An eleven-week in-depth program in the principles, methods, and technologies of Cloud Computing

DePaul University’s Cloud Computing Technologies Program provides a broad understanding of the different leading Cloud Computing technologies. The program is designed to quickly educate information technology professionals on various Cloud implementations and the organizational considerations necessary to effectively and wisely utilize Cloud services within their organizations.

Classroom lectures and demonstrations will be complemented by hands-on exercises, reading, case studies, and projects. The in-class exercises will give the student first-hand knowledge of the skills needed to build and deploy a Cloud application using a variety of common services. While access to most Cloud services explored in the program will be provided to students in class, there may be some Cloud services that are only accessible via the use of a student’s own credit card. Students should expect to spend a small fee to access these services.

YOU WILL LEARN:

- Cloud Computing Concepts
- Cloud Computing Architecture
- Cloud Computing Standards
- Cloud Computing Implementation Strategies
- Exploiting Software as a Service (SaaS)
- Delivering Platform as a Service (PaaS)
- Deploying Infrastructure as a Service (IaaS)
- Workload Patterns and Resource Management
- Build your own Cloud using services from providers such as: Amazon, IBM®, Microsoft®, and Salesforce.com®
- Migrating to the Cloud
- Case Studies and Best Practices
CLOUD COMPUTING TECHNOLOGIES PROGRAM

The term “Cloud Computing” commonly refers to computing services available on demand, over the Internet, and that allow for dynamic elastic growth based on business needs. It encompasses a range of services: from basic infrastructure hosting (servers, databases, etc.) to hosting of development platform environments, to applications hosting. The services can reduce the time it takes to get products and/or services to market; reduce application development and deployment barriers and increase the flexibility of the IT organization.

Cloud Computing represents a major shift in the economics, development, and services provisioning of IT, and of business development in general. It has the potential to reduce an IT organization’s capital and support costs, enable applications to be implemented faster and allow applications to grow to accommodate user needs, it is a computing trend that has already made a major impact and can only be expected to grow in the future. As with many great opportunities, Cloud Computing also presents many challenges and some risks, which IT workers and decision-makers need to be aware of.

The Cloud Computing Technologies Program is designed to explore the essential aspects of Cloud Computing. The program is ideally suited to business and IT professionals who need a firm overall knowledge of the technologies involved, including: Senior IT managers and those assessing the potential for Cloud Computing in their organization; Systems Architects looking to design cloud-based systems; IT operations managers responsible for infrastructure and staffing; application developers assessing computing options for development projects; and application engineers responsible for deploying and managing Cloud applications. The ideal participant should have professional work experience in an IT job function and an interest in, or a need to know more about, Cloud Computing. Advanced computer programming skills are not required; however, students should have been exposed to basics of programming logic in a prior course. Students in the program are expected to do assignments outside of class. Instructors will be accessible in person and through electronic mail.

CURRICULUM

YOUR LEARNING ENVIRONMENT

Program overview. Tools used in the program.

CLOUD CONCEPTS

Review of different computing models such as Grid Computing, Utility Computing, Super Computing, Cluster Computing, and Distributed Computing. Understanding the difference in resource management between on-premise and Cloud. Discuss various workload patterns in the real-world.

CLOUD ARCHITECTURE


CLOUD STRATEGY

Identifying business challenges and understanding business needs. Defining Cloud objectives and achieving ROI. Creating a roadmap to transform on-premise business processes to the Cloud. Create a Cloud strategy on target market, go-to-market approach, pricing strategies and sales alignment.

CLOUD COMPUTING TERMS AND STANDARDS

Introduce Cloud Computing terms and definitions. Review existing Cloud Computing standards and the various efforts to develop new
Cloud Computing standards.

**EXPLOITING SOFTWARE AS A SERVICE (SaaS)**
Software on demand, through a subscription, in a "pay-as-you-go" model. Application delivery model (single instance, multi-tenant architecture). Discuss pricing, partnering, and management. Review Sales Force Automation and other SaaS vendors.

**DELIVERING PLATFORM AS A SERVICE (PaaS)**
Web-based user interface creation tools. Integration with Web Services and databases. Building a high-availability, high-scalability, and high-performance Cloud environment or application.

**DEPLOYING INFRASTRUCTURE AS A SERVICE (IaaS)**

**BUILDING A CLOUD**
Hands-on lab using services from providers such as IBM, Amazon, Microsoft, and Salesforce.com to enable students to build their own Cloud Computing environment.

**MIGRATING TO A CLOUD**
Discuss the issues related to migrating existing applications to the Cloud. Discuss Cloud Computing business cases which can reduce IT support costs and software licenses fees, better connect people, and improve service delivery.

**CASE STUDIES AND BEST PRACTICES**
Reviewing best practices on each business model and technical solution. Various real-world case studies.

**GENERAL INFORMATION**

**ADMISSION**
Professional work experience in an IT job function is required. Advanced computer programming skills are not required; however, students should have been exposed to basics of programming logic in a prior course.

A substantial commitment of time is required for this intensive course of study. Acceptance into the program will be determined by the admissions committee on the basis of an applicant's overall qualifications, including work history and educational background.

**FACILITIES**
To promote the learning process, the Institute maintains special-purpose laboratories as well as dedicated classrooms equipped with state-of-the-art audio/visual equipment.

In addition, the college’s unique Course OnLine (COL) technology allows students to replay classes over the Internet. COL captures and replays five components of the classroom experience—audio, video, PC screen, whiteboard, and document camera input—and incorporates them into one interface to provide an innovative rebroadcast system.

**CLASSES**
The Institute offers one section of the program each quarter. Classes meet one evening per week.

**FACULTY**
The faculty consists of a team of instructors from the College of Computing and Digital Media and experts from industry. Faculty will be available throughout the program both in person and through e-mail.
The college, through its School of Computing and its School of Cinema and Interactive Media, offers a variety of programs at the undergraduate and graduate levels. Over 1,000 students are enrolled in the college’s bachelor’s programs and over 2,000 students are enrolled in the master's and Ph.D. programs making the college’s graduate program one of the largest in the country. The college offers more than 200 courses each quarter, many in the evening, in several locations: the Loop Campus, the Lincoln Park Campus, the O'Hare Campus, the Naperville Campus, and the Rolling Meadows Campus. Most of the degree programs are also available exclusively online.

Current offerings at the undergraduate level include:

**Offerings at the undergraduate level include:**

Animation B.S. / Animation B.A.
Computer Games Development B.S.
Computer Graphics and Motion Technology B.S.
Computer Science B.S.
Computing B.A.
Digital Cinema B.S. / Digital Cinema B.A.
Graphic Design B.F.A.
Information Assurance and Security Engineering B.S.
Information Systems B.S.
Information Technology B.S. / Information Technology B.A.
Interactive Media B.S.
Math and Computer Science B.S.
Network Technologies B.S.

**Offerings at the graduate level include:**

Animation M.A.
Applied Technology M.S.
Business Information Technology M.S.
Cinema Production M.S.
Computer Game Development M.S.
Computer Graphics and Motion Technology M.S.
Computational Finance M.S.
Computer Science M.S.
Computer Information and Network Security M.S.
E-Commerce Technology M.S.
Human-Computer Interaction M.S.
Information Systems M.S.
Information Technology M.A.
IT Project Management M.S.
Network Engineering and Management M.S.
Predictive Analytics M.S.
Software Engineering M.S.
J.D./M.A. in Computer Science Technology
J.D./M.S. in Computer Science Technology

**Master’s of Fine Arts**

Animation
Cinema
Screenwriting

**Ph.D. in Computer and Information Sciences**

**INSTITUTE FOR PROFESSIONAL DEVELOPMENT**

The Institute for Professional Development was formed by the college in 1984 to assist both individuals and businesses in keeping pace with the rapid development of computer technologies. The Institute currently offers a variety of intensive certificate programs in these areas:

- Advanced SQL
- Big Data and NoSQL
- Big Data Using Hadoop
- Cloud Computing Technologies
- Data Science for Business
- IPv6
- Java™ Developer

- Java™ Web Development
- .NET Web Developer
- Ruby on Rails®
- SQL Server® Business Intelligence
- SQL Server® Database Administration
- Web Development with JavaScript and HTML5
- Web Development with Python®

**APPLICATION PROCEDURE:**

Complete the enclosed application and return it with a non-refundable $40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

DePaul University
Cloud Computing Technologies Program
Institute for Professional Development
243 S. Wabash Avenue, Room 301
Chicago, IL 60604-2300

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