

**College of Arts and Sciences 2025-2026 Degree Worksheet**  
**B.S. APPLIED MATHEMATICS with Computer Science Concentration**

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**COLLEGE of ARTS & SCIENCES**  
**Language Requirement**

*All students who major in the College of Arts & Sciences are required to demonstrate competence in a second language. For complete details: <https://www.gonzaga.edu/college-of-arts-sciences/about/information-for-students/language-requirement-information>*

	Credits	Sem/Yr

**UNIVERSITY CORE REQUIREMENTS:**

► **FUNDAMENTAL CORE COURSES**

**Year 1: Understanding & Creating**

	Credits	Sem/Yr
<i>Writing</i> ENGL 101 Writing (fulfills 3 credits Writing Enriched)*	3	
<i>Reasoning</i> PHIL 101 Reasoning	3	
<i>First Year Seminar</i> Dept. 193	3	
<i>Communication &amp; Speech</i> COMM 100 Communication & Speech	3	
<i>Math</i> MATH (must be above Math 100)	3	
<i>Scientific Inquiry (2cr + 1cr lab)</i> BIOL or CHEM or PHYS 104/104L (taken year 1 or 2)	3	

**Year 2: Being & Becoming**

	Credits	Sem/Yr
<i>Christianity &amp; Catholic Traditions</i> RELI (see approved list)**	3	
<i>Philosophy of Human Nature</i> PHIL 201 Philosophy of Human Nature	3	

**Year 3: Caring & Doing**

	Credits	Sem/Yr
<i>World/Comparative Religion</i> RELI (see approved list)** (fulfills 3cr Global Studies)*	3	
<i>Ethics</i> PHIL 301 Ethics or RELI 330 Principles-Christian Morality	3	

**Year 4: Imagining the Possible**

	Credits	Sem/Yr
<i>Core Integration Seminar</i> Dept. 432	3	

**NOTE: some courses have pre-requisites, check the catalog carefully!**

► **BROADENING COURSES - see approved list\*\***

	Credits	Sem/Yr
Social & Behavioral Science	3	
Literature	3	
History	3	
Fine Arts & Design	3	

► **REQUIRED COURSE DESIGNATIONS - see approved list\*\***

	Credits	Sem/Yr
*Writing Enriched	9 total	
Social Justice	3 total	
*Global Studies	6 total	

**\*\*for list of approved RELI, Broadening & Designated courses, see : <https://mv.gonzaga.edu/academics/undergraduate-programs/general-degree-requirements-procedures/university-core>**

**B.S. APPLIED MATHEMATICS: 64 CREDITS**  
**with Computer Science Concentration**

**APPLIED MATHEMATICS 31 Credits**

<b>LOWER DIVISION</b>		<b>15 Credits</b>
Course	Course Title	Credits
MATH 157	Calculus & Analytic Geometry I	4
MATH 258	Calculus & Analytic Geometry II	4
MATH 259	Calculus & Analytic Geometry III	4
CPSC 121	Computer Science I	3

<b>UPPER DIVISION</b>		<b>7 Credits</b>
MATH 301	Fundamentals of Mathematics	3
MATH 350	Numerical Methods	3
MATH 496	Comprehensive-Applied Math**	1

*(\*\*Majors take fall semester of their final year)*

**Select one of the following two courses: 3 Credits**

MATH 321	Statistics for Experimentalists	3
MATH 422	Mathematical Statistics	3

*If MATH 422 is chosen, then one MATH 400 level elective may be replaced by a MATH 300 level elective.*

**Select one of the following two courses: 3 Credits**

MATH 335	Applied Linear Algebra	3
MATH 339	Linear Algebra	3

**Select one of the following three courses: 3 Credits**

MATH 413	Real Analysis I	3
MATH 437	Abstract Algebra I	3
MATH 457	Number Theory and Cryptography	3

**COMPUTER SCIENCE CONCENTRATION 33 Credits**

MATH 351	Combinatorics & Graph Theory	3
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**Select one of the following two courses: 3 Credits**

CPSC 122	Computer Science II	3
CPSC 222	Introduction to Data Science	3

**Select one of the following four courses: 3 Credits**

CPSC 322	Data Science Algorithms	3
CPSC 351	Theory of Computation	3
CPSC 353	Applied Cryptography	3
CPSC 450	Design & Analysis-Computer Algorithms	3

**Select three of the following six courses: 9 Credits**

MATH 328	Operations Research	3
MATH 421	Probability Theory	3
MATH 423	Stochastic Processes	3
MATH 425	Applied Statistical Models	3
MATH 426	Experimental Design	3
MATH 455	Chaos and Discrete Dynamical Systems	3

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**CPSC Elective Options:**

- CPSC 223 Algorithm & Abstract Data Structures
- CPSC 224 Software Development
- CPSC 321 Database Management Systems
- \*CPSC 322 Data Science Algorithms
- \*CPSC 323 Machine Learning & Intelligent Systems
- \*CPSC 324 Big Data Analytics
- CPSC 325 Data Science Project Lab
- CPSC 326 Organization of Programming Languages
- CPSC 331 UI/UX Design
- CPSC 332 Web Development
- CPSC 333 Mobile App Development
- CPSC 334 Linux and DevOps
- \*CPSC 351 Theory of Computation
- \*CPSC 353 Applied Cryptography
- CPSC 425 Computer Graphics
- CPSC 447 Computer Networks
- \*CPSC 450 Design & Analysis-Computer Algorithms
- CPSC 475 Speech & Natural Language Processing

\* *(indicates the recommended elective choices)*

**Check the catalog for pre-requisites when selecting electives.**

<b>Select one CPSC 200-300-400 level elective:</b>	<b>3 Credits</b>
CPSC	3

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<b>Select one CPSC 300-400 level elective:</b>	<b>3 Credits</b>
CPSC	3

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<b>Select one 300-400 level Math elective:</b>	<b>3 Credits</b>
MATH	3

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<b>Select two 400-level Math electives:</b>	<b>6 Credits</b>
MATH	3
MATH	3

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*Cannot double-count electives with another requirement.*

*Cannot use MATH 335, 339, 432, or 499 as MATH electives.*

*A maximum of three (3) total credits from the following may be counted toward Math electives: MATH 365 (may be taken for credit only once), MATH 390, MATH 490, MATH 497.*

For this Computer Science concentration only:

*MATH 260 is optional, may be counted  
as a Math 300-400 level elective*