DSCI D590 Data Science In Practice (DSIP)
Spring 2019 Syllabus
Instructor: David Wild

OVERVIEW

Course Description. This course is designed to help students experience the complexities and nuances of applying data science in the real world. Students will work in teams of 3-5 to tackle a real-world problems defined by a project sponsor. Project sponsors can be academics or industry practitioners. Students will need to work with the project sponsor to understand the problem domain, decide on a role, identify where their data science skills can be applied, and to design, implement and test a solution; in this regard much of the course is about moving from ambiguity to an achievable project. During the course, students will also study aspects of data science consulting and project management through weekly reading assignments. The emphasis in this course is on the learning experience, not just the technical outcomes in the projects. The course is designed for second-year MS data science students.

Learning Goals. After completing this course, students will have practical experience working in a complex team environment using their skills to solve a real data science problem in an application domain; be able to go into an ambiguous situation and identify concrete opportunities; and understand multiple perspectives on data science consulting and project management.

About the Instructor. David Wild is an Associate Professor of Informatics in the School of Informatics, Computing and Engineering (SICE) at Indiana University. He directs the Integrative Data Science Lab that brings together data sets and expertise from different disciplines along with novel data science tools and technologies to solve real world problems, with a particular focus on healthcare, pharmaceutical and emergency response applications. He was a founding director of IU’s Data Science programs. You can find out more about him at http://djwild.info.

Class Times. This is an asynchronous online course. Learning materials will be sent out at the start of each week, and students are required to set up regular meetings (at least weekly) with the Project Sponsor. We will run a Data Science In Practice Clinic at a time to be determined based on class availability to help students with their projects. Students are required to attend these clinics. If this time proves difficult for members of the class, we may find other ways to accommodate student schedules.

Course Communications. All procedural announcements and assignments will be handled within the Canvas site for this course, except as otherwise noted. If you wish to contact the instructors by email, you can do so at djwild@indiana.edu (David) and make sure to include the word “DSIP” in the subject line.

Grading. Students are graded based on project submissions as detailed below.

**PROJECT PROCESS & RUBRIC**

The first 2-3 of weeks of the course will be dedicated to helping students understand their current skills and interests, and the skills they would like to develop further in this course. The instructors will work with students to carry out an inventory of skills and to identify roles for them to play in project teams. Students can observe ongoing projects to get an idea about what their role and contributions to these or new projects could be over the semester.

Students will be required to submit a brief (3 pages or less) resume to the instructor to enable the instructor to assess the skill sets of each student. These skills include data science & computing skills, as well as other domain expertise and/or life skills. They will be required to present themselves to the class and to share with other class members what their goals are as well as what their strengths are that they could bring to the team on each project.

Students will be exposed to the possible projects and project sponsors. The instructor will work with the students to form teams based on expressed interest in a project and skill sets.

The first task of the project team is to meet with the project sponsor, either virtually using the Zoom videoconferencing tool – iu.zoom.com – or in person. This meeting should take the form of a contextual inquiry session in which the aim is to fully understand the nature of the problem to be solved, and what a successful solution would look like. It may be necessary to have several meetings to do this.

Students will be required to post three updates to Canvas throughout the semester, each approximately 1 page.

The first update should describe the students’ skills, desired skills to learn, interests, and the project or projects of interest they are pursuing, along with a short description of how the skills and interests match the project(s).

The second update, mid semester, should describe the students’ plan and progress engaging with the project(s), and desired outcomes in the project(s), including any roadblocks encountered.

The final update will describe the outcomes achieved in terms of skills applied and learned, and progress of the project. This could also include suggestions for future work.

Students will be graded as follows: 10% submission of resume; 60% submission of updates; 30% engagement in online discussions about projects and class readings (both synchronously in Zoom, and asynchronously in discussions on Basecamp).
THE SMALL PRINT (PLEASE READ!)

Student Conduct, Rights, and Responsibilities

All students are expected to submit their own original work. Plagiarism constitutes using others’ ideas, words or images without properly giving credit to those sources. If you turn in any work with your name affixed to it, we assume that work is your own and that all sources are indicated and documented in the text (with quotations and/or citations). We will respond to acts of academic misconduct according to university policy concerning plagiarism; sanctions for plagiarism can include a grade of F for the assignment in question and/or for the course and must include a report to the Dean of Students Office. For more information on our expectations for student conduct please refer to the Code of Student Rights, Responsibilities, and Conduct http://www.iu.edu/~code/code/responsibilities/academic/index.shtml.

Email Etiquette

Please allow at least 24 hours for a reply to your emails, and we will do the same for you. Please put “DSIP” in the Subject line and remember to sign your email with your name. We expect the language and structure of your emails to be professional. This includes punctuation, salutations/signature, etc.

Sexual Misconduct and Title IX

As your instructors, one of our responsibilities is to create a positive learning environment for all students. Title IX and IU’s Sexual Misconduct Policy prohibit sexual misconduct in any form, including sexual harassment, sexual assault, stalking, and dating and domestic violence. If you have experienced sexual misconduct, or know someone who has, the University can help.

If you are seeking help and would like to speak to someone confidentially, you can make an appointment with:

- The Sexual Assault Crisis Services (SACS) at (812) 855-8900 (counseling services)
- Confidential Victim Advocates (CVA) at (812) 856-2469 (advocacy and advice services)
- IU Health Center at (812) 855-4011 (health and medical services)

It is also important that you know that Title IX and University policy require me to share any information brought to my attention about potential sexual misconduct, with the campus Deputy Title IX Coordinator or IU’s Title IX Coordinator. In that event, those individuals will work to ensure that appropriate measures are taken and resources are made available. Protecting student privacy is of utmost concern, and information will only be shared with those that need to know to ensure the University can respond and assist. We encourage you to visit stopsexualviolence.iu.edu to learn more.

Classroom Behavior
Everyone is expected to conduct themselves professionally during this course, especially as it involves working with external project sponsors and in a team environment. This includes arriving on time to meetings and being polite and courteous. Professional behavior also entails being respectful of others and their opinions—even and especially when you do not agree with them.