**Cover Sheet for New Undergraduate Curriculum Proposals**

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| **Date: 2/14/2020** | **Proposal Number:**  (Assigned by the Registrar)  **Contact Person: Andrew Foy** |
| **Department: GEOS** |
| **Current Course or Program ID:** |

**Proposal Category:** (🗸 all that apply). A separate cover sheet must be submitted for each proposal.

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| --- | --- |
| \_\_\_\_ Course Prerequisite Change | \_\_\_\_ Change to Catalog Description |
| \_\_\_\_ Course Title Change | \_\_\_\_ Minor Change to Course |
| \_\_\_\_ Course Deletion | \_\_\_\_ New Course |
| \_\_\_\_ Course Number Change | \_\_\_\_ Program Revision |
| \_\_\_\_ Course Credit Hour Change | \_\_X\_\_ New or Discontinued Program  (Major, minor, or certificate) |
| \_\_\_\_ Course Syllabus Change |  |

**Other Proposal Requirements:** (🗸 as applies and attach form)

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| **\_\_\_\_** | For New Course Proposals, attach the New Course Proposal. |
|  | For New or Discontinued Majors or Certificates, or significant changes in program requirements contact the SCHEV liaison, the Assistant Provost for Academic Operations, to compose and attach the proposal in SCHEV format. |

**Proposal Description with Rationale:** For changes in catalog entries or syllabi, include the current language and use track changes to indicate proposed changes. Explain why the change is desired.

The Department of Geospatial Science will create a new GIS, Remote Sensing and Data Analytics/Visualization minor at Radford University, designed to address the growing need to analyze and visualize spatial and non-spatial data. This program provides students with essential mapping, GIS, remote sensing and geospatial analysis skills for a wide variety of disciplines and topics, such as geography, geology, biology, natural resources, health, demographics, marketing, environmental issues, energy, infrastructure, etc. Student will learn how to analyze various types of spatial and non-spatial data, and will explore and develop various visualizations and artistic expressions of that data, which includes maps and other cartographic products, graphs, infographics, interactive dashboards, 3D visualizations and virtual reality environments.

**Effective Date**: Fall 2020

Reason for requesting an alternative effective date:

# GIS, Remote Sensing, and Data Analytics/Visualization Minor (17 – 19 credit hours)

**Introduction:**

The GIS, Remote Sensing and Data Analytics/Visualization minor addresses the growing need to analyze and visualize spatial and non-spatial data. This program provides students with essential mapping, GIS, remote sensing, virtual reality, and geospatial analysis skills for a wide variety of disciplines and topics, such as geography, geology, biology, computer science, natural resources, health, demographics, marketing, environmental issues, energy, infrastructure, etc. Student will learn how to analyze various types of spatial and non-spatial data, and will explore and develop various visualizations and artistic expressions of that data, which includes maps and other cartographic products, graphs, infographics, interactive dashboards, 3D visualizations and virtual reality environments.

**Required Core Classes (7 credits):**

* GEOS 125 – Introduction to Geospatial Data and Technologies (3)
* GEOS 250 or ITEC 250 – Introduction to Geographic Information Systems (4)

**Analytics Track (10 - 12 credits):**

**Required:**

* GEOS 425 – Remote Sensing (4)

**Two electives from the list below:**

* GEOS 270 – Fundamentals of Cartography (4)
* GEOS 315 – Intermediate GIS Concepts (4)
* GEOS 380 – Spatial Analysis Techniques (4)
* GEOS 391 – Introduction to Virtual, Augmented and Mixed Reality (3)
* GEOS 410 – Advanced GIS: Data Management, Modeling, Programming and Web Application Development (4)
* GEOS 480 – Seminar in Geospatial Science (3)
* GEOS 498 – Independent Study in Geospatial Science (3)
* ITEC 304 - Database from the Manager's Perspective (3)
* ITEC 340 - Database I (3)

**Visualization Track (10 credits):**

**Required:**

* GEOS 270 – Fundamentals of Cartography(4)
* ARTG 280 – Introduction to Graphic Design (3)
* GEOS 391 – Introduction to Virtual Reality, Augmented Reality and Mixed Reality (3)

*\*Students can get credit for both tracks if all the required courses for both tracks are taken (21 credits).*

*\*Student cannot receive a Geospatial Science Major and a GIS, Remote Sensing, and Data Analytics/Visualization Minor.*

**Implementation:**

No new resources required.

**Target:**Students from various disciplines that want skills in geospatial analysis, cartography and visualization.

## **Approval/Recommendation Signature Sheet for Undergraduate Curriculum Proposals**

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| **Signature** | | **Title** | **Date** |
|  | | Department Curriculum Committee Chair | 4/21/20 |
|  | | Department Chair (on behalf of faculty) | 4/21/20 |
|  | | College Curriculum Committee Chair |  |
|  | | College Dean |  |
| For courses proposed to be included in the Core Curriculum: | | | |
|  | | Core Curriculum Advisory Committee Chair |  |
| For new majors and certificates: | | | |
|  | Library Liaison | |  |
| For new or discontinued majors, minors, certificates, concentrations, options or significant changes in program requirements: | | | |
|  | | Faculty Senate President following review by the Faculty Senate |  |
|  | | Provost and VP for Academic Affairs |  |
| For proposals going to BOV, SCHEV and/or SACSCOC: | | |  |
|  | | President |  |
|  | | Board of Visitors approval date |  |
|  | | SCHEV approval date |  |
|  | | SACSCOC approval date |  |
|  | | Entered into catalog by Registrar’s Office |  |