

# ALLIED AND PROFESSIONAL HEALTH SCIENCES POST BACCALAUREATE CERTIFICATE

## Introduction

Please click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/integrative-biology/>) to see Integrative Biology Department information.

The health field offers job opportunities and rewarding careers. It is one of the fastest growing industries in the US and the Bureau of Labor Statistics has projected increasing demand and labor shortages for at least the next ten years. The CU Denver Post-Baccalaureate Allied and Professional Health Sciences Certificate was developed as an opportunity for the many students who already have a bachelor's degree and want to shift their career into this large and fast growing industry to improve employment opportunities and potential earnings.

In order to improve their position among many highly qualified applicants to health professions programs and for health science related jobs, we anticipate that many students will need to continue their higher education. The College of Liberal Arts and Sciences has developed a certificate that provides a broad foundation in STEM (Biology, Chemistry and Physics) and advanced health-oriented coursework that is essential for both graduate and professional programs and the needs of the health industry.

Students who have already completed an undergraduate degree but need additional undergraduate pre-requisite courses to apply to health professions programs (including medicine, pharmacy, dentistry, nursing, lab technicians, health research jobs and more) can benefit from the CU Denver Post Baccalaureate Allied and Professional Health Sciences Certificate. CU Denver is well-known for preparing students for applications to health careers and acceptance to health professions programs. This certificate program offers high quality, rigorous preparatory classes and exceptional health careers advising including assistance with letters of evaluation, seminars on application processes, and assistance finding clinical, research, and community service experiences to enhance applications.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their program advisor to confirm the best plans of study before finalizing them. Exceptions and substitutions must be approved by the Director of the certificate.

## Program Delivery

- This is an on-campus program.

## Declaring This Certificate

When applying to CU Denver, students should select the Undergraduate Degree-Seeking option. After indicating that the student has or will have completed a bachelor's degree, the applicant should be directed to a

screen that allows selection into the Allied and Professional Health Sciences Certificate. After admission, students should meet with a Health Professions Advisor (NC 3002) to work collaboratively to develop a course plan that best meets their academic and career goals.

## Contact Details

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## General Requirements

Students must satisfy all requirements as outlined below and by the department offering the certificate.

- Click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/academic-policies-procedures/>) for information about Academic Policies

## Certificate Requirements

1. Students must complete a total of 32 credit hours with a minimum of 15 credit hours from the approved courses at CU Denver.
2. Students must complete a minimum of 12 upper-division (3000-level and above) credit hours, from approved coursework.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. The 15 credit hours of approved courses must be completed at CU Denver. Other coursework (up to 17 credit hours) used as prerequisites or other courses applicable to the certificate program, may be taken at CU Denver or transferred from another university after evaluation and approval.

## Program Restrictions, Allowances and Recommendations

1. All upper division level courses used to satisfy the requirements for the certificate must be completed at CU Denver.
2. Students may use prior/ transfer coursework to fulfill requirements and prerequisites, as long as departmental faculty evaluate the coursework and decide they are directly equivalent to the courses at CU Denver.
3. All courses used to satisfy the requirements for the certificate must be completed within a five-year period.
4. Individual courses used to earn the certificate may carry other prerequisites that must be met before enrolling.
5. Students must complete all of the following courses or demonstrate equivalent credit through transfer coursework taken within the last 10 years.
6. A prerequisite for any course must be transferred or completed at CU Denver before enrolling in that course.

7. Graduate level courses can substitute for their undergraduate counterparts with approval.
8. Specific requirements may exist pertaining to financial aid.
9. Students must already have earned a Bachelor's degree to enroll for the certificate.
10. Students currently enrolled in Bachelor's, Master's or Doctoral degree programs are not eligible for the certificate.
11. Students who complete the certificate may not apply the courses used to earn the certificate toward a second degree, if they choose to return and seek a second degree at CU Denver.

Code	Title	Hours
<b>CU Denver Certificate Coursework</b>		
With approval, select 15 credits from the list of CU Denver Certificate Coursework (p. 2)		15
<b>Other Coursework and Allowable Transfer Courses</b>		
Select up to 17 credit hours of Other Coursework and Allowable Transfer Courses (p. 3) <sup>1</sup>		17
Total Hours		32

<sup>1</sup> May be taken at CU Denver or transferred from another university after evaluation and approval.

## CU Denver Certificate Coursework

Code	Title	Hours
ANTH 3150	Special Topics in Medical Anthropology	3
ANTH 3202	Anthropology of Health Care Policy	3
ANTH 4010/5014	Medical Anthropology: Global Health	3
ANTH 4060/5060	Evolutionary Medicine	3
ANTH 4080/5080	Global Health Practice	3
ANTH 4290/5290	Anthropology and Public Health	3
ANTH 4300/5300	Migrant Health	3
ANTH 4600/5600	Medical Anthropology	3
ANTH 4800/5800	Special Topics in Medical Anthropology	3
BIOE 3010	Bioinstrumentation	3
BIOE 3020	Introduction to Biomechanical Analysis	3
BIOE 3030	Introduction to Biomaterials	3
BIOE 3040	Physiology for Bioengineering	3
BIOE 3050	Cell & Molecular Bioengineering	3
BIOE 3051	Cell & Molecular Bioengineering Lab	1
BIOE 3060	Biostatistics, Measurement and Analysis	3
BIOE 3070	Bioengineering Lab I	3
BIOE 3071	Bioengineering Lab II	3
BIOE 3090	Introduction to BioDesign	3
BIOE 3939	Undergraduate Internship	1-6
BIOE 4035	Undergraduate BioDesign II	3
BIOE 4045	BioDesign III	3
BIOE 4053	Optics and Microscopy in Biomedical Research	3
BIOE 4063	3D Modeling for Bioengineers	3
BIOE 4064	Advanced MatLab For Bioengineers And Life Scientists	3
BIOE 4069	Advanced Biomechanics for Undergraduates	3

BIOE 4073	Neural Interfaces and Bionic Limbs	3
BIOE 4083	Polymers in Biomedical Applications	3
BIOE 4085	Tissue Engineering	3
BIOE 4420	Special Topics in Bioengineering	1-3
BIOE 4840	Independent Study in Bioengineering	1-6
BIOE 4929	Undergraduate Research Project	1-6
BIOL 3074	Human Reproductive Biology	3
BIOL 3104	Behavioral Genetics	3
BIOL 3124	Introduction to Molecular Biology	3
BIOL 3134	Advanced Topics	1-8
BIOL 3225	Human Physiology	4
BIOL 3244	Human Anatomy	5
BIOL 3521	Vertebrate Biology	3
BIOL 3525	Parasitology	3
BIOL 3611	General Cell Biology	3
BIOL 3612	Cell Biology Laboratory	3
BIOL 3621	Introduction to Immunology	3
BIOL 3654	General Microbiology	5
BIOL 3674	Endocrinology	3
BIOL 3763	Biostatistics	4
BIOL 3804	Developmental Biology	3
BIOL 3832	General Genetics	3
BIOL 3674	Endocrinology	3
BIOL 3939	Internship	1-3
BIOL 4024/5024	Introduction to Biotechnology	3
BIOL 4050	Advanced Biology Topics	1-8
BIOL 4053	Disease Ecology	3
BIOL 4055	Virology	3
BIOL 4064	Cell Biology of Disease	3
BIOL 4125	Molecular Biology Laboratory	3
BIOL 4126	Molecular Genetics	3
BIOL 4128	Topics in Molecular Biology	3
BIOL 4134	Human Genetics	3
BIOL 4144	Medical Microbiology	3
BIOL 4165	Neurobiology	3
BIOL 4225	Genomics and Bioinformatics	3
BIOL 4425	Biogeography	3
BIOL 4460	Environmental Toxicology	3
BIOL 4464	Exercise Physiology	3
BIOL 4475	Mechanisms of Human Pathology	3
BIOL 4494	Population and Evolutionary Genetics	3
BIOL 4550	Cell Signaling	3
BIOL 4622	Topics in Immunology	3
BIOL 4634	Biology of Cancer	3
BIOL 4644	Advanced Human Anatomy Laboratory	2
BIOL 4815	Structural Biology of Neurodegenerative Diseases	3
BIOL 4825	Biochemistry of Metabolic Disease	3
BIOL 4835	Biochemistry of Gene Regulation and Cancer	3
BIOL 4840	Independent Study	1-6
BIOL 4880	Directed Research	1-6
BIOL 4990	Undergraduate Research Seminar	1
CHEM 2300	Nutritional Chemistry	3

CHEM 3810	Biochemistry	4
CHEM 4810	General Biochemistry I	3
CHEM 4815	Structural Biology of Neurodegenerative Diseases	3
CHEM 4820	General Biochemistry II	3
CHEM 4825	Biochemistry of Metabolic Disease	3
CHEM 4835	Biochemistry of Gene Regulation and Cancer	3
CHEM 4845	Molecular Modeling and Drug Design	3
COMM 2500	Introduction to Health Communication	3
COMM 4500	Health Communication	3
COMM 4525	Health Communication and Community	3
COMM 4550	Rhetorics of Medicine & Health	3
COMM 4558	Digital Health Narratives	3
COMM 4575	Designing Health Messages	3
COMM 4620	Health Risk Communication	3
GEOG 3501	Geography of Health	3
HEHM 3100	Introduction to Health Humanities	3
HIST 4345	Gender, Science, and Medicine: 1600 to the Present	3
HIST 4348	Mind and Malady: A History of Mental Illness	3
IWKS 4500	Bio-Design and Innovation	3
IWKS 4520	Design for Healthful Human Longevity	3
LATN 3000	Medical Terminology	3
PHIL 4242	Bioethics	3
PHYS 3251	Biophysics of the Body	4
PHYS 3252	Biophysics of the Body NM	4
PHYS 3451	Biophysics of the Cell	4
PHYS 3452	Biophysics of the Cell NM	4
PSYC 2205	Lifespan Developmental Psychology for Health Majors	3
PSYC 2220	Biological Basis of Behavior	3
PSYC 3205	Human Development I: Child Psychology	3
PSYC 3215	Human Development II: Adolescence and Adulthood	3
PSYC 3262	Health Psychology	3
PSYC 3265	Drugs, Brain and Behavior	3
PSYC 3305	Abnormal Psychology	3
PSYC 3810	Neuropsychology	3
PBHL 1001	Race, Gender, Class, & Health	3
PBHL 2001	Introduction to Public Health	4
PBHL 3001	Introduction to Epidemiology	4
PBHL 3031	Health, Human Biology and Behavior	3
PBHL 3041	Health, Culture and Society	3
PBHL 3070	Perspectives in Global Health	3
PBHL 4080	Global Health Practice	3
SOCY 3440	Medical Sociology	3
SOCY 4110	Sociology of Health Care	3
SPAN 3740	Spanish for the Healthcare Professions I	3
SPAN 3750	Spanish for the Healthcare Professions II	3

## Other Coursework and Allowable Transfer Courses

Code	Title	Hours
BIOL 2010	Organisms to Ecosystems (Gen Bio)	3
or BIOL 2030	Honors Organisms to Ecosystems (Gen Bio)	
BIOL 2011	Organisms to Ecosystems Lab (Gen Bio)	1
or BIOL 2031	Honors Organisms to Ecosystems Lab (Gen Bio)	
BIOL 2020	Molecules to Cells (Gen Bio)	3
or BIOL 2040	Honors Molecules to Cells (Gen Bio)	
BIOL 2021	Molecules to Cells Lab (Gen Bio)	1
or BIOL 2041	Honors Molecules to Cells Lab (Gen Bio)	
BIOL 3124	Introduction to Molecular Biology	3
BIOL 3225	Human Physiology	4
BIOL 3244	Human Anatomy	5
BIOL 3521	Vertebrate Biology	3
BIOL 3525	Parasitology	3
BIOL 3611	General Cell Biology	3
BIOL 3612	Cell Biology Laboratory	3
BIOL 3621	Introduction to Immunology	3
BIOL 3654	General Microbiology	5
BIOL 3674	Endocrinology	3
BIOL 3763	Biostatistics	4
BIOL 3804	Developmental Biology	3
BIOL 3832	General Genetics	3
BIOL 3939	Internship	1-3
BIOL 4055	Virology	3
BIOL 4064	Cell Biology of Disease	3
BIOL 4125	Molecular Biology Laboratory	3
BIOL 4126	Molecular Genetics	3
BIOL 4134	Human Genetics	3
BIOL 4144	Medical Microbiology	3
BIOL 4165	Neurobiology	3
BIOL 4464	Exercise Physiology	3
BIOL 4475	Mechanisms of Human Pathology	3
BIOL 4550	Cell Signaling	3
BIOL 4622	Topics in Immunology	3
BIOL 4634	Biology of Cancer	3
BIOL 4644	Advanced Human Anatomy Laboratory	2
CHEM 1000	Foundations for General Chemistry	3
CHEM 1474	Core Chemistry: Chemistry for Everyday	4
CHEM 2031	General Chemistry I	3
CHEM 2038	General Chemistry Laboratory I	1
CHEM 2061	General Chemistry II	3
CHEM 2068	General Chemistry Laboratory II	2
CHEM 2081	Honors General Chemistry I	3
CHEM 2088	Honors General Chemistry I Laboratory	2
CHEM 2091	Honors General Chemistry II Lecture	3
CHEM 2098	Honors General Chemistry II Laboratory	2
CHEM 2300	Nutritional Chemistry	3
CHEM 3411	Organic Chemistry I	4
CHEM 3421	Organic Chemistry II	4

CHEM 3481	Majors Organic Chemistry I	4
CHEM 3491	Majors Organic Chemistry II	4
CHEM 3810	Biochemistry	4
CHEM 4810	General Biochemistry I	3
CHEM 4820	General Biochemistry II	3
COMM 2500	Introduction to Health Communication	3
HEHM 3100	Introduction to Health Humanities	3
HIST 4345	Gender, Science, and Medicine: 1600 to the Present	3
LATN 3000	Medical Terminology	3
MATH 1110	College Algebra	4
MATH 1120	College Trigonometry	3
MATH 1130	Precalculus Mathematics	4
MATH 1401	Calculus I	4
MATH 2411	Calculus II	4
MATH 2421	Calculus III	4
MATH 2830	Introductory Statistics	3
PBHL 1001	Race, Gender, Class, & Health	3
PBHL 2001	Introduction to Public Health	4
PBHL 3001	Introduction to Epidemiology	4
PBHL 3031	Health, Human Biology and Behavior	3
PHIL 3002	Ancient Greek Philosophy	3
PHIL 3022	Modern Philosophy	3
PHIL 4242	Bioethics	3
PSYC 1000	Introduction to Psychology I	3
PSYC 1005	Introduction to Psychology II	3
PSYC 2205	Lifespan Developmental Psychology for Health Majors	3
PSYC 2220	Biological Basis of Behavior	3
PSYC 3205	Human Development I: Child Psychology	3
PSYC 3215	Human Development II: Adolescence and Adulthood	3
PSYC 3262	Health Psychology	3
PSYC 3265	Drugs, Brain and Behavior	3
PSYC 3305	Abnormal Psychology	3
PSYC 3810	Neuropsychology	3
SOCY 1001	Understanding the Social World	3
SOCY 3440	Medical Sociology	3
SOCY 4110	Sociology of Health Care	3

To learn more about the Student Learning Outcomes for this program, please visit our website (<https://clas.ucdenver.edu/health-professions-programs/allied-health-sciences-certificate/>).