Data Science Major with Physics and Astronomy Cognate Requirements
Catalog Year:  2015-16
Degree: Bachelor of Science
Credit Hours: 72+

“PR” indicates a pre-requisite. “CO” indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses

☐ DATA 101 Introduction to Data Science (3) PR: None
☐ DATA 210 Dataset Organization and Management (3) PR: None
☐ DATA 495 Data Science Capstone (3) PR: DATA 210, CSCI 470, and MATH 441

Math Requirement

☐ MATH 120 Introductory Calculus (4) PR: Placement or C- or better in MATH 111
☐ MATH 203 Linear Algebra (3) PR: MATH 120 or instructor permission
☐ MATH 207 Discrete Structures I (3) PR: MATH 105, MATH 111, or MATH 120
☐ MATH 220 Calculus II (4) PR: MATH 120 or HONS 115
☐ MATH 250 Statistical Methods I (3) PR: MATH 111 or MATH 120 or instructor permission
☐ MATH 350 Statistical Methods II (3) PR: MATH 120, MATH 250
☐ MATH 440 Statistical Learning I (3) PR: MATH 203, MATH 220, MATH 350
☐ MATH 441 Statistical Learning II (3) PR: MATH 440

Computer Science Requirement

☐ CSCI 220 Computer Programming I (3) PR: CSCI 120 or CSCI 180 or MATH 111 or higher or department permission; CO: CSCI 220L
☐ CSCI 222L Computer Programming Lab I (1) CO: CSCI 220
☐ CSCI 221 Computer Programming II (3) PR: CSCI 220 with a C- or better, CSCI 220L with a C- or better; CO or PR: MATH 207
☐ CSCI 230 Data Structures and Algorithms (3) PR: CSCI 221 with a C- or better, MATH 207
☐ CSCI 310 Advanced Algorithms (3) PR: CSCI 230 with a C- or better, MATH 207
☐ CSCI 334 Data Mining (3) PR: CSCI 221 with a C- or better, MATH 207, MATH 250
☐ CSCI 470 Principles of Artificial Intelligence (3) PR: CSCI 230 with a C- or better

Select a cognate from the following: Accounting, Biomechanics, Customer Relationship Management, e-Commerce, Economics, Exercise Physiology, Finance, Geoinformatics, Molecular Biology, Organismal Biology, Physics and Astronomy, Psychology, Sociology or Supply Chain Management.

Physics and Astronomy Cognate Requirements (18 credit hours)

☐ PHYS 111 General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L
☐ PHYS 111L General Physics I Lab (1) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111
☐ PHYS 112 General Physics II (3) PR: PHYS 111 or HONS 157; CO or PR: MATH 220 or equivalent or instructor permission; CO: PHYS 112L
☐ PHYS 112L General Physics II Lab (1) PR: PHYS 111 or HONS 157; PR or CO: MATH 220; CO: PHYS 112
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>PHYS 230</td>
<td>Introduction to Modern Physics</td>
<td>3</td>
<td>PHYS 112 or HONS 158; CO or PR: MATH 221 or instructor permission</td>
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<tr>
<td>ASTR 311</td>
<td>Stellar Astronomy and Astrophysics</td>
<td>3</td>
<td>ASTR 231 and MATH 221</td>
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<tr>
<td>PHYS 370</td>
<td>Experimental Physics</td>
<td>4</td>
<td>PHYS 230 or instructor permission</td>
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