CSCE 5013 Cloud Computing (3 credit hours)

Catalog Description: Cloud computing has entered the mainstream of information technology, providing infinite or at least highly elastic scalability in delivery of enterprise applications and software as a service (SaaS). Amazon Elastic Cloud, Microsoft Azure, Google App Engine, and a few other offerings give both mature software vendors and start-ups the option to deploy their applications to a system of infinite computational power with practically no capital investment and with modest operating costs proportional to the actual use. In this course, we will focus on the architecture of today’s cloud computing client systems, the evolution of the Internet to support the cloud, the architecture of modern cloud data centers, and the technologies used within them.

Prerequisites: CSCE 3613 Operating Systems or instructor consent

Textbook/required material: None. Handout and other course materials will be given in the class.

Goals: This course will teach what cloud computing is, the architecture of cloud computing systems, how it works, both the pros and cons of current cloud computing systems, and the future of cloud computing.

Topics covered:

- Introduction to cloud computing
- How cloud computing works
- Architecture of cloud computing client systems
- Architecture of modern cloud data centers
- Network routing and protocols supporting cloud computing
- Case study of commercial clouds
- Future cloud computing

Class/laboratory schedule: Meets either 3 times a week for 50 minutes or 2 times a week for 1 hour 20 minutes for 15 weeks.

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