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SDSC Participates in Coursera Global Skills Initiative

‘MOOCs’ prepare job seekers with technical skills knowledge

The San Diego Supercomputer Center (SDSC) at the University of California, San Diego, is participating in a new program to add technology-oriented courses to the online learning network Coursera to better prepare job seekers in the highly specialized tech sector.

Coursera last month launched its Global Skills Initiative, bringing top companies and universities together to produce a set of courses, called specializations, which teach a particular skill area that ends with a real-world “capstone” project. The goal is to advance access to job-relevant skills around the world. Time to completion varies based on one’s personal schedule, but most learners are able to complete the specialization in about seven months.

The first course in the SDSC specialization, sponsored by Splunk, a software company focused on analyzing machine-generated data, is called “Introduction to Big Data,” to start September 15. The National Science Foundation (NSF) has defined big data as large, diverse, complex, longitudinal, and/or distributed data sets generated from instruments, sensors, Internet transactions, email, video, click streams, and/or all other digital sources available today and in the future. The course will provide explanations of key technical terms and big data tools and resources.

Additional SDSC courses to be offered in this specialization include:

- **Hadoop:** This hands-on analysis of large data sets will show students how to install, configure, and implement an Apache Hadoop stack ranging from basic ‘Big Data components to MapReduce and Spark execution frameworks. *To start October 2015.*
- **Introduction to Big Data Analytics:** This course introduces participants to HBase, Pig, and Hive, as well as taking a real Twitter data set and bringing it into an analytics engine to create summary charts and drill-down dashboards. After completing this course, learners

also will be able to use BigTable, distributed data store, columnar data, noSQL, and more. *Starts November 2015.*

- **Machine Learning with Big Data:** Participants will learn the basics of large-scale data processing and become familiar with open-source tools used for parallel, distributed, and scalable machine learning using MapReduce, KNIME, and Spark. Students will be able to train, evaluate, and validate basic predictive models by the end of this course. *Starts December 2015.*
- **Introduction to Graph Analytics:** This course provides an overview of graph analytics, offering new ways to model, store, retrieve and analyze graph-structured data. Participants will learn how to model a problem into a graph database and perform analytical tasks over the graph in a scalable manner. *Starts January 2016.*
- **Big Data (Capstone Project):** In collaboration with Splunk, participants will build a Big Data ecosystem using tools and methods from the earlier courses in this specialization. Learners will choose an application, such as retail, sports, or current events, and learn how to enrich the datasets / data models previously used in this specialization with external data sets of their choice. They will build searches and/or dashboards that address the Capstone Project questions. *Starts February 2016.*

SDSC instructors include Natasha Balac, Director of SDSC's [Predictive Analytics Center of Excellence \(PACE\)](#); Amarnath Gupta, Director of the [Advanced Query Processing Lab](#); Mahidhar Tatineni, User Support Group Lead and Research Programmer Analyst; Paul Rodriguez, Research Programmer; and Andrea Zonca, High-Performance Computing (HPC) Applications Specialist. Additional SDSC staff involved in the development of these courses include Jeff Sales, Nicole Wolter, and Christine Kirkpatrick. Full details, including registration information, [can be found here](#).

The SDSC specialization is an initiative under the UC San Diego Office for Online and Technology Enhanced Education, which coordinates campus education efforts in the online arena. The office, part of the Teaching and Learning Commons, is closely aligned with the Commons' goals of supporting both instructors and students.

Coursera provides universal access to the world's best education by partnering with top universities and organizations worldwide to offer courses online. Coursera's education platform combines mastery-based learning principles with video lectures, interactive content, and a global community of peers, offering students from around the world a unique online learning experience.

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