# Geography-Earth Science (39 Cr) Allied Sciences (21 Cr)

**Required Geography Core (15 Cr)**
- GEO 105 Physical Geography
- GEO 202 GIS I: Intro to GIS
- GEO 230 Economic Geography
- GEO 244 Land Use or 322 Urban Geography
- GEO 391 Geography Seminar

**GIS Core Courses (12 Cr)**
- GEO 339 Remote Sensing
- GEO 352 Cartography
- GEO 363 GIS II: Intermediate GIS
- GEO 420 GIS III: Advanced GIS

**GIS Technical Electives (6 Cr)**
- Select 2

**Social Sciences (6 Cr)**
- (select 2)
- PHL 332 Ethical Issues and Comp Tech
- PLS 231 State and Local Government
- PLS 271 Introduction to Public Administration
- PLS 331 City Politics and Administration
- PLS 431 Pennsylvania Local Government
- SOC 220 Social Stratification
- SOC 346 City and Community
- SOC 363 Population Problems

**Art/Computer Science/IMS (9+ Cr)**
- ART 217 Computer Design I
- CSC 110 Computer Science I (3) + CSC 106 Lab (1)
- CSC 111 Computer Science II (4)
- CSC _____ by advisement
- MIS 142 Business Computer Systems
- MIS 240 Intro to Programming Concepts
- MIS 300 Info Tech and Business Operations
- MIS 355 Database Applications

**Geography Content Electives (3 cr)**
- Select 1

**Math (3+ Cr)**
- (select 1)
- MAT 140A College Algebra (4)
- MAT 175 Precalculus
- MAT 211 Calculus
- MAT 225 Discrete Mathematics

**Technical Writing (3 Cr)**
- ENG 238 Technical/Professional Writing

**General Education Requirements (45 CR)**

Courses filled-in below are **DIRECTED general education classes that MUST be taken for the major**. All other general education courses can be chosen from the list on the back of this page.

<table>
<thead>
<tr>
<th>Foundations* (15 cr total)</th>
<th>Cr</th>
<th>Course(s)</th>
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<td>MAT 117</td>
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* One course in each area are required.

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<tr>
<th>Interconnections (9 cr total)</th>
<th>Cr</th>
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* At least 1 course each from D and G.

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<tr>
<th>Citizenship* (6 cr total)</th>
<th>Cr</th>
<th>Course(s)</th>
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<td>SOC 101</td>
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* PLS 100 and Soc 101 required.

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<tr>
<th>Natural World (9cr total)</th>
<th>Cr</th>
<th>Course(s)</th>
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<tr>
<td>N*</td>
<td>6+</td>
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<td>CSC 104</td>
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* At least 2 courses from N. CSC 104 required.

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<tr>
<th>Creativity (6 cr total)</th>
<th>Cr</th>
<th>Course</th>
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* At least 1 L course.

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- **Geography-Earth Science Program**
- **Geography, Geographic Information Systems Major – B.S.**
- **October 24, 2018**

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- **GIS Technical Electives (6 Cr)**
- **Social Sciences (6 Cr)**
- **Art/Computer Science/IMS (9+ Cr)**
- **Geography Content Electives (3 cr)**
- **Math (3+ Cr)**
- **Technical Writing (3 Cr)**
- **General Education Requirements (45 CR)**
- **Foundations* (15 cr total)**
- **Interconnections (9 cr total)**
- **Citizenship* (6 cr total)**
- **Natural World (9cr total)**
- **Creativity (6 cr total)**