Florida Institute of Technology

SCHOLARLY INQUIRY (QEP) COURSE SUMMARY

BASIC COURSE INFORMATION

DEPARTMENT: Ocean Engr & Marine Sci (OEMS)  
FACULTY DEVELOPER(S): Pallav Ray, Steven M. Lazarus

Course Name and Course Sequence Information

<table>
<thead>
<tr>
<th>COURSE NUMBER</th>
<th>COURSE TITLE</th>
<th>CREDITS</th>
<th>TERM(S) OFFERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 3403</td>
<td>Data Analysis in Meteorology and Geosciences</td>
<td>4</td>
<td>Spring Junior</td>
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Is this course part of multi-course sequence? ☐ Yes ☐ No

Course sequence (if applicable)

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Course Used in the following degree program(s)

<table>
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<tr>
<th>DEPARTMENT</th>
<th>DEGREE PROGRAM</th>
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<tr>
<td>Ocean Engr &amp; Marine Sci (OMES)</td>
<td>BS Meteorology</td>
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Proposed Course Instructor(s)

Pallav Ray

INFORMATION ABOUT STUDENTS WHO WILL TAKE COURSE

LEVEL(S): ☐ Senior ☐ Other ☑ Junior

ABILITY: ☐ Open ☐ Restricted ☑ Other

Additional Information/Student Characteristics

Students in their junior spring year will take this class. Students should have taken at least one of the following classes: CSE 1502, CSE 1503, or CSE 1100.

GOALS AND OUTCOMES (additional pages may be necessary)

HOW DOES THIS COURSE ADDRESS SCHOLARLY INQUIRY OUTCOMES?

The students are expected to learn about different types of multi-dimensional large meteorological datasets (i.e., big data) and apply that knowledge to describe and better understand physical and dynamical processes of the weather and climate system. Emphasis will be placed on understanding and interpreting the data through basic programming, plotting (visualization) and analysis.

HOW DOES THIS COURSE ADDRESS THE PLAN REQUIREMENT?

Students will be required to develop a formal timeline, submit regular progress reports that identify any problems encountered as well as proposed action items that are required to resolve them.

HOW DOES THIS COURSE ADDRESS THE CONDUCT REQUIREMENT?

The course is designed to replicate the end-to-end scientific process. Students will engage and develop individual projects that include: big picture content (outline); basic research questions; a clear proposal (i.e., statement of the problem, how they plan to answer the questions, and a literature review). Data sourcing (i.e., identifying / locating relevant data sets) and the application of computational skills (coding, software tools) to the processing and analysis of the data (results, summary / conclusions).

HOW DOES THIS COURSE ADDRESS THE REPORT REQUIREMENT?

Course outcomes are designed, in part, to promote professional development and include the following 1) a scientific (conference style) poster per American Meteorological Society (AMS) standards and specs, 2) oral presentation (also conference style), and 3) student peer-review (poster and presentations). The posters will be presented at the FIT Engineering Showcase (or at the AMS student conference).

See assessment descriptions on reverse - Additional documentation may be needed.

Florida Institute of Technology  •  Office of the Registrar
1501 West University Boulevard, Melbourne, FL 32901-6975  •  (321) 674-8118  •  Fax (321) 674-7827

RR-10-3-118
STUDENT LEARNING OUTCOMES INSTRUCTIONS

PLAN

In completing a QEP experience within their field of study, students will be able to 1) prepare a well-written plan for the experience including how to achieve objectives, and a timetable and description of required resources [synthesis/evaluation]; 2) regularly document progress on the experience and communicate that progress to others; and 3) when appropriate, adjust the plan to overcome barriers and/or capitalize on opportunities that arise [synthesis/evaluation].

CONDUCT

In completing a QEP experience within their field of study, students will be able to 1) delimit and describe the objectives to be accomplished [analysis/synthesis]; 2) conduct a search for published work on theory, research and practices related to the objectives when appropriate [analysis/synthesis]; and 3) collect and analyze pertinent information and data called for in the plan [application/analysis].

REPORT

In completing a QEP experience within their field of study, students will be able to 1) present the results of the experience in one or more documents that include correctly designed and executed graphics and as an oral presentation that includes effectively designed and executed graphics; 2) communicate all elements of the experience using standard English conventions (including effective sentence and paragraph structure, appropriate voice and verb tense, and suitable word choice) and a report formatted and styled in a way appropriate to the academic/professional field (including text citations and bibliographic references to document others' intellectual contributions); and 3) handle all aspects of the experience with a professional demeanor (including responsibly interacting with team members, meeting deadlines, and preparing and presenting project materials in their final form).

Department Head/Program Chair
Date
8/6/2018

Richard A. Grosvenor
Department Head
Date
8/3/18

Chair, Undergraduate Curriculum Committee
Date