Required Courses

_____ UN 4000 Remote Sensing Seminar (1)

Select one of the following two courses:

_____ FW 4540 Remote Sensing of the Environment (3)
_____ GE 4250 Fundamentals of Remote Sensing (3)

Elective Courses (Data Management)

Select 3-6 credits from the following:

_____ CS 2090 Special Topics in CS (3)
_____ CS 4611 Foundations of Computer Graphics (3)
_____ FW 3540 Intro to GIS for Natural Resource Management (4)
_____ FW5411 Applied Regression Analysis (3)
_____ FW 5550 Geographic Information Systems (4)
_____ FW5557 Applied Spatial Statistics (3)
_____ GE4670 Aquatic Remote Sensing (3)
_____ MA 2720 Statistical Methods (4)
_____ MA 4515 Intro to Partial Diff. Equations (3)
_____ MA 4610 Numerical Linear Algebra (3)
_____ MA 4710 Regression Analysis (3)
_____ MA 5701 Statistical Methods (3)
_____ MA 5980 Special Topics in Mathematics (3)

Elective Courses (Data Acquisition & Processing)

Select 3-6 credits from the following:

_____ EE 3140 Electromagnetics (3)
_____ EE 4252 Digital Signal Processing (4)
_____ EE 5500 Statistical Signal Processing (3)
_____ FW 5560 Digital Image Processing: A Remote Sensing Perspective (4)
_____ GE 4250 Fundamentals of Remote Sensing (3)

(Do not select if selected under Required Courses above).

_____ PH 2230 Electronics for Scientists (4)
_____ PH 3210 Optics (3)

Courses listed in this minor have the following prerequisites (shown in parenthesis). Concurrency is illustrated by the letter C: CE3620 ([ENG3200 or ENG3507] and [MA3710 C or ENVE3502 C or CE3710 C]); CS611 (CS1141 and CS2321 and MA2330); EE3140 (PH2200 and MA3160 and [EE2110 or EE2112]); EE4252 (EE3160; FW3540 (MA2710 C or MA2720 C or MA3710 C or ENVE3502 C); ENVE4501 ([ENVE3501 or ENVE3503] and ENVE 3502 and [ENG3200 or CH3500 or CH3501]); ENVE4504 (ENVE3501 or ENVE3503); ENVE5551 (CH3510 or ENVE4501 or ENVE4504); ENVE5550 (ENVE 4501 or CH 3510); FW5560 (FW5540; GE4150 (GE2000 or GE2100); GE4250 (PH2200 and MA2160); GE4670 (PH1200 and [CH1150 or GE2000 or BL1010 or BL1040]); MA2720 (MA1020 or MA1030); MA4515 ([MA3520 or MA3521 or MA3530 or MA3560] and MA3160); MA4610 (MA2320 or MA2321 or MA2330); MA4710 (MA2710 or MA2720 or MA3710 or MA3715); PH2230 (PH2200 or PH2260; PH3210 (PH2400 and [MA3520 or MA3521 or MA3530 C or MA3560]); PH4640 ([PH2200 or PH2260] and [PH1360 or PH2300] and MA3160 and [MA3520 or MA3521 or MA3530 or MA3560])

(Requirements are continued on reverse side)
**Minor in Remote Sensing (continued)**

**Elective Courses (Data Analysis and Applications)**
Select 3-6 credits from the following list:

- CE3620 Water Resources Eng (4)
- ENVE4501 Environ Eng Chem Processes (4)
- ENVE4504 Air Quality Engineering & Science (3)
- ENVE5515/CH5515/ENVE4515/CH4515 Atmospheric Chemistry (3)
- ENVE/CH5509 Environ. Organic Chemistry (3)
- FW4540 Remote Sensing of the Environment (3) *(Do not select if selected under Required Courses above).*
- GE2500 Introduction to Oceanography (3)
- GE2640/PH2640 Atmospheric Observ & Meteor (3)
- GE4150 Natural Hazards (3)
- GE5150 Advanced Natural Hazards (3)
- UN4000 Remote Sensing Seminar (1)* *(1 credit of UN4000 may be used in addition to the 1 credit of UN4000 that is required).*
- PH4640 Intro to Atmospheric Physics (3)

**Elective Courses (Independent Study/Senior Research)**
Select 0-3 credits from the following:

- BL4000 Research in Biology (3)
- ENVE4510 Baccalaureate Thesis (3)
- CH4990 Undergrad. Research in Chemistry (3)
- CS4090 Special Topics in CS (3)
- EE4800 Special Topics in EE (3)
- FW4500 Independent Study (3)
- GE4960 Independent Geol. Eng. Res. Project (3)
- MA4990 Topics in Mathematics (3)
- PH4080 Senior Research I (3)

**Information and Guidelines**

- Minors will require a minimum of 16 semester credit hours. Of these 16 credit hours, no more than 6 may be 1000 or 2000 level. Minors must include at least 6 credit hours of 3000 level or higher courses which are not required for a student’s Major degree except as free electives.

- Undergraduate requirements and special provisions for each Minor are listed and defined by each academic unit offering the Minor. Minors offered in cross-disciplinary areas must originate in a designated department, school, or multidisciplinary program as recognized by the University.

- Students may not take a Minor with the same title as their Major or Major Concentration.

- A minimum cumulative grade point average of 2.0 is required for courses in the Minor.

- It is recommended that students consider Minors as early as possible in their program of study. Students desiring a Minor should indicate their intent by filing a "Change/Addition of Major/Minor" form with the Office of Student Records and Registration no later than the first semester of their junior year.

- Students desiring a Minor must also file the applicable ‘Minor Audit Form’ with the academic advisor of the department offering the minor two semesters prior to completion of their associated undergraduate degree. The academic advisor will approve and forward the form to Degree Services. Once this Minor Audit Form is on file with Degree Services, any change of intent to pursue the minor must be reported directly to the Degree Services Office, 487-2395. Failure to do so could delay the awarding of the undergraduate degree.

- Any changes to the requirements, e.g. course substitutions, must be indicated and submitted to the Degree Services Office on a "Petition to Alter Degree Requirements" form by the academic advisor in the department offering the minor.

**Credits Required = 16**

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Academic Year 2014-15