Miami Dade College

Course Description

CAP4910 | Data Analytics Capstone | 4.00 credits

This upper-division course is for students majoring in Data Analytics. Students will initiate a business-driven data analytics solutions to a real-world problem utilizing acquired skills in statistical analysis, machine learning, data mining, and data visualization. Must be taken during the last semester before graduation. Departmental approval required. Prerequisites: CAP4633C, CAP4767, CAP4744.

Course Competencies:

Competency 1: The student will display effective communication and team building skills in a Data Analytics project by:
1. Selecting the project team members' roles and assigning their respective responsibilities
2. Developing a mechanism for clear and consistent communication among team members
3. Setting clear goals and objectives to monitor the ongoing effectiveness of the team

Competency 2: The student will successfully formulate project requirements and a statement of work by:
1. Defining the project purpose and the scope of work to be conducted
2. Planning the project deliverables and the respective timeline with milestones
3. Formulating quantifiable criteria that must be met for project acceptance
4. Designing a formal written report following the assigned format and style

Competency 3: The student will develop a comprehensive data analytics project by:
1. Examining recent trends affecting Data Analytics
2. Choosing an appropriate data set
3. Cleansing the data set to ensure accuracy and reduce errors
4. Creating visualizations and interactive dashboards
5. Building machine learning models to analyze the data and make predictions

Competency 4: The student will demonstrate the ability to justify a project's conclusions by:
1. Explaining why specific models were used and provide the advantages and disadvantages of each
2. Testing the models, visualizations, and evaluating results
3. Verifying that the models and visualizations support the final ranked recommendations

Competency 5: The student will present and evaluate Data Analytics project proposals by:
1. Developing a final project proposal document following the assigned guidelines
2. Presenting the project proposal to a live audience
3. Evaluating different project proposals and presentations following assigned evaluation criteria

Learning Outcomes:
- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Use computer and emerging technologies effectively