Course Change Request

Date Submitted: 12/03/18 3:29 pm

Viewing: **CDS 421 : Introduction to Computational** Data Science ~~Fluid Dynamics~~

Last edit: 12/03/18 3:29 pm

Changes proposed by: blaisten

Catalog Pages referencing this course	Computational and Data Sciences (CDS)
	Computational and Data Sciences, BS
	Department of Computational and Data Sciences

In Workflow

1. **Registrar-Courses:Title Change**
2. **CDS Chair**
3. **SC Curriculum Committee**
4. SC Associate Dean
5. Assoc Provost-Undergraduate
6. Registrar-Courses
7. Banner

Approval Path

1. 12/03/18 4:52 pm Tory Sarro (vsarro): Approved for Registrar-Courses:Title Change
2. 12/04/18 12:56 pm Jason Kinser (jkinser): Approved for CDS Chair

Select modification type:
    Substantial

Are you completing this form on someone else's behalf?
    No

Effective Term: Fall 2019

Subject Code: CDS - Computational and Data Sciences   **Course Number:**   421

Bundled Courses:

Is this course replacing another course?   No

Equivalent Courses:

Catalog Title: Introduction to Computational **Data Science** ~~Fluid Dynamics~~

Banner Title: Intro Computnal Fluid Dynamics

Will section titles vary by semester?   No

Credits: 3

Schedule Type: Lecture

Hours of Lecture or Seminar per week: 3

Repeatable: May only be taken once for credit (NR)
                GRADUATE ONLY

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):   **CDS 251 or equivalent** ~~MATH 446, proficiency in at least one~~ computer programming **language,** ~~language~~ and **knowledge of** computer operating system, **or** ~~or~~ permission **of** ~~of~~ instructor.

Recommended Corequisite(s):

Required Prerequisite(s) / Corequisite(s) (Updates only):

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?

Registration Restrictions (Updates only):

Registrar's Office Use Only - Registration Restrictions:

    Field(s) of Study:

    Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description: Covers the governing **framework** ~~equations~~ of **data science for storing** ~~fluid dynamics; numerical discretization of the governing equations~~ and **processing big data in** ~~popular techniques for solving flow problems; applications of CFD to some classic fluid dynamics problems; and setting up the CFD simulation using~~ a **distributed computer environment using simple programming models.** ~~CFD software package.~~ **Includes a comprehensive selection of tools from Hadoop, MapReduce, HDFS, Spark, Flink, Hive, HBase, MongoDB, Cassandra, Kafka.** ~~Students will understand the process of developing a geometrical model of the flow, applying appropriate boundary conditions, specifying solution parameters, and visualizing the results.~~ Students are expected to complete several computer **projects** ~~projects, including writing their own CFD computer program to analyze simple fluid flow problems, as well as setting up the CFD simulation~~ using **these cyber packages.** ~~a CFD software package.~~

Justification: The catalog description of this course was created ten years ago and it is no longer consistent with the Computational and Data Sciences BS as redesigned in 2015. The catalog modification focuses on the computational approaches needed for working with big data instead of the legacy CFD computer technologies. Consistently, the modified prerequisites emphasize on the programming skills needed.

Does this course cover material which crosses into another department?   No

Learning Outcomes:

Attach Syllabus

Additional Attachments

Specialized Course Categories:

Additional Comments:

Reviewer Comments

Key: 1924