

CAL POLY HUMBOLDT
University Senate
Resolution to Recommend Approval of the Health and Medical Sciences BS - New Degree
Proposal

12-25/26-ICC – November 18, 2025 – Curriculum Reading

RESOLVED: That the Health and Medical Sciences BS - New Degree Proposal, detailed in proposal [25-2933](#), be approved.

RATIONALE:

The Bachelor of Science in Health and Medical Sciences (HMS) provides a rigorous, applied, and equity-centered approach to pre-professional healthcare education that directly supports Cal Poly Humboldt's polytechnic mission and the CSU's goals for workforce development, civic engagement, and equity.

As the only university on the Northern California coast, Cal Poly Humboldt will serve as a regional hub for healthcare education, addressing critical workforce shortages in rural and underserved communities. The HMS program prepares students for advanced study and careers in medicine, pharmacy, physical therapy, physician assistant, and clinical laboratory science. It combines biological, physical, and behavioral sciences with hands-on learning experiences such as internships, clinical placements, and shadowing in regional healthcare settings.

Students gain the foundational knowledge and applied skills needed to enter professional programs or the healthcare workforce. The curriculum is designed for unit efficiency and career readiness, integrating theoretical and practical learning while emphasizing bioethics, professionalism, and service to underserved populations.

Aligned with Cal Poly Humboldt's Strategic Plan and Institutional Learning Outcomes, the HMS program advances academic excellence, community collaboration, and inclusive student success through place-based and experiential learning. By fostering partnerships with hospitals, clinics, and Tribal health organizations, the program strengthens Humboldt's role in improving healthcare access and preparing compassionate, highly skilled professionals who can meet California's evolving healthcare needs.

This degree underscores that polytechnic innovation extends beyond engineering and agriculture to encompass health, wellness, and human sciences, preparing graduates who will contribute to California's healthcare system with competence, cultural humility, and a commitment to sustainability and community well-being.

Program Description: The Bachelor of Science in Health and Medical Sciences (HMS) at Cal Poly Humboldt prepares students for a wide range of careers in the health and biomedical fields. The program integrates the biological, physical, and behavioral sciences with hands-on, community-based learning, enabling students to connect classroom knowledge with real-world healthcare experience.

Students develop a strong foundation in anatomy, physiology, chemistry, physics, and psychology, complemented by coursework in bioethics, communication, and social determinants of health. The curriculum provides all prerequisite courses required for professional programs in medicine, pharmacy, physical therapy, physician assistant, and clinical laboratory science, while equipping graduates with essential critical thinking and communication skills valued across healthcare settings.

The HMS degree emphasizes applied and experiential learning through internships, clinical shadowing, and partnerships with regional healthcare providers, clinics, and Tribal health agencies. These opportunities cultivate professional readiness and encourage graduates to remain in the North Coast region or serve other rural and underserved communities throughout California.

Students choose from five concentrations, each aligned with professional and graduate program entry requirements:

1. Pre-Medical Doctor/Doctor of Osteopathy
2. Pre-Physician Assistant
3. Pre-Physical Therapy
4. Pre-Pharmacy
5. Pre-Clinical Lab Scientist

The program emphasizes ethical practice, scientific literacy, and culturally responsive care—preparing students to meet California’s urgent healthcare workforce needs and to pursue graduate education or immediate entry into healthcare careers.

Program Overview:

- **Total Units:** 120 (including GE and university requirements)
- **Major Requirements:** 90 units
 - All courses in the major must be completed with a grade of C– or better.
- **Core (47 - 49 units):**
 - BIOL 105 Principles of Biology Units: 4
 - CHEM 109 General Chemistry I Units: 5
 - CHEM 110 General Chemistry II Units: 5
 - HED 100 Intro to Health and Well-Being Units: 3
 - HMS 401 Medical Ethics and Professionalism Units: 1
 - HMS 402 Health and Medical Sciences Connections Units: 2
 - KINS 244 Medical Terminology Units: 1
 - PHYX 106 College Physics: Mechanics and Heat Units: 4
 - PHYX 107 Electromagnetism and Modern Physics Units: 4
 - PSYC 104 Introduction to Psychology Units: 3
 - ZOOL 110 Introductory Zoology Units: 4
 - MATH 102 Algebra and Elementary Functions Units: 4

OR

- MATH 105 Calculus for the Biological Sciences and Natural Resources Units: 3
- STAT 109 Introductory Biostatistics Units: 4 (recommended for Pre-Physical Therapy, Pre-Medical/Osteopathic, and Pre-Physician Assistant students)

OR

- CHEM 341 Quantitative Analysis Units: 5 (required for Pre-Pharmacy and Pre-Clinical Lab Scientist students)
- ZOOL 113 Human Physiology Units: 4 (recommended for Pre-Physical Therapy students)

OR

- ZOOL 312 Human Physiology Units: 4 (recommended for Pre-Medical/Osteopathic, Pre-Pharmacy, Pre-Clinical lab Scientist, and Pre-Physician Assistant students)

*** 18 -19 Units of Core double count with GE.

- **Concentrations (41 - 44 units):** Students complete one (1) concentration area. Each concentration provides a focused sequence of upper-division coursework that satisfies professional school prerequisites and builds advanced knowledge in the selected discipline.
 - **Pre-Medical Doctor/Doctor of Osteopathy Concentration:** Courses include advanced biology, organic chemistry, biochemistry, physics, and anatomy to prepare students for medical or osteopathic school admissions.
 - **Pre-Physician Assistant Concentration:** Courses emphasize anatomy, physiology, psychology, microbiology, and healthcare ethics to meet physician assistant program prerequisites.
 - **Pre-Physical Therapy Concentration:** Courses include biomechanics, kinesiology, physiology, chemistry, and anatomy to prepare students for entry into Doctor of Physical Therapy programs.
 - **Pre-Pharmacy Concentration:** Coursework focuses on organic chemistry, pharmacology, microbiology, and quantitative analysis required for Doctor of Pharmacy programs.
 - **Pre-Clinical Lab Scientist Concentration:** Courses include microbiology, hematology, immunology, and advanced chemistry for preparation toward state and national CLS licensure requirements.
- **Community-Based and Applied Learning:** Students complete internships or shadowing placements (HMS 482) with local healthcare providers, hospitals, Tribal health agencies, and clinics. These experiences provide hands-on exposure to clinical practice and professional communication while addressing regional healthcare needs.
- **Capstone Requirement:** Students complete HMS 402 – Health and Medical Sciences Connections, a culminating capstone integrating scientific knowledge, ethics, and communication. The capstone includes research, reflection, and applied projects that demonstrate readiness for graduate study or entry into the healthcare workforce.

Student Learning Outcomes: Graduates of the Health and Medical Sciences B.S. will be able to:

1. Demonstrate professionalism, bioethics, and commitment to equity in diverse healthcare settings. (ILO 1, 2)

2. Apply foundational biological, physical, and behavioral science knowledge to health and medical contexts. (ILO 3, 4)
3. Locate, evaluate, and apply information relevant to advanced training in health fields. (ILO 3, 4)
4. Communicate effectively in written, oral, and quantitative forms to interpret complex health issues. (ILO 4, 5, 6, 7)
5. Integrate theoretical learning with applied experiences to improve healthcare outcomes in underserved communities. (ILO 1, 2, 4, 6)

Distinctions and Community Engagement: The HMS program is distinct within the CSU system. While several CSU campuses offer general Health Science degrees focusing on systems, law, and policy, Cal Poly Humboldt's program uniquely combines pre-professional preparation with applied learning and community-based practice. It provides all coursework necessary for admission to health professional schools in one streamlined, interdisciplinary degree.

Community partnerships have guided program development from the outset. The Health Taskforce conducted listening sessions with:

- Regional hospitals, outpatient clinics, and public health agencies
- Tribal health partners, including United Indian Health Services
- Regional community colleges (College of the Redwoods, Shasta, and Mendocino)
- Medical and professional school representatives
- Local workforce development boards and regional health leadership networks

These consultations identified the need for a locally grounded healthcare education pathway that prepares students for regional service and statewide workforce gaps.

Workforce Demand: California's healthcare workforce faces an unprecedented need for qualified professionals due to an aging population, provider retirements, and persistent shortages in rural and underserved areas.

Data from the U.S. Bureau of Labor Statistics (2023–2033) and the California Employment Development Department indicate growth across related occupations:

- Physician Assistants: +28%
- Physical Therapists: +14%
- Physicians: +4%
- Clinical Laboratory Scientists: +5%
- Pharmacists: +5%

Despite modest overall employment change in agriculture and manufacturing, healthcare remains one of the fastest-growing sectors nationally. The HMS program addresses these trends by producing graduates ready to enter or advance within rural healthcare systems where shortages are most acute.

Currently, over 115 Cal Poly Humboldt students are pursuing similar pre-health career paths across multiple departments. HMS consolidates these into one efficient, purpose-built degree, supporting time-to-degree completion and expanding access to professional healthcare training.

Community Collaboration And Transfer Pathways: The HMS program strengthens Humboldt's regional educational ecosystem through new articulation agreements and ADT on-ramps with local community colleges. Concentration-specific pathways connect to degrees such as:

- Biology, Chemistry, Kinesiology, and Public Health ADTs.

Partnerships with College of the Redwoods and UC Davis's AvenueM Pathway further expand student access to a wide range of careers in the health and biomedical fields..

Humboldt's Supervised Internship (BIOL 482) and community health collaborations provide applied learning through placements in hospitals, clinics, and non-profit health organizations, enhancing workforce readiness and retention within Northern California.

Alignment With Polytechnic Build-Out: The Health and Medical Sciences B.S. advances Cal Poly Humboldt's polytechnic build-out by expanding applied, career-connected education in health and human sciences.

- Applied Learning: Students engage in direct, experiential learning through internships, clinical placements, and research that bridge theory and practice.
- Regional Relevance: Aligns with the polytechnic goal of addressing the state's most urgent workforce and environmental needs through place-based education.
- Equity and Inclusion: Expands participation of underrepresented students in healthcare education, consistent with Humboldt's identity as a Hispanic-serving and equity-centered institution.
- Interdisciplinary Integration: Combines the natural sciences, social sciences, and behavioral sciences, reinforcing the polytechnic emphasis on collaboration across fields.
- Public Impact: Strengthens community health infrastructure through civic engagement and partnerships with healthcare providers, clinics, and Tribal health agencies.

This degree demonstrates that polytechnic innovation extends beyond engineering and agriculture—embracing health, wellness, and human sciences as vital applied disciplines serving California's people and communities.

Program Impact And Readiness: The Health and Medical Sciences B.S. is academically and operationally feasible.

- Existing courses, facilities, and faculty expertise across Biology, Chemistry, Kinesiology, and Psychology provide the program's foundation.
- New HMS and Biology courses will be implemented within the first two years with existing departmental capacity.

- No additional facilities are required; experiential components will utilize existing clinical and laboratory partnerships.

The program directly supports Cal Poly Humboldt's Strategic Plan goals in advancing academic excellence, community collaboration, and student success. It fulfills the CSU's mission to expand workforce development and civic engagement while improving health outcomes in rural and underserved regions.

Related Proposals:

- [BIOL - 443 - 25-3024 - New Course - Hematology](#)
- [BIOL - 445 - 25-3023 - New Course - Immunology](#)
- [BIOL - 455 - 25-3027 - New Course - Introduction to Cellular and Gene Therapy](#)
- [BIOL - 455L - 25-3028 - New Course - Cellular and Gene Therapy Laboratory](#)
- [HMS - 401 - 25-3015 - New Course - Medical Ethics and Professionalism](#)
- [HMS - 402 - 25-3016 - New Course - Health and Medical Sciences Connections](#)
- [HMS - 482 - 25-3017 - New Course - Health and Medical Science Internship](#)

Also references [Community Health, B.A. New Degree Proposal - 24-2678](#)

Note on Document Preparation: Portions of this resolution were developed with the support of artificial intelligence tools to enhance consistency, formatting, and clarity. All content originates from the official proposal documents and aligns with Chancellor's Office documentation standards. Each resolution is reviewed and finalized collaboratively by the Integrated Curriculum Committee Chair, committee members, and the proposal authors, with opportunities for revision prior to submission for Senate consideration.