

DAAN: DATA ANALYTICS

DAAN 500. Advanced Prog. for Data Analyt. (3 Credits)

This course delves into advanced topics such as algorithm optimization, parallel processing, and distributed computing, providing students with a robust skill set to handle vast datasets efficiently. Through hands-on projects and real-world applications, students will gain expertise in implementing data structures, designing scalable algorithms, and harnessing the power of frameworks like Apache Spark. The curriculum also covers best practices in code optimization, debugging, and version control, ensuring students graduate with a deep understanding of advanced programming techniques tailored for the demands of modern data analytics using Python and PANDAS.

DAAN 510. Data Analytics I. (3 Credits)

This course is a foundational course designed to provide students with a comprehensive introduction to the fundamental principles and techniques of data analytics. This course aims to develop essential skills for navigating the data landscape, including data collection, cleaning, and exploration. Students will be introduced to popular data analytics tools (e.g., Tableau and Power BI) and programming languages (e.g., Python and R), gaining hands-on experience in manipulating and analyzing real-world datasets. Through a combination of theoretical concepts and practical applications, participants will learn to derive meaningful insights from data, communicate findings effectively, and make data-driven decisions. The course sets the stage for a deeper understanding of data analytics, laying the groundwork for more advanced studies in this rapidly evolving field.

DAAN 511. Data Analytics II. (3 Credits)

This course builds upon the foundational concepts introduced in DAAN 510, delving deeper into the multifaceted world of data analysis. This course equips students with advanced skills in data manipulation, exploration, and visualization, emphasizing the practical application of statistical methods and tools such as SPSS, SAS and R. Through hands-on exercises and real-world case studies, students refine their proficiency in data wrangling, employing programming tools to extract valuable insights from diverse datasets. Topics include regression analysis, hypothesis testing, and machine learning fundamentals, providing a comprehensive understanding of how data-driven decisions are made. By the end of the course, students will possess a robust skill set to tackle complex analytical challenges and contribute meaningfully to data-driven decision.

DAAN 520. Advanced Info Visualization. (3 Credits)

This course is designed to deepen students' understanding of cutting-edge techniques and tools in visualizing complex datasets. Student will learn sophisticated visualization technologies, including interactive dashboards, virtual reality, and augmented reality applications, fostering the development of skills essential for effectively communicating insights derived from diverse datasets. Through hands-on projects and case studies, participants will gain proficiency in designing visually compelling representations that enhance data comprehension and decision-making. This course equips students with the expertise needed to address the challenges of presenting information in diverse domains, empowering them to create impactful visualizations that transcend traditional boundaries.

DAAN 530. Ethics in Data Analytics. (3 Credits)

This course explores the ethical considerations and challenges inherent in the rapidly evolving field of data analytics. This course delves into the responsible use of data, addressing issues such as privacy, bias, and transparency. Students will examine real-world case studies to understand the ethical dilemmas faced by data analysts and developed a comprehensive understanding of the social and moral implications of data-driven decision-making. Emphasizing a multidisciplinary approach, the course encourages critical thinking and thoughtful reflection on the ethical dimensions of collecting, analyzing, and interpreting data. Students will engage in discussions on industry standards, legal frameworks, and emerging ethical guidelines, fostering a heightened awareness of the ethical responsibilities associated with harnessing the power of data in today's interconnected world.

DAAN 545. Big Data Analytics. (3 Credits)

This course introduces students to the dynamic field of Big Data Analytics, providing a comprehensive overview of the principles, techniques, and tools essential for extracting valuable insights from large and complex datasets. Emphasizing both theoretical foundations and practical applications, students will delve into the fundamentals of data preprocessing, storage, and retrieval, exploring cutting-edge technologies such as Hadoop and Spark.

DAAN 560. Sport Data Analytics. (3 Credits)

This course provides students with a comprehensive understanding of the application of data analytics in sports. It explores the vast amount of data available in both traditional sports and eSports. By learning to extract valuable insights and make data-driven decisions, students can enhance performance, strategize effectively, and gain a competitive edge. Students will learn the fundamental concepts and techniques of data analytics and their specific application in sports. Additionally, they will gain hands-on experience with various tools and technologies used for data collection, management, analysis, and visualization in the sports industry.

DAAN 562. Financial Analytics. (3 Credits)

Financial Analytics provides students with a comprehensive understanding of the application of data analytics in the field of finance. This in-depth course equips students with the knowledge and skills required to leverage data analytics techniques. The course explores the application of analytical tools and methodologies to extract insights, identify patterns, and make informed decisions in financial domains such as investment management, risk assessment, and financial planning. Students will gain a deep understanding of financial concepts and learn how to apply data analytics techniques to analyze financial data, interpret trends, and make strategic recommendations. They will also develop proficiency in using industry-standard software and tools to manipulate, visualize, and analyze financial data.

DAAN 600. Thesis. (3 Credits)

Research on a thesis that represents an original contribution with publishable results.

DAAN 601. Thesis II. (3 Credits)

Research on a thesis that represents an original contribution with publishable results. A student shall not receive credit for DAEG 601 until the graduate committee approves the draft copy of the thesis.

DAAN 605. Graduate Data Analytics Projec. (3 Credits)

A master's project should include an introduction of new software tools, a novel capability using existing technology, or a novel survey of an area, or require substantial scientific computation. A report must be submitted and approved by the graduate committee.

DAAN 640. Spec. Topics in Data Analytics. (3 Credits)

An introduction to a special topic with applications. Students will work on a series of projects using current technology. This course may be repeated for additional credit provided the topic is substantially different than any prior course including transferred credit.