**MSU Geospatial Curriculum (as of Fall 2020)**

**Geospatial Undergraduate Curriculum**

**GPHY 284** (Earth Sciences Fall/Su, & LRES Spr)

*Intro to GIS Science & Cartog, 3 Credits*

Foundational course for geospatial curriculum, focus on GIS, also introduces GPS & Remote Sensing

- **GPHY 284** – (Summer, 4 wks)
- **GPHY 284** – (Spr, Fall)

**GPHY 384** (Spr, Fall)

*GIS and Spatial Analysis, 3 Credits*

Advanced data model concepts in the context of spatial analysis.

**GPHY 384** – (Spr, Fall)

**GPHY 284** – (Spr, Fall)

**GPHY 375** (Spr, Fall)

*GPS Fundamentals /App in Mapping, 3 Credits*


**GPHY 375** – (Spr, Fall)

**GPHY 284** – (Spr, Fall)

**GPHY 358** (Spr, Fall)

*GPS Service Learning, 1 Credit modules*

Participation in one of three 1) Gallatin County Search and Rescue (SAR) trail mapping; 2) Urban mapping projects with City of Bozeman GIS; 3) AGAI canal mapping to update the Gallatin Valley inventory of water resources.

**GPHY 358** – (Spr, Fall)

**GPHY 358** – (Spr, Fall)

**GPHY 426/429R** (Spr)

*Remote Sensing, 3 Credits*

Intended for students not in geospatial or GIS majors or minors. Theory and application of remote sensing, the electromagnetic spectrum, earth-energy interactions, and operation of multispectral sensors.

**GPHY 426/429R** – (Spr)

**GPHY 426/429R** – (Spr)

**GPHY 358** – (Spr, Fall)

**GPHY XXX** (Pending)

*Advanced Remote Sensing*

**GPHY 484 R** – (Spr)

*Applied GIS and Spatial, 3 Credits*

Semester projects apply theory and concepts to a project related to student’s discipline.

**GPHY 484 R** – (Spr)

**GPHY 284** – (Spr, Fall)

**GPHY 357** (Spr, Fall)

*GPS Fundamentals /App in Mapping, 3 Credits*


**GPHY 357** – (Spr, Fall)

**GPHY 284** – (Spr, Fall)

**GPHY 358** (Spr, Fall)

*GPS Service Learning, 1 Credit modules*

Participation in one of three 1) Gallatin County Search and Rescue (SAR) trail mapping; 2) Urban mapping projects with City of Bozeman GIS; 3) AGAI canal mapping to update the Gallatin Valley inventory of water resources.

**GPHY 358** – (Spr, Fall)

**GPHY XXX** (Pending)

*Advanced Remote Sensing*

**GPHY 484 R** – (Spr)

*Applied GIS and Spatial, 3 Credits*

Semester projects apply theory and concepts to a project related to student’s discipline.

**GPHY 484 R** – (Spr)

**GPHY 284** – (Spr, Fall)

**GPHY 357** (Spr, Fall)

*GPS Fundamentals /App in Mapping, 3 Credits*


**GPHY 357** – (Spr, Fall)

**GPHY 284** – (Spr, Fall)

**GPHY 358** (Spr, Fall)

*GPS Service Learning, 1 Credit modules*

Participation in one of three 1) Gallatin County Search and Rescue (SAR) trail mapping; 2) Urban mapping projects with City of Bozeman GIS; 3) AGAI canal mapping to update the Gallatin Valley inventory of water resources.

**GPHY 358** – (Spr, Fall)

**GPHY XXX** (Pending)

*Advanced Remote Sensing*

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Semester projects apply theory and concepts to a project related to student’s discipline.

**GPHY 484 R** – (Spr)

**GPHY 284** – (Spr, Fall)

**GPHY 357** (Spr, Fall)

*GPS Fundamentals /App in Mapping, 3 Credits*


**GPHY 357** – (Spr, Fall)

**GPHY 284** – (Spr, Fall)

**GPHY 358** (Spr, Fall)

*GPS Service Learning, 1 Credit modules*

Participation in one of three 1) Gallatin County Search and Rescue (SAR) trail mapping; 2) Urban mapping projects with City of Bozeman GIS; 3) AGAI canal mapping to update the Gallatin Valley inventory of water resources.

**GPHY 358** – (Spr, Fall)

**GPHY XXX** (Pending)

*Advanced Remote Sensing*

**GPHY 504**

*GIS Research Fundamentals, 3 Credits*

**GPHY 504** – (On-line, Pending) MCI

**LRES 525** (Spr)

*Applied Remote Sensing, 3 Credits*

Emphasis is on using remote sensing technologies for solving applied land resource issues.

**LRES 525** – (Spr)

**LRES 505** (On-line, Pending) MCI

*Concepts of GIS in Env Sci (Summer, 8 wks)*

**LRES 505** – (On-line, Pending) MCI

**LRES 525** (Spr)

*Applied Remote Sensing, 3 Credits*

Emphasis is on using remote sensing technologies for solving applied land resource issues.

**LRES 525** – (Spr)

**LRES 505** – (On-line, Pending) MCI

*Concepts of GIS in Env Sci (Summer, 8 wks)*

**LRES 505** – (On-line, Pending) MCI

**LRES 525** (Spr)

*Applied Remote Sensing, 3 Credits*

Emphasis is on using remote sensing technologies for solving applied land resource issues.

**LRES 525** – (Spr)

**LRES 505** – (On-line, Pending) MCI

*Concepts of GIS in Env Sci (Summer, 8 wks)*

**LRES 505** – (On-line, Pending) MCI

**LRES 525** (Spr)

*Applied Remote Sensing, 3 Credits*

Emphasis is on using remote sensing technologies for solving applied land resource issues.

**LRES 525** – (Spr)

**LRES 505** – (On-line, Pending) MCI

*Concepts of GIS in Env Sci (Summer, 8 wks)*

**LRES 505** – (On-line, Pending) MCI

**LRES 525** (Spr)

*Applied Remote Sensing, 3 Credits*

Emphasis is on using remote sensing technologies for solving applied land resource issues.

**LRES 525** – (Spr)

**LRES 505** – (On-line, Pending) MCI

*Concepts of GIS in Env Sci (Summer, 8 wks)*

**LRES 505** – (On-line, Pending) MCI

**LRES 572** (Fall, On-line)

*Frontiers in Remote Sensing, 1 Credit*

**LRES 572** – (Fall, On-line)

**LRES 573** (Fall, On-line)

*Remote Sensing Applications in Env Sci*

**LRES 573** – (Fall, On-line)

**GPHY 591**

*Geospatial Special Topics, 1-4 Credits*