Geographic Information Systems (GIS), BS Major (2024 – 2025)
Total 30 sh

Category	Courses	
Required Courses ***12 sh***	GEOG 060 – Introduction to Digital Mapping GEOG 160 - Intermediate Geographic Information Systems GEOG 170 - Advanced Geographic Information Systems (GIS*)* **AND ONE OF THE FOLLOWING:** GEOG 001 – (BH) Global Environments and Cultures GEOG 002 - (BH) People, Place, and Power GEOG 003 - (BH) The Geography of a Globalizing World	GEOG 191 – Seminar: Geographic Methodology **OR** GEOG 180 – Field Studies in Geography GEOG 004 – (BH) Cultural Geography GEOG 005 – (BH) Population and Migration Geography GEOG 080 – (BH) Global Transportation and Logistics (credit for GEOG 080 or GS 120, not both)
Applications and Methods ***6 sh***	CSC 015 - (CS) Fundamentals of Computer Science I: Problem Solving and Program Design CSC 170 - Principles of Database Management ENGG 110 - Project Management GEOG 159 - (IS) Creating Digital Maps GEOG 161 - Geographic Information Systems (GIS) for the Natural Sciences	GEOG 162 - (IS) Geospatial Remote Sensing SBLY 145 - Geospatial Analysis in Sustainability GEOL 104 A-Z - Special Topics in Geosciences **Specifically:** GEOL 104A - Geohazards IT 031 - Data-driven Web Application Development IT 117 - Database Management Systems
Mathematics ***6 sh***	**CHOOSE ONE OF THE FOLLOWING:** MATH 008 - Elementary Mathematical Statistics MATH 050 - (MA) Precalculus MATH 137 - (MA) Mathematical Probability and Statistics ECO 184 - (BH) Empirical Methods in Economics SOC 180 - Statistics in Sociology PSC 149 - Political Analysis and Statistics	BIO 124 - Biostatistics PSY 040 - Statistics **AND ONE OF THE FOLLOWING:** MATH 061 - (MA) Basic Calculus with Applications MATH 061A - (MA) Basic Calculus MATH 071 - (MA) Analytic Geometry and Calculus I
Natural Science ***3 sh***	**CHOOSE ONE OF THE FOLLOWING:** PHYS 001A - (NS) Elementary Physics PHYS 001B - (NS) Elementary Physics Laboratory CHEM 003A - (NS) General Chemistry I CHEM 003B - (NS) General Chemistry Laboratory I	GEOL 001 - (NS) Planet Earth GEOL 005 - (NS) Environmental Geology **OR** 3 semester hours of Biology, chosen under advisement from the chair of the Department of Global Studies and Geography
Electives ***3 sh***	**CHOOSE ONE THE FOLLOWING (with adviser's permission):** BIO 142 - Urban Habitats BIO 136 - General Ecology BIO 170 - Urban Ecology CSC 015 - (CS) Fundamentals of Computer Science I: Problem Solving and Program Design CSC 016 - (CS) Fundamentals of Computer Science II: Data Structures, Algorithms and Object-Oriented Programming CSC 120 - Algorithms and Data Structures CSC 132 - Computational Modeling CSC 157 - Introduction to Data Mining CSC 170 - Principles of Database Management ECO 010 - (BH) Economics, Environment and Community ECO 165 - Urban and Regional Economics ENGG 010 - Computational Methods in Engineering ENGG 047 - Environmental Engineering ENGG 060 - Water Quality for Environmental Engineers ENGG 110 - Project Management ENGG 112 - Engineering Drawing ENGG 120 - Transportation Engineering I GEOG 005 - (BH) Population and Migration Geography GEOG 006 - (BH) Resources and Energy Geography GEOG 080 – (BH) Global Transportation and Logistics(credit for GEOG 080 or GS 120 not both) GEOG 102 - (BH) Population, Resources and Environment GEOG 103 - (BH) Cities and Suburbs GEOG 135 - (BH) Economic Geography GEOG 159 - (IS) Creating Digital Maps GEOG 161 - Geographic Information Systems (GIS) for the Natural Sciences GEOG 162 - (IS) Geospatial Remote Sensing GEOG 193 - Seminar: Economic Geography GS 001 - (IS) Introduction to Global Studies GS 120 - (IS) Global Transportation and Logistics(credit for GEOG 080 or GS 120 not both)	GEOL 001 - (NS) Planet Earth GEOL 005 - (NS) Environmental Geology GEOL 033 - Environmental Geomorphology **Note: GEOL courses counted for the natural science requirement do not count as electives** HPR 068 - Environmental Health HPR 070 - Epidemiology HPR 160 - Global Health Issues IT 030 - Web Development and Analytics for Business IT 031 - Data-driven Web Application Development IT 076 - Introduction to E-Commerce IT 117 - Database Management Systems JRNL 055 - Design and Visual Strategies JRNL 056 – Publication Design JRNL 057 - Web and Publication Design for Journalists JRNL 059 - Information Design JRNL 071 - Health, Science and Environmental Reporting JRNL 083 - Data Journalism MASS 110 - Media and Urban and Suburban Communication MASS 130 - Social Media, Technologies and Policy MKT 144 - Marketing Research and Analytics MKT 172 – Principles of Exporting and Importing PHI 101 - (HP) Ecology and Environmentalism PHI 133 - (HP) Ethics and the Natural Environment PHI 138 - (HP) Ethics and Sustainability: Personal, Social and Corporate Responsibility SBLY 002 - (IS) Sustainability Planning and Policy SBLY 145 - Geospatial Analysis in Sustainability SOC 141 - (BH) Urban America SOC 147 - (BH) World Population SOC 180 - Statistics in Sociology WSC 050 - Scientific Writing

Special Topics Courses and Internships	**UP TO 6 SH CAN BE COUNTED AS ELECTIVES (with permission of chairperson):** GEOG 104 A-Z - Special Topics in Geography GEOG 151 – Undergraduate Research in Geography GEOG 152 - Undergraduate Research in Geography	GEOG 180 - Field Studies in Geography GEOG 190 - Internship in Geography GS 190 - Internship in Global Studies **Note: many of the courses listed under the rubric of electives may have prerequisites**

Distribution courses that count toward the B.S. in GIS (2024 – 2025)

Category		
Natural Sciences (NS)	PHYS 001A - Elementary Physics PHYS 001B - Elementary Physics Laboratory CHEM 003A - General Chemistry I	CHEM 003B - General Chemistry Laboratory I GEOL 001 - Planet Earth GEOL 005 - Environmental Geology
Mathematics (MA)	MATH 050 - Pre-Calculus MATH 137 - Mathematical Probability and Statistics MATH 061 - Basic Calculus with Applications	MATH 061A - Basic Calculus MATH 071 - Analytic Geometry and Calculus I
Computer Science (CS)	CSC 015 - Fundamentals of Computer Science I: Problem Solving and Program Design	CSC 016 - Fundamentals of Computer Science II: Data Structures, Algorithms and Object-Oriented Programming
Behavioral Social Sciences Distribution (BH)	ECO 184 - Empirical Methods in Economics ECO 010 - Economics, Environment & Community GEOG 005 - Population and Migration Geography GEOG 006 - Resources and Energy Geography GEOG 080 - Global Transportation and Logistics	GEOG 102 - Population, Resources, and Environment GEOG 103 – Cities and Suburbs GEOG 135 - Economic Geography SOC 141 - Urban America SOC 147 - World Population
History, Philosophy, Religion (HP)	PHI 101 - Ecology and Environmentalism PHI 133 - Ethics and the Natural Environment	PHI 138 - Ethics & Sustainability-Personal, Social, & Corporate Responsibility
Interdisciplinary Studies (IS)	GEOG 159 – Creating Digital Maps GEOG 162 - Geospatial Remote Sensing	GS 001 - Introduction to Global Studies GS 120 - Global Transportation and Logistics SBLY 002 - Sustainability Planning and Policy