures and activities. The questions are identical each week. Part of the assessment deals with me as your instructor. I ask you for feedback on how things are going — you won't be graded down if you are thoughtfully critical of my lectures or teaching. You **will** be graded down if the quality of your self-reflection is poor. Otherwise, this should be an easy part of your grade.

Group projects and labs — 30%

Hands-on exercises are assigned nearly every week of this course. Some of these are individual assignments that involve learning tools and applications common to the DevOps workflow. Some involve video instruction from Lynda.com, while others reference tutorials available from external sites. The majority of your time in the Thursday Lab period will be spent on these lab assignments, but you should expect to spend time outside class on these, as well. There are also four group projects throughout the semester. You will be assigned to a group for these projects, and graded collectively.

In-class and online participation — 5%

Please do not interpret the smaller percentage assigned to *participation* to mean that I think it is not important. The majority of our classes this semester will be conducted seminar-style, with a discussion over the assigned reading. Engagement in these discussions is critical for a productive and interesting course; you *really* don't want to just listen to me talk at you all semester.

Leadership and character — 5%

The Texas A&M University purpose statement says: *to develop leaders of character dedicated to serving the greater good*. One of the things you'll notice about this curriculum is the amount of time spent on "soft skills" like team-building, communication, and empathy. That's because DevOps is as much a cultural movement as it is a technological one. In recognition of this fact, 5% of your grade is determined by the leadership qualities that you demonstrate in class and within your project teams throughout the semester. The criteria for this determination are drawn from the [core values](#) of Texas A&M:

- **Selfless service.** Do you help a struggling teammate instead of complaining about them? Do you coach an unproductive or marginalized teammate back into the group, or just write them off?
- **Integrity.** Can your teammates count on you to follow through? Are you consistently prepared and on time?
- **Respect.** Do you actively work to ensure your classmates feel welcome and respected? Do you help to create an environment of trust and courtesy in the classroom?
- **Excellence.** Do you consistently strive to achieve your best work, and encourage others in your team to do the same?

NOTE: There is no late work acceptance policy — assignments will be judged by their state at the time of their due date. Learning to work within a team and plan ahead for contingencies is a critical skill in the workplace, especially so for someone working in a DevOps environment.