

Degree Worksheet for the College of Arts and Sciences: 2023-2024

B.S. PHYSICS with DATA ANALYSIS CONCENTRATION

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

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	[]

UNIVERSITY CORE REQUIREMENTS:

► FUNDAMENTAL CORE COURSES

Year 1: Understanding & Creating

Writing Credits Sem/Yr
ENGL 101 Writing (fulfills 3 credits Writing Enriched)* 3 []

Reasoning
PHIL 101 Reasoning 3 []

First Year Seminar
Dept. 193 3 []

Communication & Speech
COMM 100 Communication & Speech 3 []

Math
MATH (must be above Math 100) 3 []

Scientific Inquiry (2cr + 1cr lab)
BIOL or CHEM or PHYS 104/104L (taken year 1 or 2) 3 []

Year 2: Being & Becoming

Christianity & Catholic Traditions Credits Sem/Yr
RELI (see approved list)** 3 []

Philosophy of Human Nature
PHIL 201 Philosophy of Human Nature 3 []

Year 3: Caring & Doing

World/Comparative Religion Credits Sem/Yr
RELI (see approved list)** (fulfills 3cr Global Studies)* 3 []

Ethics
PHIL 301 Ethics or RELI 330 Principles-Christian Morality 3 []

Year 4: Imagining the Possible

Core Integration Seminar Credits Sem/Yr
Dept. 432 3 []

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

► BROADENING COURSES - see approved list**

Social & Behavioral Science Credits Sem/Yr
3 []

Literature 3 []

History 3 []

Fine Arts & Design 3 []

► REQUIRED COURSE DESIGNATIONS - see approved list**

*Writing Enriched Credits Sem/Yr
9 total []

Social Justice 3 total []

*Global Studies 6 total []

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

B.S. PHYSICS: with Data Analysis Concentration 65 CREDITS

Physics Interdisciplinary Base Courses 32 Credits

Lower Level

Course	Course Title	Credits	Grade
PHYS 121/121L	Physics I + Lab	5	[]
PHYS 122/122L	Physics II + Lab	5	[]
PHYS 180	Physics Skills Seminar	1	[]
PHYS 224	Modern Physics	3	[]
PHYS 280	Physics Pathways Seminar	1	[]
MATH 157	Calculus & Analytical Geometry I	4	[]
MATH 258	Calculus & Analytical Geometry II	4	[]
CPSC 121	Computer Science I	3	[]

Upper Level

PHYS 325	Computational Physics	2	[]
PHYS 441	Advanced Lab I	2	[]
PHYS 442	Advanced Lab II	2	[]

Data Analysis Concentration 33 Credits

CPSC 222	Introduction to Data Science	3	[]
PHYS 222	Electronics	2	[]
MATH 259	Calculus-Analytical Geometry III	4	[]
MATH 260	Ordinary Differential Equations	3	[]
MATH 261	Statistics for Experimentalists	3	[]
CPSC 321	Database Management Systems	3	[]
CPSC 322	Data Science Algorithms	3	[]
CPSC 323	Machine Learning	3	[]
CPSC 324	Big Data Analytics	3	[]

Two of the following 10 courses:

6 Credits

PHYS 321	Classical Mechanics	3	[]
PHYS 322	Electricity & Magnetism	3	[]
PHYS 323	Statistical Mechanics	3	[]
PHYS 324	Quantum Mechanics	3	[]
PHYS 424	Advanced Quantum Mechanics	3	[]
PHYS 452	Optics	3	[]
PHYS 453	Solid State Physics	3	[]
PHYS 454	Nuclear & Particle Physics	3	[]
PHYS 455	Cosmology & Astrophysics	3	[]
PHYS 456	Biophysical Systems & Modeling	3	[]

Physics Majors are also encouraged to take:

Course	Course Title	Credits	Grade
MATH 259	Calculus/Analytical Geometry III	4	[]
MATH 260	Ordinary Differential Equations	3	[]
MATH 339	Linear Algebra	3	[]

and additional CPSC (Computer Science) courses.