

HEALTH SCIENCE, BACHELOR OF SCIENCE

Requirements

Total Course Requirements for the Bachelor's Degree

See the "Requirements for the Bachelor's Degree (<https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/>)" in the University Catalog for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

Elective Requirements

Completion of elective courses (beyond the requirements listed below) to reach a total of a minimum of 120 units.

General Education Requirements (49 units)

See the "General Education (<https://catalog.csudh.edu/general-information/double-counting-general-education-courses/general-education/>)" requirements in the University Catalog or the Class Schedule for the most current information on General Education requirements and course offerings.

Graduation Writing Assessment Requirement

See the "Graduation Writing Assessment Requirement (<https://catalog.csudh.edu/general-information/graduate-writing-examination/>)" in the University Catalog.

Minor Requirements

Single field major, no minor required

Major Requirements, Community Health and Health Care Management Options (66 - 70 units)

The following courses, or their approved transfer equivalents, are required of all candidates for the degree focusing on the Community Health or Health Care Management option.

A major in Health Science in one of these two options consists of lower division required core courses, upper division required core courses and lower and upper division courses corresponding to the option. The core courses are common to both of the options. The lower and upper division option courses vary with option chosen.

Common Core Requirements

Code	Title	Hours
Lower Division Required Courses		
HEA 201	Healthcare Systems and Perspectives ¹	3
MAT 131	Elementary Statistics and Probability ¹	3-4
or MAT 132	Statistics and Probability with Support	
Upper Division Required Courses		
HEA 312	Intro To Public Health	3
HEA 313	Introduction to Biostatistics	3
HEA 315	Interpersonal Skills in Health Communication	3
HEA 466	Environmental Health Problems	3
HEA 467	Health Policy Issues and Analysis	3
HEA 468	Multicultural Health ²	3
HEA 471	Law, Ethics and Social Values in Healthcare	3
HEA 479	Research Methods in Health Sciences	3

HEA 490	Health Science Senior Seminar	1-3
HEA 496	Internship in Health Sciences ³	1-6
HEA 497	Internship Seminar ³	1
Total Hours		33-41

¹ Students are advised to take MAT 131 Elementary Statistics and Probability or MAT 132 Statistics and Probability with Support and HEA 201 Healthcare Systems and Perspectives to meet General Education requirements and the Health Science lower division requirement.

² Fulfills General Education Area D3: Integrative Studies in Social Science.

³ Must be taken concurrently.

In addition to the common core requirements, all health science majors must choose one of the following options:

Community Health Option (30-33 units)

Code	Title	Hours
Lower Division Required Courses		
BIO 102	General Biology ¹	3
Upper Division Required Courses		
HEA 314	Health Behavior	3
HEA 316	Introduction to Epidemiology	3
HEA 320	Contemporary Health and Disease	3
HEA 461	Community Health Needs Assessment and Program Planning	3
HEA 462	Methods in Community Health Education	3
HEA 463	Health Program Implementation and Evaluation	3
HEA 464	Health Educator as Community Resource and Advocate	3
Electives		
Select six to nine units from the following:		6-9
HEA 300	Health in Public Education	
HEA 319	Leadership in Healthcare	
HEA 465	Introduction to Global Health	
HEA 477	Long-Term Care Administration	
HEA 495	Spec Topics in Health Sciences	
Total Hours		30-33

¹ Students are advised to take BIO 102 General Biology to meet General Education requirement in Natural Science and the Health Science lower division requirement.

Health Care Management Option (30-33 units)

Code	Title	Hours
Lower Division Required Courses		
ACC 230	Financial Accounting	3
ECO 210	Economic Theory 1A Micro ¹	3
Upper Division Required Courses		
HEA 318	Health Services Management	3
HEA 319	Leadership in Healthcare	3
HEA 469	Management Sciences in Healthcare Organizations	3
HEA 472	Survey of Healthcare Finance	3

HEA 476	Managing Health Information Systems	3
HEA 477	Long-Term Care Administration	3
HEA 478	Strategic Management in Health Care	3
Electives		
Select three to six units from the following:		3-6
HEA 316	Introduction to Epidemiology	
HEA 320	Contemporary Health and Disease	
HEA 455	Applied Anatomy	
HEA 495	Spec Topics in Health Sciences	
Total Hours		30-33

¹ Meets General Education Requirement Area D1.

Major Requirements, Radiologic Technology Option (51 units)

The following courses, or their approved transfer equivalents, are required of all candidates for the degree focusing on Radiologic Technology Option.

A Major in Health Science consists of lower division required courses, upper division core courses and lower and upper division courses in one of the options listed below. The upper division core courses are common to all Health Science Majors for those options listed below. The lower division required courses and the lower and upper division option courses vary with the option chosen.

Common Core Requirements (24 units)

Code	Title	Hours
Lower Division Required Courses		
CSC 101	Intro.to Computer Education	3
HEA 201	Healthcare Systems and Perspectives	3
MAT 131	Elementary Statistics and Probability ¹	3
Upper Division Requirements		
HEA 479	Research Methods in Health Sciences	3
Select four courses from the following:		12
HEA 312	Intro To Public Health	
HEA 314	Health Behavior	
HEA 315	Interpersonal Skills in Health Communication	
HEA 318	Health Services Management	
CLS 308	Pathophys for Hlth Professions	
Total Hours		24

¹ Students are advised to take MAT 131 Elementary Statistics and Probability to meet both the General Education quantitative reasoning requirement and the Health Science lower division requirement.

Radiologic Technology Option (42 units)

Prerequisites or Equivalents

Code	Title	Hours
BIO 250	Elem Hum Anat & Physiol	3
BIO 251	Elem Hum Anatomy Phys Lab	1
ENG 110	Freshman Composition Accelerated	3
ENG 111	Freshman Composition II	3
PSY 101	General Education Psychology: Understanding Human Behavior	3

or SOC 101	The Individual In Society	
ANT 100	Introduction to Cultural Anthropology	3
PHY 100	Patterns In Nature	3-4
or PHY 120	Elements Of Physics I	
CHE 110	General Chemistry I	5
Total Hours		24-25

Required Courses

Code	Title	Hours
Lower Division Required Courses		
HEA 280	Orientation and Elementary Radiation Protection	1
HEA 281	Medical Terminology: Radiology	1
HEA 287	Clinical Practicum I	1
Upper Division Required Courses		
HEA 380	Darkroom Chemistry and Techniques	1
HEA 381	Patient Care Procedures Related to Radiology	2
HEA 382	Principles of Radiographic Exposure	3
HEA 383	Common Radiographic Procedures Using Contrast Media	2
HEA 384	Topgr Anatomy & Position I	3
HEA 385	Radiation Protection	3
HEA 387	Clinical Practicum II	3
HEA 388	Clinical Practicum III	3
HEA 480	Radiological Physics	2
HEA 481	Topographic Anatomy and Positioning II	3
HEA 482	Special Radiographic Procedures	2
HEA 483	Sub-Specialties in Radiology	2
HEA 485	Departmental Administrative and Office Procedures, Computer Literacy	1
HEA 487	Clinical Practicum IV	1
HEA 488	Clinical Practicum V	3
HEA 489	Clinical Practicum VI	3
HEA 499	Senior Project Radiology	1
Total Hours		41

Program Learning Outcomes

1. Demonstrate competency in the application of communication and information technologies to discipline specific issues.
2. Demonstrate proficiency in written and oral communication skills at a level commensurate with the standards of entry-level performance in the discipline.
3. Apply communication theories to developing and implementing change strategies for targeted groups and populations.
4. Apply theory to practice in research, planning, development, implementation, assessment, decision-making, and policy.
5. Develop critical thinking and analytic skills through the logical design and systematic application of quantitative and qualitative approaches to planning and problem-solving.
6. Demonstrate an understanding of professionalism and leadership qualities, through observation and self-reflection that are in keeping with acceptable moral, ethical, and legal principles.
7. Analyze and address health issues and policies based on an integrated interdisciplinary approach, including the natural, behavioral, social and health sciences, and the humanities.

8. Synthesize and apply knowledge from the natural, behavioral, social and health sciences, and humanities in addressing health issues from proactive and problem-solving perspectives.
9. Apply theory to practice as change agents for the advancement of health, well-being, and social justice among diverse individuals, groups, and populations locally and globally.
10. Demonstrate cultural competence in addressing health disparities among diverse populations in urban and rural settings locally and globally.

Community Health Option Roadmaps

4- Year Roadmap

Course	Title	Hours
First Year		
Fall		
HEA 201	Healthcare Systems and Perspectives (Satisfies GE Area E)	3
ENG 110 or ENG 112	Freshman Composition Accelerated (Satisfies GE Area A2) or Freshman Composition Supported	3
MAT 131 or MAT 132 or MAT 134	Elementary Statistics and Probability (Satisfies GE Area B4) or Statistics and Probability with Support or Statistics & Probability - Supported	3
GE Area C1 Arts Courses		3
Hours		12
Spring		
THE 120	Fundamentals of Speech (satisfies GE Area A1 Oral Communications)	3
GE Area A3 Logic/Critical Thinking		3
GE Area D1 Perspectives on Individuals, Groups, and Society		3
BIO 102	General Biology (satisfies GE Area B2)	3
Elective to meet 120 units		3
Hours		15
Second Year		
Fall		
GE Area B1 Physical Science		3
BIO 103	General Biology Laboratory (satisfies GE Area B3)	1
GE Area C2 Letters Course		3
GE Area D2 Global and Historical Perspectives		3
HIS 101	History Of United States	3
Elective to meet 120 units		3
Hours		16
Spring		
Additional Course in GE Area C1 or C2		3
POL 101	American Institutions	3
GE Area F Ethnic Studies		3
Elective to meet 120 units		3
Elective to meet 120 units		2
Hours		14
Third Year		
Fall		
HEA 316	Introduction to Epidemiology *	3
HEA 312	Intro To Public Health *	3
HEA 314	Health Behavior *	3
HEA 315	Interpersonal Skills in Health Communication (Can be taken in any semester)	3
HEA 468	Multicultural Health (satisfies GE Area D3)	3
Hours		15
Spring		
HEA 461	Community Health Needs Assessment and Program Planning *	3

HEA 313	Introduction to Biostatistics *	3
HEA 320	Contemporary Health and Disease (can be take in any semester)	3
HEA 462	Methods in Community Health Education	3
HEA 471	Law, Ethics and Social Values in Healthcare (Can be taken in any semester)	3
Hours		15
Fourth Year		
Fall		
HEA 463	Health Program Implementation and Evaluation *	3
HEA 479	Research Methods in Health Sciences *	3
HEA 466	Environmental Health Problems (Satisfies GE Area B5)	3
HEA 467	Health Policy Issues and Analysis (Can be taken in any semester)	3
HEA Elective (from list below; can be taken in any semester; courses are repeatable) ¹		3
ENG 350 or LBS 370 or WMS 490 or CHS 300 or IDS 490 or HIS 400 or BIO 490 or ENG 490	Advanced Composition (or other GVAR satisfying course) or Multicultural Studies or Senior Capstone or Critical Issues in Chicana/Chicano Studies or Interdisciplinary Studies Senior Seminar or Proseminar in History or Senior Project or Seminar in Literature	3
Hours		18
Spring		
HEA 490	Health Science Senior Seminar *	3
HEA 496	Internship in Health Sciences *	2
HEA 497	Internship Seminar *	1
HEA 464	Health Educator as Community Resource and Advocate	3
HEA Elective (from list below; can be taken in any semester; courses are repeatable) ¹		3
GE Area C3 Integrative Studies in the Humanities		3
Hours		15
Total Hours		120

¹ ¹ Electives: HEA 300, HEA 319, HEA 465, HEA 477, HEA 495 (repeatable)
* Classes with * must be taken within that semester

2-Year Roadmap (transfer students)

Course	Title	Hours
First Year		
Fall		
HEA 201	Healthcare Systems and Perspectives (satisfies GE Area E) *	3
HEA 316	Introduction to Epidemiology *	3
HEA 312	Intro To Public Health *	3
HEA 314	Health Behavior *	3
HEA 315	Interpersonal Skills in Health Communication (can be taken any semester)	3
Hours		15
Spring		
HEA 461	Community Health Needs Assessment and Program Planning *	3
HEA 313	Introduction to Biostatistics *	3
HEA 320	Contemporary Health and Disease (can be taken any semester)	3
HEA 462	Methods in Community Health Education	3
HEA 468	Multicultural Health (satisfies GE Area D3)	3
HEA 471	Law, Ethics and Social Values in Healthcare (can be taken in any semester)	3
Hours		18

Second Year		
Fall		
HEA 463	Health Program Implementation and Evaluation *	3
HEA 479	Research Methods in Health Sciences *	3
HEA 466	Environmental Health Problems (GE Area B5 Integrative Studies in Natural Sciences)	3
HEA 467	Health Policy Issues and Analysis (can be taken in any semester)	3
HEA Elective (from list below; can be taken in any semester; courses are repeatable) ¹		3
ENG 350	Advanced Composition (or other GVAR satisfying course)	3
or LBS 370	or Multicultural Studies	
or WMS 490	or Senior Capstone	
or CHS 300	or Critical Issues in Chicana/Chicano Studies	
or IDS 490	or Interdisciplinary Studies Senior Seminar	
or HIS 400	or Proseminar in History	
or BIO 490	or Senior Project	
or ENG 490	or Seminar in Literature	
Hours		18
Spring		
HEA 490	Health Science Senior Seminar *	3
HEA 496	Internship in Health Sciences *	2
HEA 497	Internship Seminar *	1
HEA 464	Health Educator as Community Resource and Advocate	3
HEA Elective (from list below; Can be taken in any semester; courses are repeatable) ¹		3
GE Area C3 Integrative Studies in the Humanities		3
Hours		15
Total Hours		66

¹ ¹ Electives: HEA 300, HEA 319, HEA 465, HEA 477, HEA 495 (repeatable)
 * Classes with * must be taken within that semester

Health Care Management Option Roadmaps

4- Year Roadmap

Course	Title	Hours
First Year		
Fall		
HEA 201	Healthcare Systems and Perspectives (Satisfies GE Area E)	3
ENG 110	Freshman Composition Accelerated (Satisfies GE Area A2)	3
MAT 131	Elementary Statistics and Probability (Satisfies GE Area B4)	3
or MAT 132	or Statistics and Probability with Support	
or MAT 134	or Statistics & Probability - Supported	
GE Area C1 Arts Courses		3
Hours		12
Spring		
THE 120	Fundamentals of Speech (satisfies GE Area A1 Oral Communications)	3
GE Area A3 Logic/Critical Thinking		3
ECO 210	Economic Theory 1A Micro (satisfies GE area D2)	3
GE Area B2 Life Science		3
Elective to meet 120 units		3
Hours		15
Second Year		
Fall		
GE Area B1 Physical Science		3
GE Area B3 Science Laboratory		1
GE Area C2 Letters Course		3

GE Area D2 Global and Historical Perspectives		3
HIS 101	History Of United States	3
Elective to meet 120 units		3
Hours		16
Spring		
Additional Course in GE Area C1 or C2		3
POL 101	American Institutions	3
GE Area F Ethnic Studies		3
ACC 230	Financial Accounting	3
Elective to meet 120 units		3
Hours		15
Third Year		
Fall		
HEA 318	Health Services Management *	3
HEA 312	Intro To Public Health (can be taken in any semester)	3
HEA 315	Interpersonal Skills in Health Communication (can be taken in any semester)	3
HEA 319	Leadership in Healthcare (can be taken in any semester)	3
HEA 468	Multicultural Health (satisfies GE Area D3)	3
Hours		15
Spring		
HEA 313	Introduction to Biostatistics *	3
HEA 472	Survey of Healthcare Finance *	3
HEA 467	Health Policy Issues and Analysis	3
HEA 471	Law, Ethics and Social Values in Healthcare (Can be taken in any semester)	3
GE Area C3 Integrative Studies in the Humanities		3
Elective to meet 120 units		2
Hours		17
Fourth Year		
Fall		
HEA 478	Strategic Management in Health Care *	3
HEA 479	Research Methods in Health Sciences *	3
HEA 469	Management Sciences in Healthcare Organizations *	3
HEA 466	Environmental Health Problems (satisfies GE Area B5)	3
HEA 477	Long-Term Care Administration (can be taken in any term)	3
ENG 350	Advanced Composition (or other GVAR satisfying course)	3
or LBS 370	or Multicultural Studies	
or WMS 490	or Senior Capstone	
or CHS 300	or Critical Issues in Chicana/Chicano Studies	
or IDS 490	or Interdisciplinary Studies Senior Seminar	
or HIS 400	or Proseminar in History	
or BIO 490	or Senior Project	
or ENG 490	or Seminar in Literature	
Hours		18
Spring		
HEA 490	Health Science Senior Seminar *	3
HEA 496	Internship in Health Sciences *	2
HEA 497	Internship Seminar *	1
HEA 476	Managing Health Information Systems (can be taken in any semester)	3
HEA Elective (from list below; can be taken in any semester; courses are repeatable) ¹		3
Hours		12
Total Hours		120

¹ ¹ Electives: HEA 316, HEA 465, HEA 495 (repeatable), HEA 320 (if BIO 102 completed)
 * Classes with * must be taken within that semester

2-Year Roadmap (transfer students)

Course	Title	Hours
First Year		
Fall		
HEA 201	Healthcare Systems and Perspectives (satisfies GE Area E) *	3
HEA 318	Health Services Management *	3
HEA 312	Intro To Public Health (can be taken in any semester)	3
HEA 315	Interpersonal Skills in Health Communication (can be taken any semester)	3
HEA 468	Multicultural Health (satisfies GE area D3)	3
Hours		15
Spring		
HEA 313	Introduction to Biostatistics *	3
HEA 472	Survey of Healthcare Finance *	3
HEA 319	Leadership in Healthcare	3
HEA 467	Health Policy Issues and Analysis	3
HEA 471	Law, Ethics and Social Values in Healthcare (can be taken in any semester)	3
GE Area C3 Integrative Studies in the Humanities		3
Hours		18
Second Year		
Fall		
HEA 478	Strategic Management in Health Care *	3
HEA 479	Research Methods in Health Sciences *	3
HEA 469	Management Sciences in Healthcare Organizations *	3
HEA 466	Environmental Health Problems (satisfies GE Area B5)	3
HEA 477	Long-Term Care Administration (can be taken in any semester)	3
ENG 350 or LBS 370 or WMS 490 or CHS 300 or IDS 490 or HIS 400 or BIO 490 or ENG 490	Advanced Composition (or other GVAR satisfying course) or Multicultural Studies or Senior Capstone or Critical Issues in Chicana/Chicano Studies or Interdisciplinary Studies Senior Seminar or Proseminar in History or Senior Project or Seminar in Literature	3
Hours		18
Spring		
HEA 490	Health Science Senior Seminar *	3
HEA 496	Internship in Health Sciences *	2
HEA 497	Internship Seminar *	1
HEA 476	Managing Health Information Systems (can be taken in any semester)	3
HEA Elective (from list below; Can be taken in any semester; courses are repeatable) ¹		3
Hours		12
Total Hours		63

¹ ¹ Electives: HEA 316, HEA 465, HEA 495 (repeatable), HEA 320 (if BIO 102 completed)

* Classes with * must be taken within that semester

Radiologic Technology Option 4- Year Roadmap

Course	Title	Hours
First Year		
Fall		
GE Area A2 Composition I		3
GE Area C or D		3
GE Area C or D		3

GE Area C or D		3
HEA 201	Healthcare Systems and Perspectives (satisfies GE Area E)	3
Hours		15

Spring		
GE Area A2 Composition II		3
GE Area B1 Physical Sciences OR B2 Life Sciences		3
MAT 131	Elementary Statistics and Probability (satisfies GE Area B4)	3
GE Area C or D		3
GE Area C or D		3
Hours		15

Second Year		
Fall		
GE Area A1 Oral Communication		3
GE Area B1 Physical Sciences OR B2 Life Sciences		3
GE Area B3 Science Laboratory		1
CSC 101	Intro.to Computer Education	3
HIS 101	History Of United States	3
Elective to meet 120 units		1
Hours		14

Spring		
GE Area A3 Logic/Critical Thinking		3
GE Area F Ethnic Studies		3
BIO 250	Elem Hum Anat & Physiol	3
BIO 251	Elem Hum Anatomy Phys Lab	1
POL 101	American Institutions	3
Hours		13

Third Year		
Fall		
HEA 280	Orientation and Elementary Radiation Protection	1
HEA 281	Medical Terminology: Radiology	1
GE Area C3 Integrative Studies in the Humanities		3
HEA 481	Topographic Anatomy and Positioning II	3
HEA 482	Special Radiographic Procedures	2
HEA 487	Clinical Practicum IV	1
HEA 488	Clinical Practicum V	3
HEA 499	Senior Project Radiology	1
Hours		15

Spring		
HEA 383	Common Radiographic Procedures Using Contrast Media	2
HEA 384	Topogr Anatomy & Position I	3
HEA 388	Clinical Practicum III	3
Major Elective		3
GE area B5 Natural Science or GE area D3 Social Science		3
ENG 350	Advanced Composition (GVAR satisfying course)	3
Hours		17

Fourth Year		
Fall		
HEA 385	Radiation Protection	3
GE area B5 Natural Science or GE area D3 Social Science		3
HEA 481	Topographic Anatomy and Positioning II	3
HEA 482	Special Radiographic Procedures	2
HEA 487	Clinical Practicum IV	1
HEA 488	Clinical Practicum V	3
HEA 499	Senior Project Radiology	1
Hours		16

Spring		
HEA 479	Research Methods in Health Sciences	3
HEA 480	Radiological Physics	2
HEA 483	Sub-Specialties in Radiology	2

HEA 485	Departmental Administrative and Office Procedures, Computer Literacy	1
HEA 489	Clinical Practicum VI	3
HEA 499	Senior Project Radiology	1
Major Elective		3
	Hours	15
	Total Hours	120

2-Year Roadmap (transfer students)

Course	Title	Hours
First Year		
Fall		
HEA 280	Orientation and Elementary Radiation Protection	1
HEA 281	Medical Terminology: Radiology	1
GE Area C3 Integrative Studies in the Humanities		3
HEA 287	Clinical Practicum I	1
HEA 380	Darkroom Chemistry and Techniques	1
HEA 381	Patient Care Procedures Related to Radiology	2
HEA 382	Principles of Radiographic Exposure	3
HEA 387	Clinical Practicum II	3
	Hours	15
Spring		
HEA 383	Common Radiographic Procedures Using Contrast Media	2
HEA 384	Topgr Anatomy & Position I	3
HEA 388	Clinical Practicum III	3
Major Elective		3
GE area B5 Natural Science or D3 Social Science		3
ENG 350	Advanced Composition (GWAR satisfying course)	3
	Hours	17
Second Year		
Fall		
HEA 385	Radiation Protection	3
GE area B5 Natural Science or D3 Social Science		3
HEA 481	Topographic Anatomy and Positioning II	3
HEA 482	Special Radiographic Procedures	2
HEA 487	Clinical Practicum IV	1
HEA 488	Clinical Practicum V	3
HEA 499	Senior Project Radiology	1
	Hours	16
Spring		
HEA 479	Research Methods in Health Sciences	3
HEA 480	Radiological Physics	2
HEA 483	Sub-Specialties in Radiology	2
HEA 485	Departmental Administrative and Office Procedures, Computer Literacy	1
HEA 489	Clinical Practicum VI	3
HEA 499	Senior Project Radiology	1
Major Elective		3
	Hours	15
	Total Hours	63