### Required Courses

- **UN 4000 Remote Sensing Seminar (1)**

### Elective Courses (Data Management)

*Select 3-6 credits from the following:*

- **CE 5661 GIS Applications (3)**
- **CS 2090 Special Topics in CS (3)**
- **CS 3621 Geometric Objects and Processing (3)**
- **CS 4611 Foundations of Computer Graphics (3)**
- **FW 3540 Intro to GIS for Natural Resource Management (4)**
- **FW 5550 Geographic Information Systems (4)**
- **GE 4160 Introduction to Subsurface GIS (3)**
- **MA 3730 Statistical Methods II (3)**
- **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 5741 Multivariate Statistical Methods (3)**
- **MA 5980 Special Topics in Mathematics (3)**

### Elective Courses (Data Acquisition & Processing)

*Select 3-6 credits from the following:*

- **EE 2150 Intro to Signal Processing (3)**
- **EE 3140 Electromagnetics (3)**
- **EE 4252 Digital Signal Processing (4)**
- **EE 5500 Statistical Signal Processing (3)**
- **EE 5520 Fourier Optics (3)**
- **FW 5560 Digital Image Processing: A Remote Sensing Perspective (4)**
- **GE 4250 Fundamentals of Remote Sensing (3)**
- **MA 2230 Electronics for Scientists (4)**
- **PH 2310 Geometrical & Physical Optics (4)**
- **PH 5630 Imaging Systems (2)**
- **PH 5950 Graduate Electronics for Sci. (3)**

The courses in this minor have the following prerequisites (shown in parenthesis):

CE4501 ((CE3501 or CE3503) and CE3502 and CH3500 C), CE5661 (CE3620), CE5509 (CE4501 or CH3510), CE5505 (CE4504 or CE4501), CE3620 (ENG3200 and (MA3710 C or CE3502) C), GE4250 (PH2200 and (MA2150 or MA2160)), CS3621 ((MA2160 or MA2150) and (MA2330 or MA2320 or MA2321 or MA2990) and CS2141), EE2150 ((MA2160 or MA2150) and (CS1121 or CS1131)), MA5741 ((MA4710 or MA4720) and MA5701), CE4504 (CE3501 or CE3503), FW5550 (MA2720 or MA2710 or MA3710), MA3730 (MA2710 or MA2720 or MA3710), FW3540 (MA2720 C or MA2710 C or MA3710 C), EE2522 (EE3160 and EE2150), EE5520 (EE3190), PH4080 (PH3480), PH2230 (PH2220 or PH2260), FW5560 (FW4540), EE3140 (PH2200 and (MA3160 or MA3150)), MA4515 ((MA3520 or MA3521 or MA3530 or MA3560) and (MA3150 or MA3160)), MA4610 (MA2320 or MA2321 or MA2330), CH5509 (CE4501 or CH3510), MA4710 (MA2720 or MA3710 or MA2710), CS4611 (CS2141), GE4150 ((GE2000 or GE2100 or GE2200) and UN2002), PH3210 (PH2400 and (MA3520 or MA3521 or MA3530 C or MA3560))
Minor in Remote Sensing (continued)

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

- BL5520 Satellite Limnology (3)
- CE3620 Water Resources Eng (4)
- CE4501 Environ Eng Chem Processes (4)
- CE4504 Air Quality Engineering & Science (3)
- CE5505 Atmospheric Chemistry (3)
- CE/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)
- GE4170 Volcanic Clouds (4)
- GE5150 Advanced Natural Hazards (3)
- GE5160 Remote Sensing of the Earth (3)
- PH5910 Atmospheric Physics (2)
- UN4000 Remote Sensing Seminar (1)
  (1 credit of UN4000 may be used in addition to the 1 credit of UN4000 that is required).

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

- BL4000 Special Problems in Biology (3)
- CE4510 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)

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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
Total Credits _____

Student Date

Department Advisor Date