Welcome to UM’s Geography Department. Geography provides a broad ranging perspective on humans as inhabitants and transformers of the face of the earth. We offer a diverse set of courses for majors, minors, and students simply seeking to broaden their knowledge of our World. Please explore our website listed below and stop by the department for more information.

We offer the following undergraduate majors, minors, and certificates:

- **B.A. in GEOGRAPHY**
  - General Geography without option
  - Community & Environmental Planning option
- **B.S. in GEOGRAPHY**
  - General Geography without option
  - Physical Geography option
- **MINOR in GEOGRAPHY**
- **CERTIFICATE IN GIS SCIENCE & TECHNOLOGY**
  Offered jointly with the College of Forestry
  Please see GIS flier

Students are encouraged to explore study-abroad options, and field experiences. Geography credits obtained through studies abroad will be applied towards the Geography degree. With approval of the student’s advisor, up to 6 college credits obtained through study-abroad and field-based courses outside the field of Geography may count towards Geography electives.

208 Stone Hall
(406) 243-4302
www.cas.umt.edu/geography

28 March 2011

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**CORE COURSES REQUIRED OF ALL GEOGRAPHY MAJORS (26 credits)**

**General Education Requirements for Major**
Students majoring in Geography should meet their general education requirements as follows:

**Mathematical Literacy**
- Students obtaining a degree in Geography must meet the mathematical literacy requirement by taking M 115, regardless of the Symbolic Systems option*

**Symbolic Systems Requirements**
- Students obtaining a B.A. Degree in Geography without option (General Geography) must meet the university-wide symbolic systems requirement by taking one year of foreign language (100 level or higher) OR taking M 115 and STAT 216.*
- Students obtaining a B.A. Degree in Geography with option in Community & Environmental Planning must meet take M 115 and STAT 216.*
- Students obtaining a B.S. Degree with or without option should see detailed requirements of those programs.
*Completion of one M or STAT course higher in number than 150 satisfies both Mathematical Literacy & Sym. Systems.

**Upper-division Writing Requirement (in the Major)**
B.A. students in Geography meet the upper-division writing requirement by EITHER completing an approved upper-division writing course (GPHY 335 or GPHY 433); OR writing a senior thesis in Geography (GPHY 499); B.S. students in Geography meet requirement as specified in description of that program.

**Recommendation for General Education Groups**
(A, E, H, L, S, N including Lab NL, X, and Y): Students are encouraged to take, in consultation with their advisor, courses that complement their interests in Geography, such as arts, history or literature of a particular ethnic group, country or region; courses with international or environmental orientation; & courses in allied sciences and/or social sciences. Students should further seek courses that improve communication, presentation, and writing skills.

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**TEACHING & GEOGRAPHY**

**Elementary:**
This curriculum requires either GPHY 121S Human Geog. OR GPHY 141S Geog. of World Regions. Some Geography courses can also count toward the 6 Concentrations. For the Science Concentration, GPHY 111N and others (ask advisor for details). For the Social Science Concentration, GPHY 121S Human Geog., GPHY 141S-3 Geog. of World Reg., GPHY 433 Cultural Ecology, GPHY 323S Economic Geog. of Rural Areas, and GPHY 421 Towns and Rural Settlement, among others.

**Secondary:**
Geography can be used as ones major or minor if a second endorsement (teaching major or minor) is also taken. Requirements would follow the BA but with the addition of C&I 428. Alternatively, those majoring in Earth Science can use ERTH 303N towards that major. Those majoring in Comprehensive Social Sciences can take any 12 credits in Geography as one of their fields. And finally, a Minor in Geography (along with C&I 428) can contribute to your degree.

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**Introduction to Geography (7 credits)**
- GPHY 111N-3 Introduction to Physical Geography
- GPHY 112-1 Physical Geography Laboratory
- GPHY 121S-3 Introduction to Human Geography

**Regional Geography Course (3 credits)**
- GPHY 141S-3 Geography of World Regions — or one of the following —
  - GPHY 144 MT Mountains
  - GPHY 241S Montana
  - GPHY 243X Africa
  - GPHY 245X The Middle East
  - GPHY 342 North America
  - GPHY 347 Regional Geography (Multiple Regions)

**Geographic Methods Courses (7 credits)**
- GPHY 381-1 Principles of Digital Cartography
- GPHY 382-1 Digital Cartography Laboratory (with GPHY 381)
- GPHY 385-3 Field Techniques

**Upper-Division Systematic Geography Courses (9 credits)**
One upper-division course each in the fields of:
- **Geography and Society** (GPHY 323 Economic Geog. of Rural Areas, GPHY 421 Towns and Rural Settlement, GPHY 423 Migration and Population Change, GPHY 443 Cultural and Global Competence, GPHY 515 Advanced Human Geog.)
- **Physical Geography** (ERTH 303N Weather and Climate, GPHY 317 Geomorphology, GPHY 411 Biogeography, GPHY 438 Mountains Field Study, GPHY 525 Adv. Physical Geog., GPHY 538 Mountain Studies Seminar)
- **Human-Environment Interaction** (GPHY 335 Water Policy, GPHY 336 Exploration and Discovery, GPHY 433 Cultural Ecology, GPHY 434 Food and Famine, GPHY 435 Environmental Hazards and Planning)
**B.A. in GEOGRAPHY**

**General Geography without Option**  
_(minimum 36/maximum 60 credits)_

The B.A. in Geography is the most flexible degree and offers the most customization to a students goals. In addition to completing the requirements for ALL majors, students must complete at least 10 but no more than 34 elective credits in Geography (for a total of at least 36 and no more than 60 Geography credits).

**B.S. in GEOGRAPHY**

**General Geography without Option**  
_(minimum 36/maximum 60 credits)_

The B.S. in Geography is designed to accommodate those interested in pursuing more technical areas of study and work in the field of Geography, such as aspects of geospatial technologies, environmental planning, and physical geography.

**Symbolic Systems Requirement**  
Geography students pursuing the B.S. in Geography must meet the symbolic systems requirement by taking M 115 and STAT 216, OR just one of M 162, M 171, or STAT 451. Regular calculus (M 171) is strongly recommended.

**Additional Science Coursework**  
In addition to completing the core requirements for ALL geography majors, students electing the B.S. option must complete 6-10 additional credits (a two-course sequence) of science coursework. The classes must be selected by the student and approved and advisor as appropriate to individual student goals (e.g., BIO 105N and BIE 172N).  
___ Science Course 1  ___ Science Course 2

**Senior Thesis or Science-based Writing Course**  
Students pursuing the B.S. must either complete a senior thesis OR complete an upper-level science-based writing class (e.g. GPHY 335—tell your prof you are using for req., GEO 320, GEO 498, BIO 470, BIO 475). See UM’s GenEd Req.’s for a list of potential science-based classes & consult your advisor.

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**B.A. in GEOGRAPHY**

**Community & Environmental Planning Option**  
_(minimum 38/maximum 60 credits)_

In addition to General B.A. curriculum, the following are needed:

**Required Courses (18 credits, as 6 can coincide with upper-division systematic core requirements for all Geography majors):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>GPHY 465-3</td>
<td>Planning Principles &amp; Processes</td>
</tr>
<tr>
<td>GPHY 468-3</td>
<td>Community &amp; Regional Analysis</td>
</tr>
<tr>
<td>GPHY 469-1</td>
<td>Planning &amp; Analysis Laboratory (with 468)</td>
</tr>
<tr>
<td>GPHY 486-3</td>
<td>Transport, Planning, &amp; GIS</td>
</tr>
<tr>
<td>GPHY 489-1</td>
<td>Cartography/GIS Laboratory (with 486)</td>
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**Select 4 of the following Upper Division systematic courses**:  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>GPHY 323-3</td>
<td>Economic Geography of Rural Areas</td>
</tr>
<tr>
<td>GPHY 335-3</td>
<td>Water Policy</td>
</tr>
<tr>
<td>GPHY 421-3</td>
<td>Towns and Rural Settlement</td>
</tr>
<tr>
<td>GPHY 432-3</td>
<td>The Human Role in Environmental Change</td>
</tr>
<tr>
<td>GPHY 435-3</td>
<td>Environmental Hazards &amp; Planning</td>
</tr>
</tbody>
</table>

**Electives**:  
Community Planning Group  
GPHY 442-3 Reg. & Rocky Mnt West  
GPHY 443-3 Migr. & Pop. Change  
GPHY 444-3 Cult. & Global Comp  
ANTH 451-3 Cultural Res. Man.  
EVST 450-3 Food, Ag., & Env.  
EVST 477S-3 Env. Justice Issues FOR 475-3 Soci. of Environ. & Dev.  
GEOG 344-3 The Community  
GEOG 110S-3 State & Local Gov't.  
GEOG 111S-3 State & Local Gov't.

GIS Science Group  
GPHY 487-3 Rem. & Raster GIS  
GPHY 489-1 Lab (with GPHY 487)  
GPHY 488-3 Thematic Cart. & GIS  
GPHY 489-1 Lab (with GPHY 488)  
CADX 110-2 Comp.-Aided Design (offered at COT)

Native American Communities  
NAS 324X-3 Indians of Montana Since the Reservation Era  
NAS 341-3 Contemporary Issues of American Indians  
NAS 400X-3 Tribal Sovereignty

**Environmental Planning Group**  
ERTH 303N-3 Weather & Climate  
GPHY 317-3 Geomorphology  
GPHY 411-3 Biogeography  
GPHY 432-3 Hum. Role in Env. Change FOR 424-3 Community For. & Con.  
FOR 481-3 Forest Planning FOR 485-3 Watershed Management

Policy Group  
EVST 502-3 Env. Law for Non-Lawyers  
EVST 560-3 Env. Impact Analysis  
EVST 562-3 Nat. Res. Policy & Admin

For Seniors with Qualifying GPA  
GPHY 560-3 Sem. in Planning  
GPHY 564-3 Planning Design  
GPHY 580-3 Sem. in GIS & Cart.  
GPHY 587-3 Dig. Imag. Anal. & Model.  
GPHY 588-3 Vector GIS  
COMM 512-3 - Sem. Interper. Conflict  
COMM 514-3 - Alt. Dispute Resolution.  
EVST 540-3 Watershed Con. Ecology  
EVST 560-3 Env. Impact Analysis  
SOCI 512-3 Sem. Rural & Env. Change

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**B.S. in GEOGRAPHY**

**Physical Geography Option**  
_(minimum 41/maximum 60 credits)_

In addition to General B.S. curriculum, these are required:

**Symbolic Systems Requirement**  
This MUST be fulfilled with M 171, M 172, STAT 451, or above.

**Additional Mathematics Course**  
An additional M or STAT course must be taken. For instance, if M 171 has been taken, then M 172 is suggested as well.

**Additional Science Coursework**  
The Science requirement (6-10 credits) for the B.S. MUST be met with one of the following sequences:

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CHMY 123-4</td>
<td>Org. &amp; Biol. Chem. (for those interested in biological cycling)</td>
</tr>
<tr>
<td>PHSX 216-4</td>
<td>Physics w/ Calc</td>
</tr>
<tr>
<td>PHSX 217N-4</td>
<td>Physics w/ Calc II (interests in atm dynamics or hydrologic modeling)</td>
</tr>
</tbody>
</table>

**Required Courses**:  
___ ERTH 303N-3 Weather & Climate  
___ GPHY 317-3 Geomorphology  
___ GPHY 411-3 Biogeography

___ CHMY 123-4 Org. & Biol. Chem. (for those interested in biological cycling)  
___ PHSX 205N-4 College Physics I  
___ PHSX 207N-4 College Physics II

___ PHSX-215N-4 Physics w/ Calc  
___ PHSX-217N-4 Physics w/ Calc II (interests in atm dynamics or hydrologic modeling)  
___ BIO 105-3 Intro. Botany  
___ BIO 172N-3 Intro. Ecology (for those interested in ecological interactions)

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**Minor in GEOGRAPHY**  
_(minimum 19 credits)_

A Minor in Geography is available. For a minor, a student must complete a minimum of 19-20 credits including: GPHY 121S and 111N; GPHY 145 or other regional course; GPHY 112, GPHY 385 or GPHY 381 and 382; two upper-division systematic courses from the fields of geography and society, physical geography, and human-environment interaction (see list under requirements for the Major).