**NRM 121 Course Outline as of Fall 2015**

# CATALOG INFORMATION

Dept and Nbr: NRM 121 Title: GLOBAL POSITIONING SYSTM
Full Title: Global Positioning Systems
Last Reviewed: 3/1/2010

| Units | | Course Hours per Week | | Nbr of Weeks | Course Hours Total | |
|---|---|---|---|---|---|---|
| Maximum | 2.00 | Lecture Scheduled | 1.50 | 17.5 | Lecture Scheduled | 26.25 |
| Minimum | 2.00 | Lab Scheduled | 1.50 | 8 | Lab Scheduled | 26.25 |
| | | Contact DHR | 0 | | Contact DHR | 0 |
| | | Contact Total | 3.00 | | Contact Total | 52.50 |
| | | Non-contact DHR | 0 | | Non-contact DHR | 0 |

Total Out of Class Hours: 52.50 Total Student Learning Hours: 105.00

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| Title 5 Category: | AA Degree Applicable |
| Grading: | Grade or P/NP |
| Repeatability: | 00 - Two Repeats if Grade was D, F, NC, or NP |
| Also Listed As: | |
| Formerly: | |

**Catalog Description:**
An introduction to the methods, techniques, tools, and applications of GPS (Global Positioning Systems) to natural resources, parks and recreation.

**Prerequisites/Corequisites:**

**Recommended Preparation:**

**Limits on Enrollment:**

**Schedule of Classes Information:**
Description: An introduction to the methods, techniques, tools, and applications of GPS (Global Positioning Systems) to natural resources, parks and recreation. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended:
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

## ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

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|---|---|---|---|
| **AS Degree:** | **Area** | Effective: | Inactive: |
| **CSU GE:** | **Transfer Area** | Effective: | Inactive: |
| **IGETC:** | **Transfer Area** | Effective: | Inactive: |

**CSU Transfer:** Effective: Inactive:

**UC Transfer:** Effective: Inactive:

**CID:**

**Certificate/Major Applicable:**
Both Certificate and Major Applicable

## COURSE CONTENT

**Outcomes and Objectives:**
Upon completion of this course, students will be able to:
1. Discuss the principles of Global Positioning Systems (GPS).
2. Operate with proficiency the Trimble GEOExplorer data collector and the Garmin eTrex.
3. Utilize Pathfinder office software.
4. Download, differentially correct, and export data collected.
5. Create a data dictionary for application in field data collection.
6. Prepare data for use with Geographic Information Systems (GIS).
7. Describe the phases of a GPS project.

**Topics and Scope:**

I. Introduction to Global Positioning Systems (GPS)
   A. What is GPS
   B. Equipment and software used for data collection and post-Processing
II. Applications of GPS
   A. Recreational
   B. Mapping
   C. Surveying
   D. Natural resource applications
III. How to Operate the Garmin eTrex
   A. Using for navigation
   B. Creating waypoints
IV. How to Operate the GeoExplorer
   A. Features and attributes
   B. Creating a data dictionary
   C. Setting projections
V. GPS Project Organization
   A. Preparing for field collection
   B. Building a data dictionary
   C. Satellites position for time, date, and location of data

collection
D. Equipment inspection
E. Collecting data
F. Post processing
G. Exporting data into Geographic Information Systems (GIS)

VI. Field Data Collection Techniques
A. Data collection
B. Post-processing
C. Exporting

VII. Introduction to Pathfinder software
A. Downloading field collected data
B. Differential correction
C. Editing
D. Printing plot map
E. Exporting to various applications, including GIS

**Assignment:**

1. Reading assignments totaling approximately 60 pages
2. Labs: GPS proficiency lab, tracking and mapping locations using a GPS unit; and integrating GPS with GIS (50% problem solving; 50% skill demonstration).
3. Project report (5-10 pages) including print out of mapping data.
4. Quizzes (3).

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

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| Project report. | Writing<br>10 - 45% |

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

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| Lab assignments. | Problem solving<br>10 - 40% |

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

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| Lab assignments. | Skill Demonstrations<br>10 - 40% |

**Exams:** All forms of formal testing, other than skill performance exams.

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| Multiple choice, True/false, Matching items, Completion | Exams<br>10 - 30% |

**Other:** Includes any assessment tools that do not logically fit into the above categories.

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| Attendance and class participation | Other Category<br>15 - 35% |

**Representative Textbooks and Materials:**
GPS Made Easy: Using Global Positioning Systems in the Outdoors. Lawrence Letham and Alex Letham. Mountaineers Books, 2008.