

UW Physics Undergraduate Program: Details for the Interested Student

- Contact Information for Physics Student Services and Advising
- Major Requirements: Core + Degree Options + Capstone and Honors
- Minor Requirements
- Major Application Procedure
- Satisfactory Progress Policy
- Selected Data from 2020-22 Pre-Graduation Survey
 - Career goals
 - Research participation
 - Factors that can delay graduation
 - Preparation for program

Physics Student Services – PAT C139 – physadvs@uw.edu

- Director of Student Services

- Catherine Provost (cuala@uw.edu)
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- Staff Advisors

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- Faculty Advisor

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Me !!!

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Links to Drop-In Zoom and Appointment Calendar
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Common Physics Core (55-57 cr) – taken by all majors

- 5-quarter overview of physics (21 cr)
 - Motion; Electricity & Magnetism; Oscillations & Waves; Thermal Physics; Quantum Physics
- Key tools for doing physics (8 cr)
 - Mathematical tools
 - Electronics lab
 - Overview of physics research
- Common sequence for applying those tools (8 cr)
 - Advanced Electricity and Magnetism
- At least 4 quarters of math (18-20 cr)
 - One year of Calculus
 - Selections from Linear Algebra, Differential Equations, Vector Calculus, Partial Diff. Eqn, Complex Analysis

See <https://phys.washington.edu/major-requirements>

Physics Degree Option Requirements

	Comprehensive (+38-42 cr)	Applied (+33-36 cr)	Teaching (+38-41 cr)	Biological (+51-55 cr)
Math	Math Phys II + Another adv. math	Matlab or Python + +2 adv. math	Math Phys II + Another adv. math	Math Phys II
32x	Relativity & Particles, Quantum Mechanics; 3 of E&M, QM, Astro, Classical Mech, Stat Mech	One from “call me a physicist” list	Relativity & Particles, Quantum Mechanics; 1 more “call me a physicist”	Quantum Mechanics Statistical Physics 1 more “call me a physicist”
Lab	Two advanced labs	Data Analysis lab Two advanced labs	One advanced lab	(in bio/chem)
Capstone	Research, Teaching practicum, Internship or Seminar	Research, Teaching practicum, Internship or Seminar	Teaching practicum	bio-related research
UD Elect	2 additional Phys/Cognate Class	3 additional Phys/Cognate (may include 1 lab; 1 intro sci)	Sequence for future teachers	Biophysics
Other Sci				1 year intro chemistry 2 qtrs. Intro biology 2 additional bio/chem

Physics Capstone

- Spirit of the Requirement:

Use critical thinking to independently apply skills and knowledge acquired in the physics curriculum to an activity outside the classroom

- Ways to meet the requirement:

- Research for credit in physics or astronomy
- Honors thesis (**NEW**)
- Pedagogy course icw learning assistant in introductory classes
- Directed reading in physics course
- Senior seminar courses
- Research outside the department†
- Internship or other activity outside the department†

†requires a paper and credits to assign (either extra elective or research credits outside dept)

Physics Departmental Honors

NEWLY
REVISED

- Celebrate our top students
- Encourage students to get the experience needed for graduate school
- Requirements:
 - Physics GPA ≥ 3.6 in all courses ≥ 200 level
 - Honors thesis (PHYS 488) based on physics-related research (PHYS 499)[†]
 - Oral and Poster presentation of thesis project (PHYS 488)
 - Participation in Honors Seminar (PHYS 484-5-6)
and/or Directed Reading in Physics (PHYS 498)

[†]out of department or off-site OK with prior permission

Physics Minor (30-36 cr, plus math*)

Core (21 cr)	https://phys.washington.edu/minor-physics
Motion, Electricity & Magnetism, Oscillations & Waves, Thermal Physics, Quantum Physics	
Specialization (Pick 1)	
Physics Education (15 cr)	Physics by Inquiry Series (407-408-409)
Experimental Physics (9 cr)	Intro Laboratory Analysis (231) Electronics Lab (334) Additional Advanced Lab (6 choices)
Mathematical Physics (12 cr)	Math Physics I: Phys 227 + 2 of Math Physics II (228), Electricity & Magnetism (321, 322) and/or Quantum Mechanics (324)

*Note: Prerequisites for these classes include 15 credits of calculus sequence, plus 6-7 credits of advanced math

Declaring a Physics Major

See <https://phys.washington.edu/declaring-major>

1. Complete PHYS 123 and MATH 126.†
2. Take a physics course within the previous two quarters and be enrolled in a physics course with number > 220.
3. Develop a graduation plan and enter into UW MyPlan.
4. Personal statement addressing reasons for choosing physics and strategies for success in the major.
 - Apply online by Oct 5 (for winter admission) or April 5 (for summer/autumn admission).*
 - Meeting minimum requirements does not guarantee admission. Admission is capacity constrained, based on holistic review of a student's record.
 - New majors must agree to the department [Code of Conduct](#) and have their graduation plan approved by Physics Student Services.
 - See department [website](#) for sample graduation plans

† Will likely have an “Early” admission option during PHYS 123/MATH 126 soon

* Winter quarter for transfer students or extended premajors only

Criteria for Satisfactory Progress

- Students must take physics courses, courses from the menu of math classes, or electives in other departments that meet a requirement for the physics major. Exceptions (e.g. for double major, study abroad) should be pre-approved.
- Maintain a cumulative average GPA of at least 2.0 in all physics classes.
- Students must earn a numerical grade of at least a 2.0 in each course used to satisfy the requirements of the physics major.

See <https://phys.washington.edu/uw-physics-major-continuation-policy>

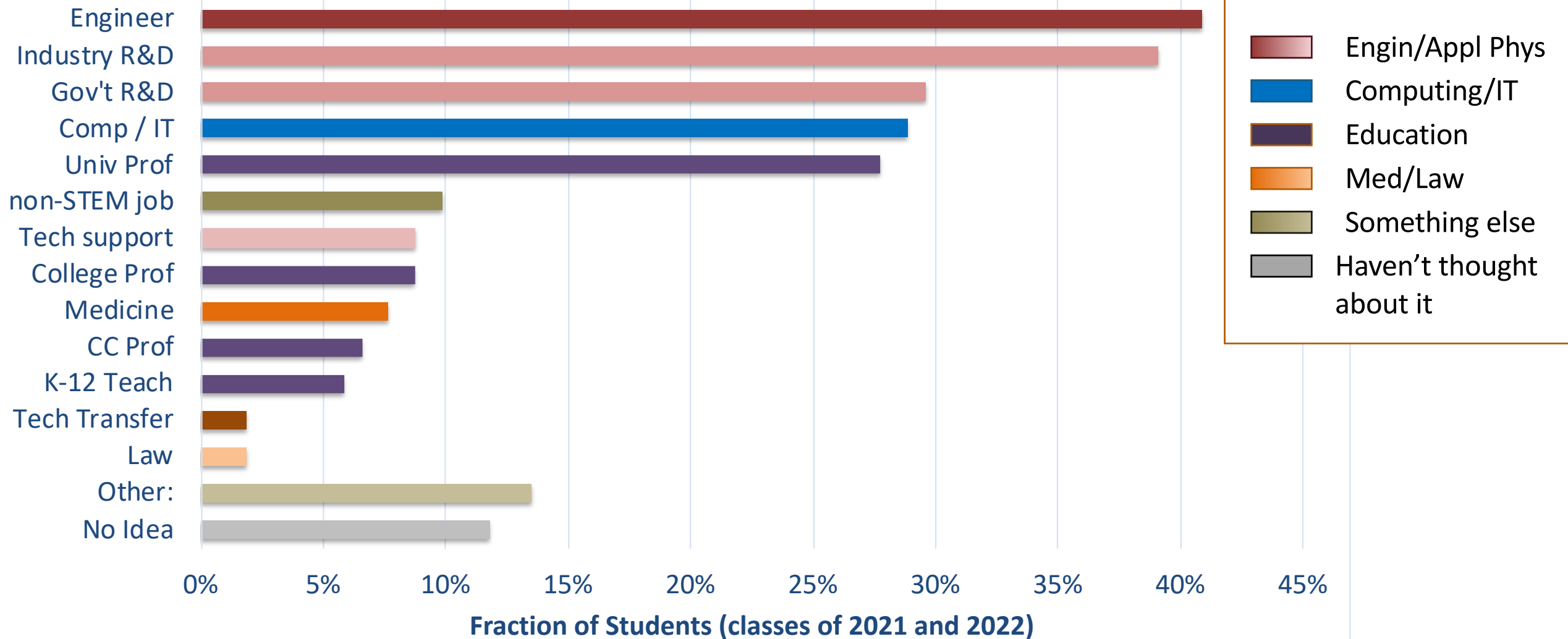
Senior Exit Survey Results

(filed 2 to 10 months prior to graduation)

- Career Goals
- Participation in Research
- Causes for delays in their graduation
- How well their previous institution prepared them for the physics major

Career Goals

What type of job do you envision having in 10-15 years?
(check all that apply)



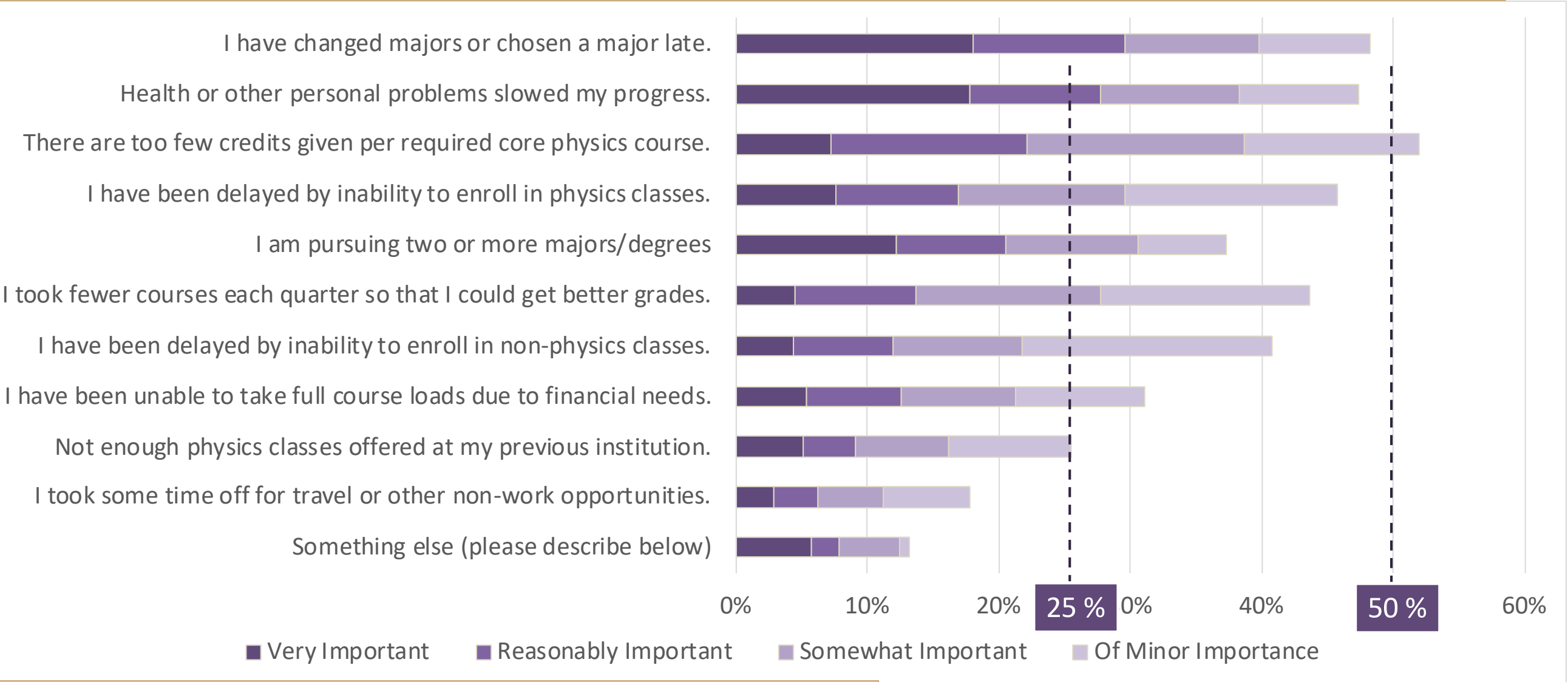
Participation in Research

- From 2019-20 Graduation Survey (filed 2 to 10 months before graduation)

Have completed research for credit	58%
Plan to do so before graduation	22%
No, I had difficulty finding project or fitting to my schedule	17%
Not interested in pursuing research	6%

- From Transcripts Aut 16 through Spr 20
 - 302 distinct students received undergraduate credit for doing research with 43 distinct physics faculty, for a total of over 1200 credit hours
 - 80% of graduates received credit for doing research either in physics or elsewhere on campus

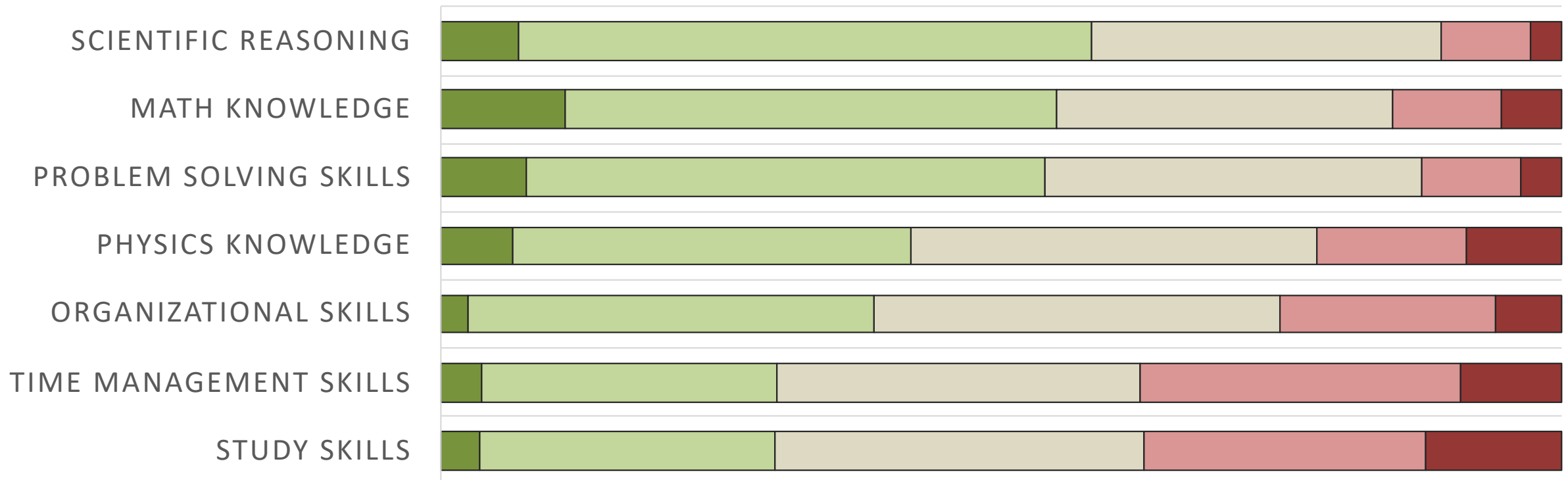
What factors impacted your ability to graduate in four years from starting college (at UW or elsewhere)?



Preparation for our program

HOW WELL DID YOUR EDUCATIONAL EXPERIENCES PRIOR TO UW
PREPARE YOU FOR THE SKILLS AND KNOWLEDGE NEEDED TO
SUCCEED IN YOUR UW PHYSICS COURSES?

■ more than I needed ■ good preparation ■ adequate preparation ■ underprepared ■ very underprepared



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