

**Volgenau School of Engineering - Applied Computer Science, BS
with Concentration in Geography**

Catalog Year: 2019 - 2020			Grades	
Mason Core Requirements (19 credits)	Course Information	Credits	Earned	Needed
Written Communication:	ENGH 101 (100)	3		
*Oral Communication	*Satisfied by Major Requirements			
*Quantitative Reasoning	*Satisfied by Major Requirements			
*Information Technology	*Satisfied by Major Requirements			
Arts		3		
Global Understanding	*Satisfied by Concentration Requirements (GGS 101)			
Literature		3		
Natural Science with lab		4		
*Natural Science Overview	*Satisfied by Major Requirements			
*Social & Behavioral Science	*Satisfied by Concentration Requirements (GGS 103)			
Western Civ/World History		3		
**Written Communication	ENGH 302 - **Natural Science Section Only	3		
*Capstone/Synthesis	*Satisfied by Major Requirements			
Major Requirements (94 credits) Students must earn a C or better in any course intended to satisfy a prerequisite for a computer science course. Applied Computer Science majors may not use more than one course with a grade of C- or D toward department requirements				
Computer Science Foundation Requirements (27 credits)		Credits	Earned	Needed
CS 110	Essentials of Computer Science 1	3		
CS 112	Introduction to Computer Programming	4		
CS 211	Object-Oriented Programming	3		
MATH 113	Analytic Geometry and Calculus I	4		
MATH 114	Analytic Geometry and Calculus II	4		
MATH 125	Discrete Mathematics I	3		
MATH 203	Linear Algebra	3		
Communication	COMM 100 or COMM 101	3		
Core Courses and Major Elective (25 credits)		Credits	Earned	Needed
CS 262	Introduction to Low-Level Programming	3		
CS 310	Data Structures	3		
CS 321	Software Engineering	3		
CS 330	Formal Methods and Models	3		
CS 367	Computer Systems and Programming	4		
CS 471	Operating Systems	3		
CS 483	Analysis of Algorithms	3		
Upper-level CS Elective	One CS course numbered above 400, except CS 498	3		
Concentration in Geography (42 credits)				
Concentration Foundation Requirements (21 credits)		Credits	Earned	Needed
CS 306	Synthesis of Ethics and Law for the Computing Professional (Mason C	3		
GGS 101	Major World Regions	3		
GGS 102	Physical Geography	3		
GGS 103	Human Geography	3		
GGS 110	Introduction to Geoinformation Technologies	3		
GGS 300	Quantitative Methods for Geographical Analysis	3		
STAT 344	Probability and Statistics for Engineers and Scientists I	3		
Concentration Core Requirements (21 credits)		Credits	Earned	Needed
GGS 310	Introduction to Digital Cartography	3		
GGS 311	Introduction to Geographic Information Systems	3		
GGS 411	Advanced Digital Cartography	3		
GGS 412	Air Photography Interpretation	3		
GGS 416	Satellite Image Analysis	3		
GGS 463	RS: Applied Geographic Information Systems	3		
GGS 300/400 level course		3		
Degree Notes				
Approximately 7 credits of elective courses to bring the degree total to 120 with 45 credits at the 300/400 level				
Advisor Notes:				