Welcome to the

Applied Physics: Data Science Major

in the College of Computational, Mathematical, and Physical Sciences

College Advisement Center
- Website: https://science.byu.edu/advisement
- Email: cmsadvising@byu.edu
- Phone: 801-422-2674
- Office: N-181 ESC



Physics & Astronomy Department
- Website: physics.byu.edu
- Email: physics_office@byu.edu
- Phone: 801-422-4361
- Office: N-284 ESC

See physics.byu.edu/undergraduate/advising

Faculty Advisor – until you have a faculty research mentor, you must meet annually to discuss career and academic options with the faculty advisor.

Traci Neilsen, traci.neilsen@byu.edu, (801) 422-7056, N-269 ESC

Deadlines to meet with Faculty Advisors each year (based on the last digit of your student number):

0 or 1	2 or 3	4 or 5	6 or 7	8 or 9
October 31	November 30	January 31	February 28	March 31

Internship Coordinator – Benjamin Frandsen
- Email: benfrandsen@byu.edu
- Phone: 801-422-2341
- Office: N345 ESC

Career Services – Heather Cook
- Website: careers.byu.edu (See Handshake flyer in packet)
- Email: heather.cook@byu.edu
- For Appointment: https://byu2.my.site.com/s/profile/005Pe00000JwbykIAB
- Office: C454 ESC

Clubs

Acoustical Society of America – Contact: Micah Shepherd (shep@physics.byu.edu), visit acoustics.byu.edu/asa-student-chapter for more information

BYU Astronomical Society – Contact: Benjamin Boizelle (boizellb@byu.edu), visit physics.byu.edu/clubs/astrosoc/home for more information

Society of Physics Students – Contact: Chris Verhaaren (chris_verhaaren@byu.edu), visit sps.byu.edu for more information

Things to Know

Resources for Graduation Planning

- Flow Charts and Packets can be found here: https://science.byu.edu/advisement/explore-majors-and-minors.
- MAPs can be found in the university catalog.
- Academic advisors in N-181 ESC will help you understand course sequencing and help you plan classes to efficiently fill requirements. They can also help you with study skills and initial career exploration as well as connecting you with correct resources.
- Plan and register from your plan on MyMAP. Your academic advisor can help you understand how to best utilize this resource.
- Evaluate your current program. Periodically major programs are updated. An academic advisor would be happy to review the differences between the programs with you to help you determine what would be best for you.
- Consider meeting with a faculty advisor in your department. Contact info is found on the first page of this packet.

Tutoring Resources and Research

- Volunteer peer tutors are available through Y-Serve if you need help with a class. Also, if you excel in a subject, consider serving your fellow students by becoming a tutor. Find out more here: https://tutoring.byu.edu/.
- Many departments provide TA Tutorial Labs and research opportunities. Check your department for details:
  - Chemistry and Biochemistry: C-100 BNSN, 801-422-3667, https://www.chem.byu.edu/department/faculty/
  - Computer Science: 3361 TMCB, 801-422-3027, cs-office@byu.edu
  - Geological Sciences: S-389 ESC, 801-422-3918, geology@byu.edu
  - Mathematics: 275 TMCB, 801-422-2061, office@mathematics.byu.edu
  - Mathematics Education: A180 ESC, 801-422-1735, office@mathed.byu.edu
  - Physics and Astronomy: N-283 ESC, 801-422-4361, physics_office@byu.edu
  - Statistics: 2152 WVB, 801-422-4505, statsec@stat.byu.edu

Prepare Early for a Career

- Check out Careers & Experiential Learning in 1134 WSC and at careers.byu.edu.
- Visit BYU's Career Studio to work on your resume, cover letter, or other professional documents; learn to navigate LinkedIn, Handshake, and CareerShift; receive networking help; practice interview skills.
- Consider doing an internship.
  - Attend the STEM and Career Fairs held in fall and winter semesters.
  - Talk to your department about internship opportunities.
  - Use LinkedIn and Handshake (see flyer in this packet) to connect with alumni and apply for jobs/internships. BYU Connect is another great resource for networking (connect.byu.edu).
  - Talk with the college or department Career Director who can help you search for internships as well as assist you with many other career related strategies (see first page of this packet).
- Consider taking StDev 317 (Career Strategies) your junior year.
- Consider taking either Chem 502, CS 502, Geol 502, Math 502, PHSCS 502, or STAT 502 (1-credit Networking Class). Class is held for 1 hour each week.

BYU
Applied Physics: Data Science BS

Requirements / Prerequisites
2026-2027 Academic Year

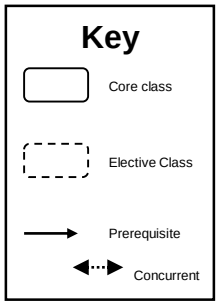
Major (66-68 Hours)

1. No more than 3 hours of D credit is allowed in major courses.
2. Complete the following: CS 111, CS 235, Math 113, PHSCS 121, PHSCS 123, PHSCS 191, PHSCS 220, PHSCS 222, PHSCS 225, PHSCS 230, PHSCS 240, PHSCS 291, PHSCS 318, PHSCS 321, PHSCS 330, PHSCS 360, PHSCS 383 PHSCS 430, STAT 201.
3. Complete one of the following: PHSCS 427, PHSCS 428, PHSCS 441, PHSCS 451, PHSCS 461, PHSCS 471, PHSCS 581
4. Complete nine hours of the following: CS 270, CS 473, CS 474, EC EN 380, Math 380, Math 510, PHSCS 530, PHSCS 580, Stat 220, Stat 230, Stat 251, Stat 286, Stat 330, Stat 386
5. Complete one of the following math options: Take either Math 302 and Math 303 OR Math 213, Math 215, Math 314, and Math 334.
6. Complete two credits from either PHSCS 492R or PHSCS 498R.
7. Take the Physics Major Field Test your last semester.

Physics Minor

Minor (20 Hours)

1. Complete the following 5 courses: Math 113, PHSCS 121, PHSCS 123, PHSCS 220, PHSCS 222.
2. Complete 4.0 hours from the following courses: PHSCS 127, PHSCS 137, PHSCS 167, PHSCS 225, PHSCS 230, PHSCS 240, PHSCS 310, PHSCS 311, PHSCS 318, PHSCS 321, PHSCS 330



Requirement 2: Choose 1

- PHSCS 427 Pre-Req: PHSCS 228, CS 111, & Math 314 or Math 302 F
- PHSCS 441 Pre-Req: PHSCS 220 & 318 FSp
- PHSCS 471 Pre-Req: PHSCS 123 & 220 & Math 302 or 314 WSu
- PHSCS 451 Pre-Req: PHSCS 222 & 318 F
- PHSCS 581 Pre-Req: PHSCS 222 F
- PHSCS 428 Pre-Req: PHSCS 228, CS 111, & Math 334 or Math 303 W
- PHSCS 461 Pre-Req: PHSCS 121 & Math 303 or 334 W

Requirement 3: Complete 9 hours

- CS 270 Pre-Req: CS 111 & Math 112 FW
- CS 473 Pre-Req: C S 270, Math 213 & 215 FW
- CS 474 Pre-req: CS 312 or Math 320 FW
- EC EN 380 Pre-Req: ECEN 240, Math 213, Math 215, Math 334, Phscs 220 F
- Math 380 Pre-Req: Math 215, CS 180, And Stat 121 or Stat 201 FW
- Math 510 Pre-Req: Math 410 F (contact department)
- PHSCS 530 Pre-req: PHSCS 330 W
- PHSCS 580 Pre-req: Math 213 or 215 F
- Stat 220 Pre-Req: Stat 121 or 201 & CS 110 or 111 F
- Stat 230 Pre-Req: Stat 121 or 201 FWSp
- Stat 251 Pre-Req: Stat 240, 250 & Math 113 FW
- Stat 286 Pre-req: Stat 230 FW
- Stat 330 Pre-Req: Stat 230 & Math 112 FW
- Stat 386 Pre-Req: Stat 121 & CS 111 FW

Note: When Taught is subject to change.

F=Fall, W=Winter, Sp=Spring, Su=Summer, S-S=Spring-Summer, SS=Spring & Summer.

Guide only—please consult MyMAP for full requirements.

Updated 10/01/2026

Handshake

At A Glance

Handshake is BYU's own job board. Employers who want to hire BYU graduates or offer internships to current students post their job openings to this website and students can apply. Just like LinkedIn, employers can view student profiles and students can network as they apply for jobs and internships.

Login to Handshake.byu.edu with your netid@byu.edu

1. Download Handshake App

- Select Continue with School
- Type in "Brigham Young University"
- Select School Login
- Input your BYU e-mail address: netid@byu.edu (it will forward emails to the e-mail you have on file with BYU)
- Handshake will send you a link via e-mail to enable your account in the app
- Navigate the app to perform all the funcions of the website that have been previoiusly mentioned

2. Complete Your Profile

- Fill in the Summary/Bio section
- Fill in your past jobs and experiences, including all the bullet points you use on your resume
- Add a professional headshot and background photo
- Information from your transcript is already uploaded
- Make your profile discoverable to employers

Remember: Every word in your profile will be searchable by students and employers

3. Apply For Jobs

- Search collections related to your major
- Search for job titles, employers, or skills
- Apply for interesting jobs that meet your skill set

4. Research Companies

- Under the Jobs tab there is an Employers tab
- Use keywords or locations to search for companies that are the right fit for you
- Plan to attend employer info sessions on BYU Campus, connect with employers at Career Fairs or set up informational interviews with them.

Remember: When looking at companies or jobs, Handshake will tell you what other BYU Students have worked there. Use this resource to network and discover more information!

5. Explore Fellow Students

- Use the People tab to find peers
- Search for fellow BYU students to view their profiles and job positions
- Attend events

Employers are
5x more likely
to view a profile that has at least one job, skill, and organization.

6. Attend Events

- The Events tab will be your key to finding info sessions interviews, and Career Fairs
- Make sure to save events you are interested in and RSVP so you do not forget to attend
- Spread the word to your friends on social media
- Use Collections to filter results in your major

BYU Career Services
1134 WSC
(801) 422-3000
careers.byu.edu

Career Services studio!

Handshake Profile Rubric

Name: Reviewer: Date:

Meets and/or Exceeds Expectations	Partially Meets Expectations	Does Not Meet Expectations
Profile includes a photo that is professionally appropriate for the student's intended industry.	Profile includes a photo but it is not professionally appropriate.	Profile does not include a photo.
My Journey section includes specific information about the student's skills, experience, and goals. The section is free from grammatical and spelling errors.	My Journey section is vague. Summary contains one or more grammatical/spelling errors.	Student has not written anything in the My Journey section.
Expected graduation date has been added to Education section.		Expected graduation date has not been added to Education section.
Experience section includes at least 2 entries. Each entry includes title, employer, dates, location and a description of the work done.	Experience section includes 2 entries but no description of work is provided.	Experience section contains less than 2 entries.
The Job Hunt, Cities, and Industries fields of the Your Career Interests section are complete.	Fill out entire Career Interests section on profile (especially types of jobs) and where you are interested in living sections (partially).	The Job Hunt, Cities, and Industries fields of the Your Interests section are not complete.
Profile includes at least 3 skills.	Profile includes 1-2 skills.	Profile does not include any skills.
A resume is uploaded to profile and is viewable by employers (public).	A resume is uploaded to the profile but not viewable by employers.	A resume is not uploaded to the profile.

All other fields/categories make your profile more robust, which makes it more likely to be viewed by employers and promote your brand.

What Can You Do with a Physics Degree?

START WITH THE KINDS OF PROBLEMS YOU WANT TO SOLVE

Physics trains you to model systems, work quantitatively, learn unfamiliar ideas quickly, and solve problems where the answer is not obvious. Those skills transfer far beyond traditional physics jobs.

Explore the Universe

Astrophysicist* - Study stars, galaxies, black holes, and the cosmos.
Astronomer* - Use observations and data to understand space.
Space Scientist - Work on spacecraft, instruments, and missions.
Planetary Scientist* - Study planets, moons, asteroids, and planetary systems.
Remote Sensing Scientist* - Use satellites and sensors to measure Earth.

Build the Future

Aerospace Engineer - Design aircraft, spacecraft, and propulsion systems.
Electrical Engineer - Design electronics, sensors, power, and communications.
Mechanical Engineer - Design machines, structures, and thermal systems.
Robotics Engineer - Build machines that sense, move, and interact.
Systems Engineer - Integrate complex hardware and software.
Semiconductor / Device Engineer - Develop chips, sensors, and electronic materials.
Photonics / Laser Engineer - Use light for sensing, imaging, and communications.
Optical / Electro-Optical Engineer - Develop cameras, lasers, sensors, and optics.
Quantum Technologist - Apply quantum mechanics to computing and sensing.
Medical Device Engineer - Design technologies for diagnosis and treatment.
Manufacturing Engineer - Improve how products are built and tested.
R&D Engineer - Develop and test new technologies.

Use Data, AI & Computing

Data Scientist - Build models and insights from datasets.
Data Analyst - Clean, analyze, visualize, and communicate data.
AI Engineer - Build AI systems that solve real problems.
Machine Learning Engineer - Develop models that learn from data.
Scientific Software Engineer - Build software and simulations for science.
Scientific Programmer - Write code for experiments and research.
Computational Scientist* - Use computing to model complex systems.
Simulation Engineer - Build computational models of physical systems.
Computer Scientist - Work in algorithms, systems, AI, or security.
Quantitative Analyst - Use math, statistics, and code in finance.
Technical Product Manager - Guide technology products from idea to launch.

Advance Medicine

Medical Physicist* - Apply physics to imaging, therapy, and safety.
Biomedical Engineer - Design devices and technologies for health.
Biophysicist* - Use physics to understand cells and disease.
Medical Imaging Scientist* - Develop MRI, CT, PET, ultrasound, and more.
Health Physicist* - Protect people from harmful radiation.
Nuclear Medicine Technologist - Use radioactive materials in medical imaging.
Nuclear Pharmacist* - Prepare radiopharmaceuticals for nuclear medicine.
Physician / Medical Doctor* - Apply science and training to patient care.
Dentist* - Use science and hands-on skills in oral health.

Discover Materials & Energy

Materials Scientist* - Develop materials with new physical properties.
Materials Characterization Scientist* - Measure materials and connect properties to performance.
Nanotechnology Researcher* - Build materials and devices at tiny scales.
Microscopy Scientist - Use advanced microscopes to study materials.
Fusion / Plasma Scientist* - Study plasmas and fusion energy.
Plasma Physicist* - Study ionized gases in space and industry.
Nuclear Engineer - Work with reactors and nuclear systems.
Renewable Energy Scientist - Work on solar, batteries, and energy systems.
Semiconductor Process Engineer - Develop processes used to manufacture microchips.

Earth, Climate & Environment

Geophysicist* - Use physics to study Earth and resources.
Atmospheric Scientist* - Study weather, climate, air, and atmosphere.
Climate Scientist* - Analyze climate systems, observations, and models.
Meteorologist - Forecast weather and study atmospheric processes.
Seismologist* - Study earthquakes and Earth structure.
Environmental Consultant - Use quantitative analysis to solve environmental problems.
Hazardous Waste Specialist - Apply science and safety to hazardous materials.

Big Problems, Business & Society

National Security Analyst - Apply technical reasoning to security problems.
Technical Consultant - Help organizations solve difficult technical problems.
Management Consultant - Help organizations diagnose problems and decide.
Financial Analyst - Evaluate companies, markets, and investments.
Technical Sales Engineer - Explain technology and help customers choose solutions.
Venture Capital Analyst - Evaluate emerging technologies and startups.
Patent Agent / Attorney* - Work where science, technology, and law meet.
Science Policy Analyst - Translate technical information into policy.
Technical Writer - Explain complex technical ideas clearly.
Entrepreneur / Startup Founder - Build a company around technology or an unmet need.

Research, Education & Communication

Accelerator Physicist* - Design, operate, or use particle accelerators.
Particle Physicist* - Investigate fundamental particles and forces.
Nuclear Physicist* - Study atomic nuclei and nuclear processes.
Condensed Matter Physicist* - Study solids, superconductors, and semiconductors.

Physics prepares you for many kinds of work - not just one job title. *Graduate study is common or often expected.

Research Groups

Group	Website
Acoustics	https://physics.byu.edu/groups/acoustics
Astronomy	https://physics.byu.edu/groups/astronomy
Biophysics	https://physics.byu.edu/groups/biophysics
Data Science	https://physics.byu.edu/groups/data-science
Education Research	https://physics.byu.edu/groups/education
Laser Science Research	https://physics.byu.edu/groups/laser-science
Materials	https://physics.byu.edu/groups/materials
Quantum	https://physics.byu.edu/groups/quantum
Theory Research Group	https://physics.byu.edu/groups/theory