

WSU Five-Year Program Review  
Self-Study

Cover Page

Department/Program: Health Sciences

Semester Submitted: Fall 2015

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## **Brief Introductory Statement**

The Department of Health Sciences, within the Ezekiel R. Dumke College of Health Professions (DCHP) at Weber State University, takes pride in the way we prepare students for health professional programs both within and outside the DCHP.

We use clearly stated objectives with measurable benchmarks for each of our courses, and tie those objectives to our teaching and assessment.

For example, in our flagship HTHS 1110/1111 Integrated Human Anatomy & Physiology course, which covers two semesters, there are 586 learning objectives. Each Powerpoint slide set is shared between faculty, and each slide has an objective number in the lower right corner. Each exam question is tied to a single learning objective, so we can measure students' progress and classify more/less challenging objectives and refocus our teaching as needed.

For assessing student learning, we use weekly or biweekly low-stakes formative examinations in our classes to give students frequent benchmarks to measure themselves against. Each semester ends in a comprehensive (i.e., summative) final exam that is weighted the same as the low-stakes exams. In this way, students and faculty can track individual and group progress both within and between semesters. Each exam is 50 questions and the questions are taken from a large secured pool, with at least 3 questions in the pool for each one delivered. For example, there are over 4000 questions in the HTHS 1110/1111 pool which we have used, with slight modification, over the past 9 years.

Our primary mission is to support the health professions programs in the college. Most DCHP programs have admissions committees that use student grades in HTHS 1110/1111 as a significant factor in their admissions decisions. Over 1500 students per year enroll in HTHS 1110/1111. Therefore, it's important to the Health Sciences faculty to keep our teaching and examination materials consistent across sections within a semester and even year-to-year, facilitating the admissions committees' job of selecting the most-prepared students for their programs.

Along with these consistently high standards for course materials, we have similarly high standards for our teaching. In internal end-of-semester evaluations, all Health Science faculty are rated at over 4.0 on a 5 point Likert scale; most average close to 4.5. Even on *Rate My Professor*, an evaluation website used freely by students for students, where one of the three scales is for "easiness", faculty consistently score low on the easiness of material while still maintaining an average rating near 4.5. Our faculty engage in professional development activities and maintain sharpness in their teaching regardless of their rank or tenure status. Three of the five faculty in the department have been named DCHP Teacher of the Year.

## **Standard A - Mission Statement**

The mission of the Dumke College of Health Professions Health Sciences department is to provide the foundational course work needed for successful completion of Health Science Degrees and other Health Professions Degrees. The course work is provided in multiple formats with measurable student learning outcomes for all sectors of the population. The courses are designed to assist students in developing the learning and professional skills and values required for the health professions. The rigor of the courses also prepares students for majors throughout the university.

## Standard B - Curriculum

### Curriculum Map

The exact same Measurable Learning Outcomes are listed below and with Standard C, Student Learning Outcomes and Assessment.

Students who pass HTHS LS1110 receive 4 credit hours of General Education credit towards the Life Sciences Breadth Requirement. Students are required to take at least 9 hours of Sciences with at least 3 hours of Physical Sciences and at least 3 hours of Life Sciences. The Eight Life Science Learning Outcomes are common to all courses carrying the LS designation for General Education in the Colleges of Science, Health Professions, Social and Behavioral Sciences, and Education. Because of their importance in all life science courses, including ours, these are listed in order as Learning Outcome 1 (LO1) through Learning Outcome 8 (LO8), in the following list. Learning Outcomes 9 through 14 are tied to required courses for the Associate in Health Sciences degree.

### **The Eight Life Science Learning Outcomes**

After completing the life sciences general education requirements, students will demonstrate their understanding of general principles of science:

*Nature of science.* Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.

*Integration of science.* All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.

*Science and society.* The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth's environment.

*Problem solving and data analysis.* Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.

Students will demonstrate their understanding of the following characteristics of life:

*Levels of organization:* All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.

*Metabolism and homeostasis:* Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.

*Genetics and evolution:* Shared genetic processes and evolution by natural selection are universal features of all life.

*Ecological interactions:* All organisms, including humans, interact with their environment and other living organisms.

At the end of their study at WSU, students in this program will be able to:

L01. Evaluate scientific and non-scientific explanations for phenomena. [4]

L02. Give examples of the integration of different scientific disciplines. [2]

L03. Explain interactions between science and society. [3]

L04. Employ problem solving and data analysis tools. [3]

L05. Classify levels of organization in humans. [2]

L06. Diagram the ways in which human bodies obtain and use energy at the system, cellular, and molecular levels. [4]

L07. Give examples of ways in which genetic processes and evolution act on the human body. [2]

L08. Cite the ecological interactions between humans and their environment which affect human health. [2]

L09. Correlate anatomical structures with their physiological functions. [4]

L010. Explain how diseases disrupt anatomy and/or physiology. [4]

L011. Evaluate probable causes of disease, given a case study. [3]

L012. Recognize the meaning of medical words whether written or spoken. [1]

L013. Express medical words in both written and verbal forms. [2]

L014. Deconstruct the etymology of medical words. [3]

Numbers in brackets after each measurable learning objective indicate its Bloom level: 1. Remember; 2. Understand; 3. Apply; 4. Analyze; 5. Evaluate; 6. Create. As this is an Associate Degree program, Bloom's levels 2-4 are emphasized in our curriculum.

## Curriculum Map Department of Health Sciences

Core Courses in Department/Program (14 credit hours required)	Department/Program Learning Outcomes													
	L01	L02	L03	L04	L05	L06	L07	L08	L09	L010	L011	L012	L013	L014
HTHS 1101 Medical Terminology (2)									I	I		M	M	M
HTHS LS1110 / 1111 Integrated Human Anatomy & Physiology with Lab (8)	E	E	E	E	M	M	E	I	M	I				
HTHS 2230 Introductory Pathophysiology (3)	M			M		M	M	E	M	M	E			
HTHS 2231 Introductory Pathophysiology Lab (1)									M	M	M			

**Key to symbols used:**

I introduced  
E emphasized  
M mastered

L01. Evaluate scientific and non-scientific explanations for phenomena. [4]  
 L02. Give examples of the integration of different scientific disciplines. [2]  
 L03. Explain interactions between science and society. [3]  
 L04. Employ problem solving and data analysis tools. [3]  
 L05. Classify levels of organization in humans. [2]  
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 L07. Give examples of ways in which genetic processes and evolution act on the human body. [2]  
 L08. Cite the ecological interactions between humans and their environment which affect human health. [2]  
 L09. Correlate anatomical structures with their physiological functions. [4]  
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 L011. Evaluate probable causes of disease, given a case study. [3]  
 L012. Recognize the meaning of medical words whether written or spoken. [1]  
 L013. Express medical words in both written and verbal forms. [2]  
 L014. Deconstruct the etymology of medical words. [3]

## **Standard C - Student Learning Outcomes and Assessment**

### Measurable Learning Outcomes

At the end of their study at WSU, students in this program will be able to:

L01. Evaluate scientific and non-scientific explanations for phenomena. [4]

L02. Give examples of the integration of different scientific disciplines. [2]

L03. Explain interactions between science and society. [3]

L04. Employ problem solving and data analysis tools. [3]

L05. Classify levels of organization in humans. [2]

L06. Diagram the ways in which human bodies obtain and use energy at the system, cellular, and molecular levels. [4]

L07. Give examples of ways in which genetic processes and evolution act on the human body. [2]

L08. Cite the ecological interactions between humans and their environment which affect human health. [2]

L09. Correlate anatomical structures with their physiological functions. [4]

L010. Explain how diseases disrupt anatomy and/or physiology. [4]

L011. Evaluate probable causes of disease, given a case study. [3]

L012. Recognize the meaning of medical words whether written or spoken. [1]

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Numbers in brackets after each measurable learning objective indicate its Bloom level: 1. Remember; 2. Understand; 3. Apply; 4. Analyze; 5. Evaluate; 6. Create. As this is an Associate Degree program, Bloom's levels 2-4 are emphasized in our curriculum.

### Five-year Assessment Summary

As this is the first-ever five-year assessment of the Department of Health Sciences, we have no prior assessments to cite.

## **Standard D - Academic Advising**

### Advising Strategy and Process

Academic Advisement in the Dumke College of Health Professions is provided by the Office of Admissions Advisement. There are three full-time advisors and one support staff in the office. The advisors also teach the elective HTHS 1103, Introduction to Health Careers and Care in a Diverse Society, and so are always aware of course offerings in the Department of Health Sciences which are needed for admission to professional programs.

### Effectiveness of Advising

This seamless advising has worked quite well for the college. Our department offices are adjacent to theirs, so we often interact formally and informally. Mis-advisement is rare and in general, students are a good match to their chosen professional programs once they meet the admission requirements with the help of the Office of Admissions Advisement.

Additionally, the office provides a twice-yearly informational meeting, which typically draws 100 or more students. Representatives from all programs (including Health Sciences) are on hand to explain their role in training students for a role in a health professions career.

### Past Changes and Future Recommendations

Five years ago, the Office of Admissions Advisement reported to the Health Sciences Department Chair. Since then, the Director of the Office has reported to the Dean. This change was welcomed by all parties and has been successful.

There is no need for a recommendation as advising is working quite well. The only concern is for our increase in majors, which will have an unknown effect on the advising office.

## **Standard E - Faculty**

### Faculty Demographic Information

Of the five full-time faculty in the department, four are male and one is female. All are Caucasian. We plan to hire a new faculty member in Spring 2016.

### Programmatic/Departmental Teaching Standards

We have about 1500 students per year enrolled in HTHS 1101, in HTHS 1110, and in HTHS 1111. Several hundred students per year take HTHS 2230 and 2231. For that reason, the department expects that all faculty will use the same syllabus template (with slight modifications), the same calendar, and the same set of teaching materials to draw from.



All materials (study guides, exams, calendars) are developed by the department as a whole, and all policies are agreed to by the department as a whole.

That leaves a good deal of latitude for faculty to approach the material in their own individual way. Some faculty use a “sage on the stage” approach, while others prefer to be a “guide on the side”. Our experience is that with advising, students will self-select those sections that are the best fit to their personal learning style. We offer a variety of presentation styles to facilitate this process.

All faculty in the department score significantly higher than 4.0 on a 5-point Likert scale, both in internal student evaluations and in external evaluations (e.g. *Rate My Professor*). In order to receive tenure, faculty in the Dumke College of Health Professions must score either “good” or “excellent” on teaching as judged by a peer review committee, the college’s promotion and tenure committee, and the Dean. There is no path to tenure which will “heal” a “satisfactory” or “poor” rating on this dimension.

Faculty Qualifications

Four faculty have doctoral degrees (3 PhD, 1 PharmD), and one has a master’s degree.

It is an expectation when faculty are hired that they will have extensive experience in the health care environment. For example, Chugg, Newton and Price have worked in hospital labs; Orrock has worked as a pharmacist, both in the community and in overseas mission work; and Hutchins has held joint appointments in clinical departments (Neurology, Neurosurgery, Medicine), has chaired a major hospital’s Radiation Safety Committee and served on admissions and safety committees for medical school, dental school, and the hospital.

**Faculty & Staff (current academic year)**

	Tenure	Contract	Adjunct
<b>Number of faculty with Doctoral degrees</b>	4	0	5
<b>Number of faculty with Master’s degrees</b>	0	1	4
<b>Number of faculty with Bachelor’s degrees</b>	0	0	5
<b>Other Faculty</b>	0	0	0
<b>Total</b>	4	1	14

Evidence of Effective Instruction

- i. Regular Faculty

Students complete faculty evaluations for each class each semester, and these are forwarded to the department chair for review and appropriate action.

- ii. Adjunct Faculty  
The same process is followed as for Regular Faculty.

#### Mentoring Activities

There is no formal mentoring process; having a small suite of adjacent faculty offices and a nearby department office means that faculty interact informally on a frequent basis to swap best practices in their mutual courses.

#### Diversity of Faculty

With such a small department, it is difficult to draw conclusions from the demographic composition. Opportunities to increase the diversity of faculty are always welcomed when we interview for new positions. The department is committed to the diversity of both faculty and the student body, because a diverse community is a vibrant community.

#### Ongoing Review and Professional Development

Per the mandate of the college and university, all faculty are evaluated annually by the department chair. Both fill out a written form and supply Likert scores for each dimension of the review.

The Dumke College of Health Professions also has a post-tenure review policy in accordance with Weber State PPM 8-11.

Awards for professional development in the Dr. Ezekiel R. Dumke College of Health Professions are made possible through generous endowments from three sources: Marriott, D. Wade Mack and Dumke foundations.

Two committees have been formed to consider professional development proposals, one for faculty and one for staff. These committees are comprised of both faculty and staff from each department and a representative from the Dean's office.

Health Science faculty are frequent recipients of these awards.

## **Standard F – Program Support**

Support Staff, Administration, Facilities, Equipment, and Library

### Adequacy of Staff

The Health Sciences Department is supported by one administrative specialist (Elizabeth Crawford-Bizzell). She has one hourly-wage student to assist her with the administrative support duties.

- i. Ongoing Staff Development
  - a. Classified staff has the opportunity to develop administrative skills through a small Marriott Staff Development grant set aside by the College of Health Professions for special projects.
  - b. On-campus training includes “Training Tracker” through Banner-based scheduling on relevant campus topics.

### Adequacy of Administrative Support

Administrative staff is adequate for current needs. Annual evaluations of faculty indicate that there is effective clerical support for the program and adequate delivery of educational objectives by administrative staff. Continued growth may facilitate addition of an additional “work study” student.

### Adequacy of Facilities and Equipment

The program regularly surveys students and faculty concerning the adequacy of equipment and supplies that allow sufficient preparation for class and laboratory sessions. Budgetary funds through assessed course fees are in place to replace and maintain equipment on an ongoing basis. Perkins funding is also available to increase equipment availability for the program. Course evaluations reveal no comments pertaining to deficient lab equipment.

Laboratory sessions are held in a very small building space. The laboratory space allows up to 30 students to participate at any given time. For computer activities, this space is adequate, but for hands-on activities, the space is very cramped and difficult to use. This is the main limiting factor to the number of students that can enroll in any Health Sciences course that has a lab requirement. The Department would benefit greatly from increased laboratory space.

### Adequacy of Library Resources

The Stewart Library provides a broad range of information and resources in

support of the WSU Department of Health Science's mission and goals. Services are provided at the Stewart Library on-campus and at the WSU-Davis Library/Information commons. Additionally, internet searches can be performed by enrolled students for database searches and other library services in remote sites for off-campus students.

Collections include print, electronic, and audio-visual resources as well as access to an increasingly large number of research databases, full-text journals, and books. Day, evening and weekend hours are maintained to accommodate patron needs on site at both campus locations. The Stewart Library is open 105 hours per week; the WSU-Davis library is open 45 hours per week. Off-campus access to resources and services is available 24/7 through the library website: <http://www.library.weber.edu> .

## **Standard G - Relationships with External Communities**

### Description of Role in External Communities

The WSU Department of Health Sciences does not currently have a defined role in the external community. This is mainly due to the fact that the department does not have an external accrediting agency or specific professional society, national, state or local.

The faculty maintain contact with former graduates of the program informally. Numerous former students initiate contact with faculty when requesting updated letters of recommendation or permission to contact when changing jobs.

### Summary of External Advisory Committee Minutes

The WSU Department of Health Sciences does not currently have an established external advisory committee.

## **Standard H - Program Summary**

### Results of Previous Program Reviews

This is the first program review for the Department of Health Sciences. There are no previous reviews to discuss.

## Summary of Artifact Collection Procedure

Artifact	Learning Outcome Measured	When/How Collected?	Where Stored?
Multiple Choice examinations in ChiTester*	all	with each module exam: HTHS 1101: 3 per semester HTHS 1110/1111: 10 per semester HTHS 2230: 8 per semester HTHS 2231: 8 per semester	ChiTester archives
Pretest self-check questions in Canvas (homework)	L01, L04, L06-L011	HTHS 2230: 8 per semester	Canvas
Reading assignment with comprehension quiz in ChiTester (homework)	L01, L04, L06-L011	HTHS 2230: 6 per semester	ChiTester archives
Laboratory Quizzes (HTHS 1110/1111)	L01-L08	weekly, in lab	ChiTester archives
Laboratory Quizzes (HTHS 2231)	L09, L010, L011	weekly, in lab	ChiTester or Canvas

\* Multiple-choice questions are written to the open-source board exam format outlined in Case SM & Swanson DB. Constructing Written Test Questions For the Basic and Clinical Sciences, 3rd ed. (revised). National Board of Medical Examiners. <http://www.nbme.org/publications/item-writing-manual-download.html>

This ensures uniformity and reliability in the question pool; in return we maintain the security and integrity of the question pool scrupulously. This allows us to re-use questions, which in turn makes it possible to track year-to-year and section-to-section differences in student performance.

APPENDICES

**Appendix A  
Student and Faculty Statistical Summary**

Health Science	2010-11	2011-12	2012-13	2013-14	2014-15
<b>Student Credit Hours Total <sup>1</sup></b>	<b>20,006</b>	<b>20,455</b>	<b>20,131</b>	<b>18,608</b>	<b>18,710</b>
<b>Student FTE Total <sup>2</sup></b>	<b>666.87</b>	<b>681.83</b>	<b>671.03</b>	<b>620.27</b>	<b>623.67</b>
<b>Student Majors <sup>3</sup></b>	163	169	198	176	188
<b>Program Graduates <sup>4</sup></b>					
Associate Degree	20	43	52	46	63
Bachelor Degree	n/o	n/o	n/o	n/o	n/o
<b>Student Demographic Profile <sup>5</sup></b>					
Female	104	115	134	125	119
Male	63	56	68	53	70
<b>Faculty FTE Total <sup>6</sup></b>	<b>17.77</b>	<b>16.91</b>	<b>18.02</b>	<b>17.22</b>	n/a
Adjunct FTE	10.77	11.1	12.21	<b>11.66</b>	n/a
Contract FTE	7	5.81	5.81	5.56	n/a
<b>Student/Faculty Ratio <sup>7</sup></b>	<b>37.53</b>	<b>40.32</b>	<b>37.24</b>	<b>36.02</b>	n/a

	2010-11	2011-12	2012-13	2013-14	2014-15
Summer	2112	2035	2002	1812	2138
Fall	9747	10466	10910	9891	9759
Spring	8147	7954	7219	6905	6813
	20006	20455	20131	18608	18710
Facfte	7	5.81	5.81	5.56	
Instfte	0.33	0.62	0.25	0.33	
208fte	10.14	10.12	11.63	11.06	
dvs fte	0.3	0.36	0.33	0.27	
Adj	10.77	11.1	12.21	11.66	
Ttl	17.77	16.91	18.02	17.22	

n/o - not offered, n/a - not avail



The number of Health Sciences majors leapt from 188 in fall 2014 to 888 in fall 2015. This is primarily because of changes in Federal financial aid requirements which compel students to choose an actual major. (In the past, students could major as an “applicant”, for example, to the nursing program.)

It is unclear what effect this will have on the department, as this is a new phenomenon. Data for 2015-16 are obviously not available yet, but here are data for the 2014-15 academic year on student credit hours (SCHs), student full-time equivalents (FTE), faculty FTE, and student/faculty ratio for the department itself and for all academic departments within the university.

	<b>Dept of Health Sciences</b>	<b>University (Academic Depts)</b>	<b>%</b>
Students (SCH)	18,710	135,283	13.8%
Students (FTE)	624	9,158	6.8%
Faculty FTE	17.2	864	2.0%
Student/Faculty Ratio	36:1	20:1	

\*SCH = student credit hours; FTE = full-time equivalents

Health Sciences is currently the third-most-popular major at Weber State University; only General Studies (2041 majors) and Nursing (1245 majors) have more. Five full-time faculty and 12 adjuncts cover 1/7 of the SCHs for the entire university.

The above table, then, illustrates the challenge and the opportunity facing Health Sciences. We already have a student/faculty ratio that is almost twice as large as the University as a whole. This is reflected in large class sizes. The faculty must adjust their teaching style to meet this unusual demand: only 2% of the Weber State FTE faculty are teaching 6.8% of the students and 13.8% of the student credit hours.

## Appendix B Contract/Adjunct Faculty Profile

Name	Gender	Ethnicity	Rank	Tenure Status	Highest Degree	Years of Teaching	Areas of Expertise
Kraig Chugg	M	W	Assistant Professor	Non-Tenure	MS	22	Medical Laboratory Science
James B Hutchins	M	W	Professor	Tenured	PhD	35	Neuroscience
Kathy Newton	F	W	Associate Professor	Tenured	PhD	17	Health Behavior Change, Chronic Disease, Diabetes
Marv W Orrock	M	W	Assistant Professor	Tenure-Track	PharmD	15	Pharmacology
Travis Price	M	W	Associate Professor	Tenured	PhD	12	Medical Laboratory Sciences
Clayton Anderson	M	W	Adjunct Instructor	Adjunct	MS	3	Human Anatomy and Physiology
Carolee Calvin	F	W	Adjunct Instructor	Adjunct	BEd	7	Math and History Health Sciences Radiography
Randy Christensen	M	W	Adjunct Instructor	Adjunct	BS	40	Biology Anatomy & Physiology
Cathryn Clayton	F	W	Adjunct Instructor	Adjunct	DMA & MS	10	Health Science Respiratory Therapy

Lindsay Cole	F	W	Adjunct Instructor	Adjunct	PharmD	3	Pathophysiology Pharmacology
Jason Francis	M	W	Assistant Professor Health Science Librarian	Tenured	MS	5	Health Research Information Literacy
Frederick D. Henderson	M	W	Adjunct Instructor	Adjunct	MS	10	Health Science courses SI Instructor HAS Clinical Instruction Medical Terminology
Rosemary Hoffman	F	W	Adjunct Instructor	Adjunct	PhD	6	Biochemistry Anatomy and Physiology
Doug Kap	M	W	Adjunct Instructor	Adjunct	DC & BS	10	Instructor
Brittney Maynard	F	W	Adjunct Instructor	Adjunct	BS	0.5	Health Education
Carol Naylor	F	W	Adjunct Instructor	Adjunct	DMD	24	Dentistry Podiatry
Eric Neff	M	W	Director of Advising and Teaching	Adjunct	MA	3	Advising & Teaching
Shauna Pitt	F	W	Adjunct Instructor	Adjunct	BS	4	Advising
Michael Young	M	W	Adjunct Instructor	Adjunct	BS	3	Curriculum Design

## Appendix C Staff Profile

Name	Gender	Ethnicity	Job Title	Years Employed	Areas of Expertise
Crawford-Bizzell, Elizabeth	F	W	Administrative Specialist II	0.5	BA English: writing, communication, and organization
Clark, Abigail	F	W	Lab Instructor	4	Registered Nurse
Silberman, Pamela C.	F	W	Lab Instructor	3	BS Psychology: health sciences general education, practical nursing
Sponbeck, Josh	M	W	Office Aide Lab Instructor	0.5	BS Biology Teaching: instructional operations, data entry
Twede, Allison	F	W	Lab Instructor and Coordinator	2	Health Sciences Degree
Young, Michael	M	W	Lab Instructor	2	Biology Teaching

## Appendix D Financial Analysis Summary

<b>Health Sciences</b>					
Funding	10-11	11-12	12-13	13-14	14-15
Appropriated Fund	742,727	668,009	646,555	718,812	682,128
Other:					
Special Legislative Appropriation					
Grants or Contracts					
Special Fees/Differential Tuitio	46,356	66,550	72,136	47,946	66,337
<b>Total</b>	<b>789,083</b>	<b>734,559</b>	<b>718,691</b>	<b>766,758</b>	<b>748,465</b>

## Appendix E

### External Community Involvement Names and Organizations

Name	Organization
Kraig Chugg	American Society for Clinical Laboratory Science
Jim Hutchins	OUTReach Resource Centers
Kathy Newton	Society of Public Health Education American Alliance of Health Education Society of Behavioral Medicine American Society for Clinical Laboratory Science Resiliency Solutions Utah Cancer Specialty Center
Marvin W Orrock	Collegium Aesculapium Humanitarian Outreach LDS Church Health Committee CA Medical Education Committee UPhA Pharmacy Education Committee Member U of U PharmD admissions Committee Member U of U Advisory Committee
Travis Price	American Society for Clinical Laboratory Science American Society for Clinical Pathology, member and global outreach consultant

## **Appendix F Site Visit Team**

Name	Affiliation
Rodney Hansen, Chair	Dept of Health Promotion and Human Performance, Weber State University
Kathleen Cadman	School of Nursing, Weber State University
JoAnn Fenn	Dept of Pathology, Medical Laboratory Science Division, University of Utah School of Medicine
Roger Bounds	Chairman, Dept of Health Sciences, University of Northern Arizona

## Appendix G Evidence of Learning

L01. Evaluate scientific and non-scientific explanations for phenomena. [Analyze]

L02. Give examples of the integration of different scientific disciplines. [Understand]

L03. Explain interactions between science and society. [Apply]

L04. Employ problem solving and data analysis tools. [Apply]

L05. Classify levels of organization in humans. [Understand]

L06. Diagram the ways in which human bodies obtain and use energy at the system, cellular, and molecular levels. [Analyze]

L07. Give examples of ways in which genetic processes and evolution act on the human body. [Understand]

L08. Cite the ecological interactions between humans and their environment which affect human health. [Understand]

L09. Correlate anatomical structures with their physiological functions. [Analyze]

L010. Explain how diseases disrupt anatomy and/or physiology. [Analyze]

L011. Evaluate probable causes of disease, given a case study. [Apply]

L012. Recognize the meaning of medical words whether written or spoken. [Remember]

L013. Express medical words in both written and verbal forms. [Understand]

L014. Deconstruct the etymology of medical words. [Apply]

Action Words for Bloom's Taxonomy					
Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose
describe	interpret	illustrate	classify	evaluate	create
label	paraphrase	modify	contrast	order	plan
list	summarize	use	distinguish	appraise	combine
name	classify	calculate	infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	extend	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	identify	manipulate	survey	grade	produce
discover	indicate	paint	advertise	measure	rearrange
duplicate	infer	prepare	appraise	predict	rewrite
enumerate	relate	produce	break down	rank	role-play
listen	restate	report	calculate	score	adapt
observe	select	teach	conclude	select	anticipate
omit	translate	act	correlate	test	arrange
read	ask	administer	criticize	argue	assemble
recite	cite	articulate	deduce	conclude	choose
record	discover	chart	devise	consider	collaborate
repeat	generalize	collect	diagram	critique	collect
retell	give examples	compute	dissect	debate	devise
visualize	group	determine	estimate	distinguish	express
	illustrate	develop	evaluate	editorialize	facilitate
	judge	employ	experiment	justify	imagine
	observe	establish	focus	persuade	infer
	order	examine	illustrate	rate	intervene
	report	explain	organize	weigh	justify
	represent	interview	outline		make
	research	judge	plan		manage
	review	list	question		negotiate
	rewrite	operate	test		originate
	show	practice			propose
	trace	predict			reorganize
	transform	record			report
		schedule			revise
		simulate			schematize
		transfer			simulate
		write			solve
					speculate
					structure
					support
					test
					validate

http://www.teachthought.com/uncategorized/249-blooms-taxonomy-verbs-for-critical-thinking/

Bloom levels are indicated in brackets: 1. Remember; 2. Understand; 3. Apply; 4. Analyze; 5. Evaluate; 6. Create. As this is an Associate Degree program, Bloom's levels 2-4 are emphasized in our curriculum.



Evidence of Learning  
 HTHS 1101  
 Medical Terminology  
 2 credit hours  
 Required for the major

Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Students will... <b>Mastered</b> Learning Outcome 12. Recognize the meaning of medical words whether written or spoken. Learning Outcome 13. Express medical words in both written and verbal forms. Learning Outcome 14. Deconstruct the etymology of medical words. <b>Introduced</b> Learning Outcome 9. Correlate anatomical structures with their physiological functions. Learning Outcome 10. Explain how diseases disrupt anatomy and/or physiology.	Direct and Indirect Measures* Measure 1: LearnSmart (McGraw-Hill) learning software.  Measure 2: In-class quizzes in either Connect (McGraw-Hill) or Canvas.  Measure 3: Multiple choice questions in 3 ChiTester exams.	Measure 1: Students achieve 100% performance in about 20 minutes each week on the system  Measure 2: Students achieve at least 73% performance for a passing grade  Measure 3: Students achieve at least 73% performance for a passing grade	Measure 1: This is the first semester with new software and eBook. Students achieve 100% by reading the textbook and answering comprehension questions (about 20-30 min). 9/10 students complete this assignment.  Measure 2: Average score 9 for first 10 assignments.  Measure 3: For exam 1, approx 400 students, 2/3 passed. For exam 2, same number of students, 3/4 passed.	Measure 1: Students are using and achieving success on LO12, LO13, and LO14.  Measure 2: In-class quizzes have improved attendance relative to previous semesters.  Measure 3: HTHS 1101 is the first college class for many students. Like many other Weber State classes, about 1/6 students either quit work early in the semester (UW grade) or exhibit meager work (E grade).	Measure 1: Train faculty in the use of LearnSmart reports; use (e.g.) Most Missed Question lists to build learning activities in a flipped hybrid class  Measure 2: Track attendance before and after in-class quizzes; correlate quiz and examination performance to link formative and summative learning  Measure 3: The first three chapters are the hardest; students are learning a large number of terms. Change exam schedule to cover Chapters: 1-3, 4-8, 9-13. Discuss strategies for engaging students.

Evidence of Learning  
HTHS 1110  
Integrated Human Anatomy & Physiology 1  
4 credit hours, lab included  
Required for the major  
Life Science General Education credit

Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
<p>Students will...</p> <p>LO1. Evaluate scientific and non-scientific explanations for phenomena.</p> <p>LO2. Give examples of the integration of different scientific disciplines.</p> <p>LO3. Explain interactions between science and society.</p> <p>LO4. Employ problem solving and data analysis tools.</p> <p>LO5. Classify levels of organization in humans.</p> <p>LO6. Diagram the ways in which human bodies obtain and use energy at the system, cellular, and molecular levels.</p> <p>LO7. Give examples of ways in which genetic processes and evolution act on the human body.</p> <p>LO8. Cite the ecological interactions between humans and their environment which affect human health.</p> <p>LO9. Correlate anatomical structures with their physiological functions.</p> <p>LO10. Explain how diseases disrupt anatomy and/or physiology.</p>	<p>Measure 1: Multiple-choice questions in 10 ChiTester exams. Each question is tied to a specific learning objective. See example at end of this section.</p> <p>Measure 2: Lab attendance.</p> <p>Measure 3: Lab content quizzes. Multiple choice questions, one per week (14 total)</p>	<p>Measure 1: Passing grade is 73% correct.</p> <p>Measure 2: Passing grade is 73% attendance.</p> <p>Measure 3: Passing grade is 73% correct.</p>	<p>Measure 1: Student performance varies by section of the course from an average in the low 70s (Chemistry, Biochemistry, Cell Biology) to the high 80s (Tissues, Integument). Overall average has declined by about half a letter grade in the last five years.</p> <p>Measure 2: Lab attendance is generally better than 80% over the semester.</p> <p>Measure 3: Student performance is near 100%. Students are encouraged to take notes during labs, and this helps the students who attend to do well in the course.</p>	<p>Measure 1: Students struggle with the same material, but there seems to be a decline in the preparation of incoming students.</p> <p>Measure 2: Students attend lab, but would like a wider range of lab activities.</p> <p>Measure 3: Learning of difficult material is enhanced by the laboratory experience. Lab attendance and quiz scores correlate with exam scores (Measure 1).</p>	<p>Measure 1: Strongly encourage HTHS 1101 Medical Terminology before taking HTHS 1110. This will help students with needed study skills and introduce them to the material in a more structured environment.</p> <p>Measure 2: Data will be used to overhaul HTHS 1110 labs within the next few semesters, contingent on faculty participation.</p> <p>Measure 3: Continued refinement and revision of lab quiz pool as activities are updated and modified.</p>

Evidence of Learning  
HTHS 1111  
Integrated Human Anatomy & Physiology 2  
4 credit hours, lab included  
Required for the major

Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
<p>Students will...</p> <p>LO1. Evaluate scientific and non-scientific explanations for phenomena.</p> <p>LO2. Give examples of the integration of different scientific disciplines.</p> <p>LO3. Explain interactions between science and society.</p> <p>LO4. Employ problem solving and data analysis tools.</p> <p>LO5. Classify levels of organization in humans.</p> <p>LO6. Diagram the ways in which human bodies obtain and use energy at the system, cellular, and molecular levels.</p> <p>LO7. Give examples of ways in which genetic processes and evolution act on the human body.</p> <p>LO8. Cite the ecological interactions between humans and their environment which affect human health.</p> <p>LO9. Correlate anatomical structures with their physiological functions.</p> <p>LO10. Explain how diseases disrupt anatomy and/or physiology.</p>	<p>Measure 1: Multiple-choice questions in 10 ChiTester exams. Each question is tied to a specific learning objective. See example at end of this section.</p> <p>Measure 2: Lab attendance.</p> <p>Measure 3: Lab content quizzes. Multiple choice questions, one per week (14 total)</p>	<p>Measure 1: Passing grade is 73% correct.</p> <p>Measure 2: Passing grade is 73% attendance.</p> <p>Measure 3: Passing grade is 73% correct.</p>	<p>Measure 1: Most difficult organ systems: endocrinology, nervous system, cardiovascular. Students score highest on respiratory and digestive where the physiology is less complex.</p> <p>Measure 2: Lab attendance is generally better than 80% over the semester.</p> <p>Measure 3: Student performance is near 100%. Students are encouraged to take notes during labs, and this helps the students who attend to do well in the course.</p>	<p>Measure 1: Students generally perform at the same level as in HTHS 1110; there seems to be good correlation between student performance in the two courses.</p> <p>Measure 2: Students attend lab, but would like a wider range of lab activities.</p> <p>Measure 3: Learning of difficult material is enhanced by the laboratory experience. Lab attendance and quiz scores correlate with exam scores (Measure 1).</p>	<p>Measure 1: Continued monitoring and enforcement of the existing prerequisite to pass HTHS 1110 with a C or better. Continued emphasis on improvement of teaching methods and materials in endocrinology and other difficult systems to study.</p> <p>Measure 2: Data will be used to overhaul HTHS 1111 labs within the next few semesters, with increased use of the available Anatomage table and plastinated cadaver material.</p> <p>Measure 3: Continued refinement and revision of lab quiz pool as activities are updated and modified.</p>

Evidence of Learning  
HTHS 2230  
Introductory Pathophysiology  
3 credit hours  
Required for the major

Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
<p>Students will...</p> <p><b>Mastered</b></p> <p>L01. Evaluate scientific and non-scientific explanations for phenomena.</p> <p>L04. Employ problem solving and data analysis tools.</p> <p>L06. Diagram the ways in which human bodies obtain and use energy at the system, cellular, and molecular levels.</p> <p>L07. Give examples of ways in which genetic processes and evolution act on the human body.</p> <p>L09. Correlate anatomical structures with their physiological functions.</p> <p>L010. Explain how diseases disrupt anatomy and/or physiology.</p> <p><b>Emphasized</b></p> <p>L08. Cite the ecological interactions between humans and their environment which affect human health.</p> <p>L011. Evaluate probable causes of disease, given a case study.</p>	<p>Direct and Indirect Measures*</p> <p>Measure 1: Pretest quiz taken in Canvas (not secure)</p> <p>The pretest questions provided are usually retired exam questions.</p> <p>Measure 2: Reading assignment quizzes in ChiTester (not secure)</p> <p>Measure 3: Exam questions from large pool (8 exams per semester + comprehensive final using selected pool questions)</p>	<p>Measure 1: Students score 73% or better to demonstrate competence.</p> <p>Measure 2: Students score 73% or better to demonstrate competence.</p> <p>Measure 3: Students score 73% or better to demonstrate competence.</p>	<p>Measure 1: Many students skip the pretest, even though it is freely available; those students perform poorly on examinations as well.</p> <p>Measure 2: Again, course offerings through Canvas are frequently ignored by poor students.</p> <p>Measure 3: Students continue to struggle with the same topics as in HTHS 1111: endocrine and immune system exams carry the lowest average each semester.</p>	<p>Measure 1: Intro Pathophysiology is one of the most rigorous courses in the Weber State curriculum. Students must have excellent study skills and time management to succeed in this class.</p> <p>Measure 2: These readings are difficult for some students, especially those with reading comprehension difficulties. Students struggle with the high reading level of New Engl J Med review articles.</p> <p>Measure 3: Students struggle with keeping track of multiple cells interacting in multiple ways.</p>	<p>Measure 1: Increased enrollment by majors may require more sections taught by more qualified faculty. Students struggle with time management in online courses; we might attempt to remediate this problem.</p> <p>Measure 2: Explore methods of screening students for reading comprehension before they can take Intro Pathophysiology.</p> <p>Measure 3: Encourage higher-level thinking skills and examples of interacting systems. More closely integrate lecture (HTHS 2230) with lab (HTHS 2231).</p>

Evidence of Learning  
 HTHS 2231  
 Introductory Pathophysiology Laboratory  
 1 credit hour  
 Required for the major

Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Students will... LO9. Correlate anatomical structures with their physiological functions. LO10. Explain how diseases disrupt anatomy and/or physiology. LO11. Evaluate probable causes of disease, given a case study.	Measure 1: In-lab Canvas quizzes	Measure 1: Students score 73% or better to demonstrate competence.	Measure 1: Students struggle with the same material as in HTHS 2230.	Measure 1: Student feedback indicates they are not connecting laboratory material to lecture (2230) material.	Measure 1: Results will be used to further revise these laboratories. Experiment with innovative modalities combined with case studies, Anatomage demonstrations, and plastinated cadaver material. Explore ways to link the lecture (2230) and lab courses (2231) so they complement each other.
	Measure 2: Exams in ChiTester due the same day as HTHS 2230 exams (8 exams)	Measure 2: Students score 73% or better to demonstrate competence.	Measure 2: Students struggle with the same material as in HTHS 2230.	Measure 2: Laboratory could be used to help students master the pathophysiological basis for immune and endocrine diseases. Student learning would be cemented by careful dovetailing of the two courses.	Measure 2: Results will be used to further revise these laboratories.

Test Analysis for HTHS LS1110 Module 5 Exam Hutchins

Overview

This is a test analysis for the test named *HTHS LS1110 Module 5 Exam Hutchins*, owned by James Hutchins. There are 66 results for this test, with 66 complete results and 0 incomplete results. 65 identifiable students attempted this test, and 0 anonymous users attempted this test. This test is currently configured to deliver 50 out of 152 questions to each student.

Overall Test Statistics

**Scores**  
 Highest: **96.0** (96%)  
 Lowest: **24.0** (24%)  
 Average: **78.33** (78.33)

**Other**  
 Standard Deviation: **15.34**  
 Kuder-Richardson 20: **0.91**

**Duration**  
 Longest: **113** mins  
 Shortest: **10** mins  
 Average: **24.29** mins

Distributions  
 Scores



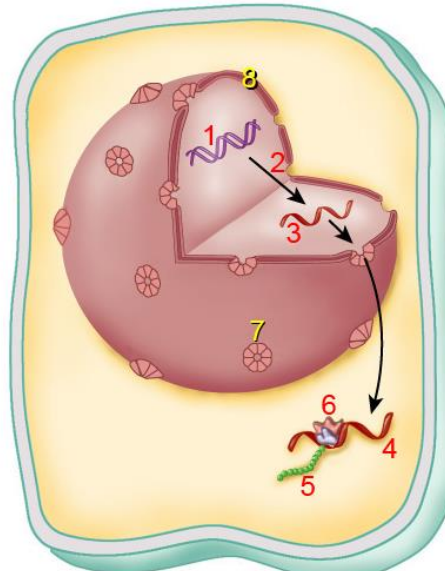
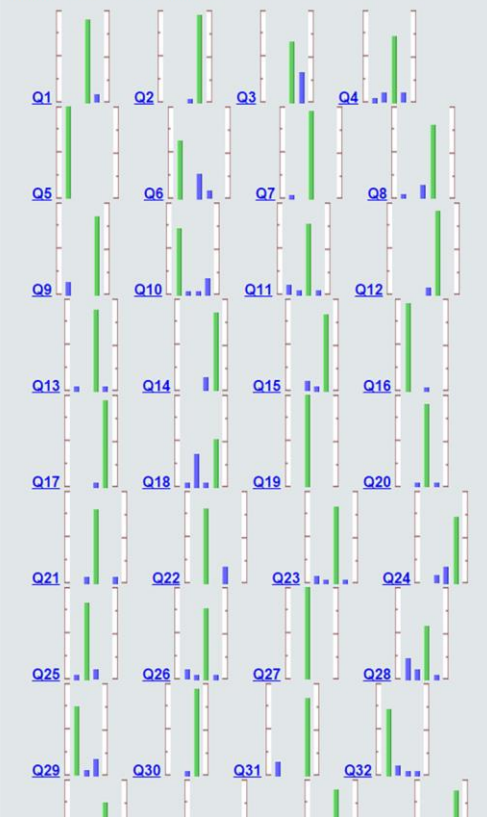
Roll over a bar for more information.

Durations



Roll over a bar for more information.

Multiple Choice Questions:

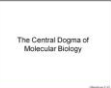


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18. The molecule labeled "4" is:

- DNA
- protein
- ribosome
- RNA

Objective 2. State the relationship between DNA, RNA and protein (the Central Dogma of Molecular Biology). Define: transcription, translation. Name the steps involved in the Central Dogma. Recognize exceptions to the Central Dogma.



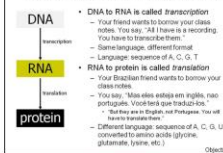
Assignment: Tortora, pp. 88-91 or Wiley Plus - 3.6 Protein Synthesis

Genetics: The Central Dogma



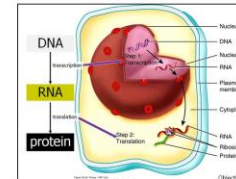
DNA makes RNA makes protein: this apparently simple statement contains a lot of information that we need to sort through. DNA can be used to make a copy of itself. This process is called replication and we will discuss it later, in Objective 16.

Genetics: The Central Dogma



The process by which DNA makes RNA is called transcription. The basic structure of DNA and RNA are the same, so it's transcription: copying from one form to another in the same language.

Compare this to the process of translation, the conversion of an RNA code to protein. While RNA is a single-stranded nucleic acid with the bases A, C, G and U carrying the genetic code, proteins have 20 amino acids and a primary, secondary, tertiary and quaternary structure that is completely different from the structure of RNA. It's appropriate that we call this translation, because we're converting information from one "language" to another.



The images on the preceding page show the type of data we typically collect for analysis. Results shown are for the exam covering Module 5 (of 10 modules in the semester), covering molecular biology of cells. The Module 5 Exam results for one fall 2015 section are shown in the top figure. At lower left is the question-by-question item analysis for the first 32 questions (out of 152) on the exam. The most-missed question in this group is #18. The question itself, as presented to the student (without the correct answer marked) is shown in the bottom middle panel.

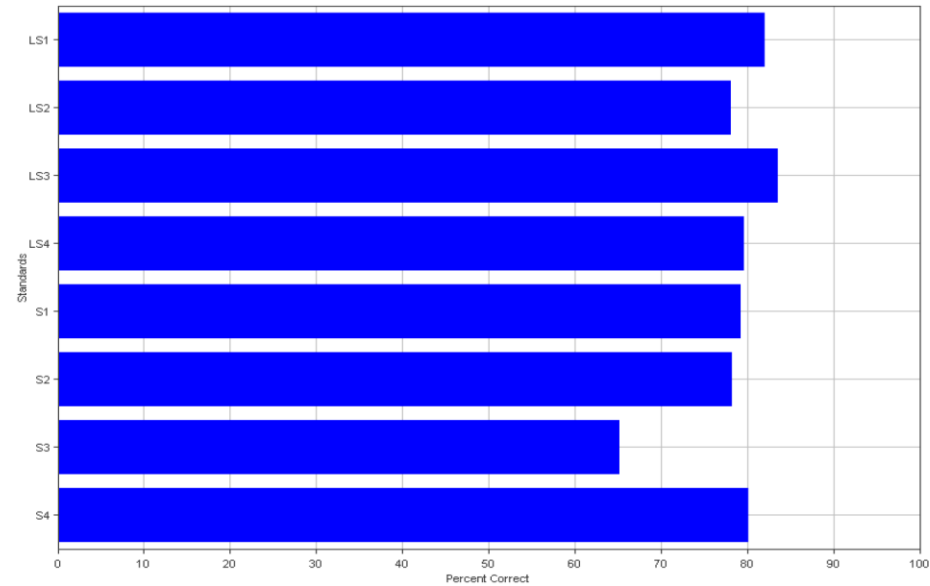
This particular question is categorized as covering L07 (see list above) and Objective 2. Returning to the Study Guide used in the course (p. 234), we see that Objective 2 is “State the relationship between DNA, RNA and protein (the Central Dogma of Molecular Biology). Define: transcription, translation. Name the steps involved in the Central Dogma. Recognize exceptions to the Central Dogma.” We can see that the departmental learning objective 7, “Give examples of ways in which genetic processes and evolution act on the human body,” is a good match to the specific learning objective on this page. There is an image on this page which is an exact match to the image in the examination, just with the labels removed and replaced with numbers. Students can recognize that exam question image object #3 (squiggly red line) is RNA (Question 17) but struggle with recognizing that object #4 (squiggly red line) in the image is RNA as well (Question 18).

These data allow us to form hypotheses about how to better teach the material, or hypothesize whether the test question is truly examining declarative memory for genetic processes or perhaps something else.

We can also share these data with other faculty who teach life science general education courses. An example of this is shown on the next page. Here, you can see that Learning Objective 7 has 183 questions devoted to it (as the pool to delivered questions ratio is about 3:1, that means students will see about 60 questions related to genetic processes).

## Integrated Human Anatomy and Physiology 1110

Summer 2015 Life Science Learning Outcome Results:  
Module Exams 1-10 and Comprehensive Final



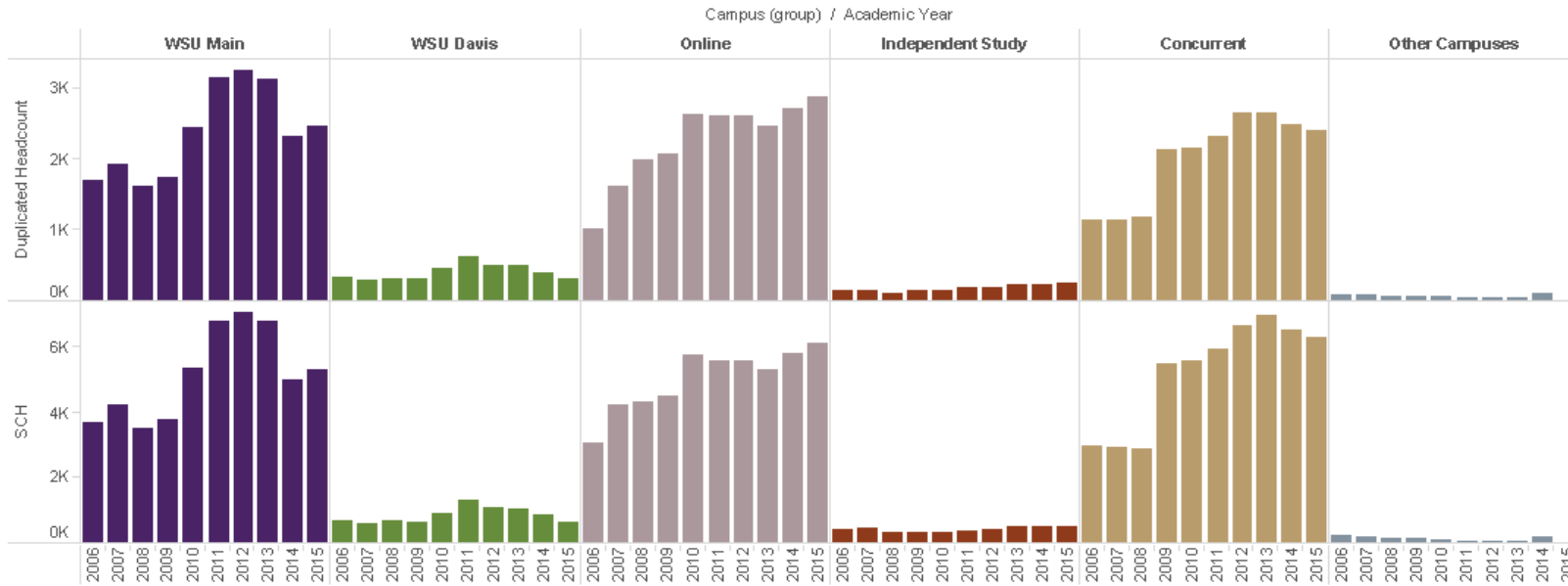
	Learning Outcome	Number of Correct Answers	Percent of Questions Answered Correctly	Number of Exam Questions Aligned to Learning Outcome
L05	Levels of Organization	11221	82.04%	316
L06	Metabolism and Homeostasis	7722	78.17%	262
L07	Genetics and Evolution	6199	83.60%	183
L08	Ecological interactions	4276	79.72%	129
L01	Nature of Science	723	79.28%	26
L02	Integration of Science	7081	78.28%	237
L03	Science and Society	583	65.21%	19
L04	Problem Solving and Data Analysis	1785	80.12%	73





## HTHS Duplicated Headcount & SCH by Campus

**"Other Campuses" Include:**  
 -Bridgerland ATC  
 -REST in SLC(Old ATT Bldg)  
 -Study Abroad  
 -Utah State University  
 -Utah Valley Medical Center  
 -West Center

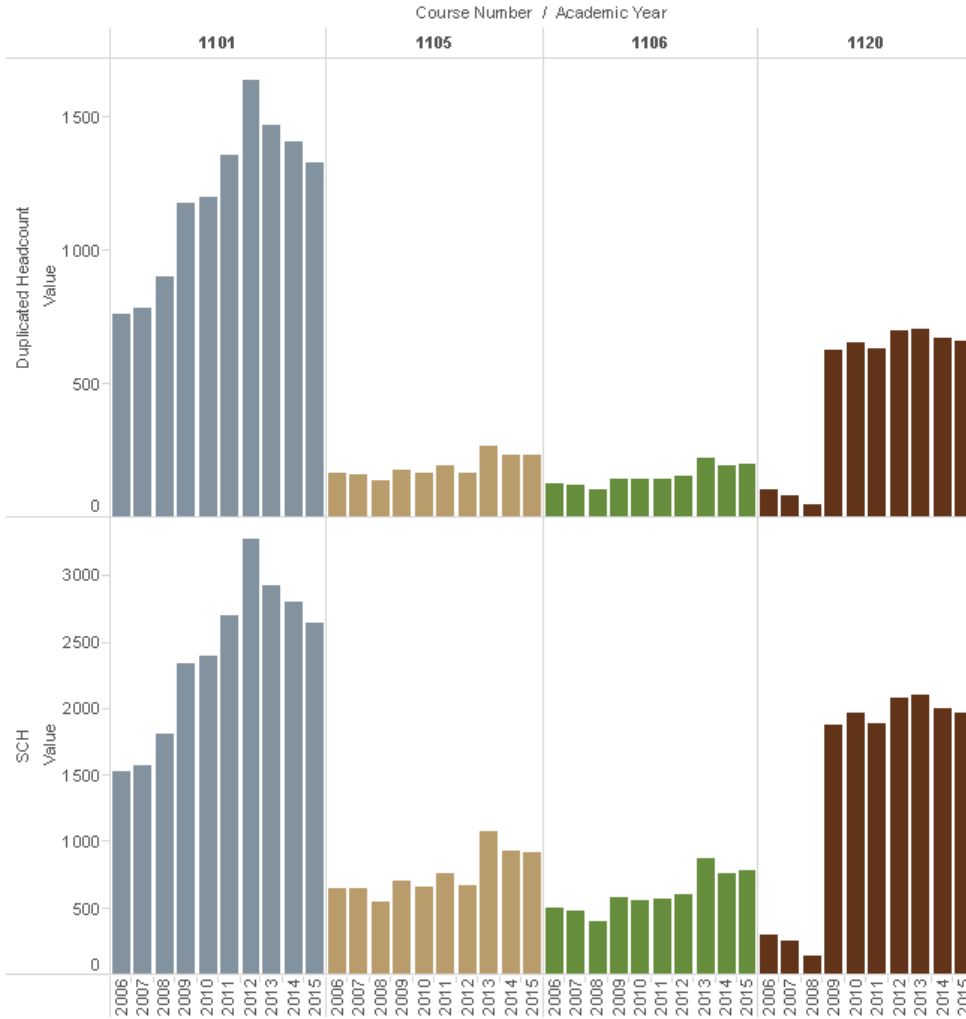


Academic Year	WSU Main		WSU Davis		Online		Independent Study		Concurrent		Other Campuses	
	Duplicated Headcount	SCH	Duplicated Headcount	SCH	Duplicated Headcount	SCH	Duplicated Headcount	SCH	Duplicated Headcount	SCH	Duplicated Headcount	SCH
2006	1,689	3,671	321	655	1,011	3,030	139	400	1,140	2,947	82	212
2007	1,920	4,202	290	590	1,603	4,211	148	435	1,140	2,917	82	181
2008	1,611	3,515	315	658	1,966	4,288	109	327	1,178	2,870	60	145
2009	1,738	3,770	307	628	2,056	4,493	136	305	2,110	5,477	52	126
2010	2,454	5,355	444	912	2,632	5,720	134	299	2,149	5,550	53	108
2011	3,153	6,766	613	1,311	2,623	5,572	175	358	2,308	5,903	32	60
2012	3,254	7,046	501	1,083	2,619	5,546	183	385	2,650	6,625	33	67
2013	3,136	6,784	484	1,018	2,470	5,303	229	486	2,648	6,961	33	66
2014	2,306	4,982	396	857	2,717	5,801	223	477	2,491	6,489	94	181
2015	2,472	5,270	313	643	2,888	6,115	237	500	2,399	6,298	4	8



## HTHS Concurrent Enrollment by Course

**Concurrent Graph**



**Concurrent Duplicated Headcount**

Academic Year	Course Number				Grand Total
	1101	1105	1106	1120	
2006	757	161	123	99	1,140
2007	781	159	119	81	1,140
2008	899	136	99	44	1,178
2009	1,171	175	143	621	2,110
2010	1,197	162	138	652	2,149
2011	1,351	188	142	627	2,308
2012	1,640	165	150	695	2,650
2013	1,465	266	216	701	2,648
2014	1,404	231	189	667	2,491
2015	1,322	229	194	654	2,399
<b>Grand Total</b>	<b>11,987</b>	<b>1,872</b>	<b>1,513</b>	<b>4,841</b>	<b>20,213</b>

**Concurrent SCH**

Academic Year	Course Number				Grand Total
	1101	1105	1106	1120	
2006	1,514	644	492	297	2,947
2007	1,562	636	476	243	2,917
2008	1,798	544	396	132	2,870
2009	2,342	700	572	1,863	5,477
2010	2,394	648	552	1,956	5,550
2011	2,702	752	568	1,881	5,903
2012	3,280	660	600	2,085	6,625
2013	2,930	1,064	864	2,103	6,961
2014	2,808	924	756	2,001	6,489
2015	2,644	916	776	1,962	6,298
<b>Grand Total</b>	<b>23,974</b>	<b>7,488</b>	<b>6,052</b>	<b>14,523</b>	<b>52,037</b>

## Associate of Science in Health Sciences (general track)



WEBER STATE  
UNIVERSITY

This is a **suggested** plan. Students are strongly encouraged to meet with a Health Professions academic advisor (801-626-6136 or visit <http://weber.edu/chpadvising>) as soon as possible to create a specific plan to best fit a student's academic needs. Remember, taking an average of 15 credit hours per semester facilitates timely graduation.

Catalog Year 2015-16

NAME: \_\_\_\_\_

<input checked="" type="checkbox"/>	Course	Credit Hour	Semester Offered	Milestones & Notes
<b>Freshman (Semester 1)</b>				
	ENGL 1010 – Introductory College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2100 may be substituted for HTHS LS1110.</li> <li>• Students may need to take developmental courses to take ENGL 1010 or MATH QL.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 1101 – Medical Terminology	2	Fall, Spring, Summer	
	HTHS LS1110 – Integrated Human Anatomy and Physiology I	4	Fall, Spring, Summer	
	HTHS 1103 – Intro. To Health Careers and Care...	3	Fall, Spring	
	Quantitative Literacy Requirement (QL) (credits range 3-5)	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Freshman (Semester 2)</b>				
	ENGL 2010 – Intermediate College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2200 may be substituted for HTHS 1111.</li> </ul>
	HTHS 1111 - Integrated Human Anatomy and Physiology II	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>14</b>		
<b>Freshman (Optional)</b>				
	<b>Total Semester Credits</b>			
<b>Sophomore (Semester 3)</b>				
	HTHS 1120 – Case Studies in Health Sciences	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• HTHS 2230 and 2231 should be taken concurrently.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 2230 – Introductory Pathophysiology	3	Fall, Spring, Summer	
	HTHS 2231 – Introductory Pathophysiology Lab	1	Fall, Spring, Summer	
	Computer Information Literacy (A-D)	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>14</b>		
<b>Sophomore (Semester 4)</b>				
	HTHS 2240 – Introduction to Pharmacology	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• If a student needs additional elective courses to fulfill the 60-credit AS degree requirement, a comprehensive list is available in the Associate of Science-Health Sciences section of the WSU Course Catalog.</li> </ul>
	American Institutions (AI)	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Sophomore (Optional)</b>				
	<b>Total Semester Credits</b>			
	<b>Total Credits</b>	<b>60</b>		

\* WSU Gen Ed Requirements (do not duplicate departments)

<input type="checkbox"/> HU (humanities)	<input type="checkbox"/> CA (creative arts)	<input type="checkbox"/> HU or CA
<input type="checkbox"/> SS (social science)	<input type="checkbox"/> SS (social science)	
<input type="checkbox"/> PS (physical science)	<input type="checkbox"/> LS (life science)	<input type="checkbox"/> PS or LS
<input type="checkbox"/> DV (Double-dip with a general education course)		
Suggested General Education Courses: MICR LS1113, NUTR LS1020, SOC SS/DV1010 or SS/DV1020, PSY SS1010, COMM HU1020 or HU2110, CHEM PS1050 or PS1110		

Notes:

A grade of C or better in all HTHS or Health Professions program application courses is required. Any passing grade is acceptable for courses that **only** meet general education requirements.

Students are encouraged to select general education classes that also meet Health Professions Program requirements (double-dip).

**Avoid Misadvisement!** Consult your academic advisor ([weber.edu/advisors](http://weber.edu/advisors)), the WSU Catalog ([weber.edu/catalog](http://weber.edu/catalog)), and your CatTracks degree evaluation (log into your eWeber Student Portal).

Revised 5/1/15

**Associate of Science in Health Sciences (dental hygiene track)**



**WEBER STATE UNIVERSITY**

This is a **suggested** plan. Students are strongly encouraged to meet with a Health Professions academic advisor (801-626-6136 or visit <http://weber.edu/chpadvising>) as soon as possible to create a specific plan to best fit a student's academic needs. Remember, taking an average of 15 credit hours per semester facilitates timely graduation.

Catalog Year 2015-16

NAME: \_\_\_\_\_

<input checked="" type="checkbox"/>	Course	Credit Hour	Semester Offered	Milestones & Notes
Freshman (Semester 1)				
	ENGL 1010 – Introductory College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2100 may be substituted for HTHS LS1110.</li> <li>• Students may need to take developmental courses to take ENGL 1010 or MATH QL.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 1101 – Medical Terminology	2	Fall, Spring, Summer	
	HTHS LS1110 – Integrated Human Anatomy and Physiology I	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	Quantitative Literacy Requirement (QL) (credits range 3-5)	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
Freshman (Semester 2)				
	ENGL 2010 – Intermediate College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2200 may be substituted for HTHS 1111.</li> </ul>
	HTHS 1111 - Integrated Human Anatomy and Physiology II	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>16</b>		
Freshman (Optional)				
	<b>Total Semester Credits</b>			
Sophomore (Semester 3)				
	HTHS 1120 – Case Studies in Health Sciences	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• HTHS 2230 and 2231 should be taken concurrently.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 2230 – Introductory Pathophysiology	3	Fall, Spring, Summer	
	HTHS 2231 – Introductory Pathophysiology Lab	1	Fall, Spring, Summer	
	Computer Information Literacy (A- D)	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>14</b>		
Sophomore (Semester 4)				
	HTHS 2240 – Introduction to Pharmacology	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• If a student needs additional elective courses to fulfill the 60-credit AS degree requirement, a comprehensive list is available in the Associate of Science-Health Sciences section of the WSU Course Catalog.</li> </ul>
	American Institutions (AI)	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
Sophomore (Optional)				
	<b>Total Semester Credits</b>			
	<b>Total Credits</b>	<b>60</b>		

## Associate of Science in Health Sciences (medical laboratory sciences track)



**WEBER STATE  
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This is a **suggested** plan. Students are strongly encouraged to meet with a Health Professions academic advisor (801-626-6136 or visit <http://weber.edu/chpadvising>) as soon as possible to create a specific plan to best fit a student's academic needs. Remember, taking an average of 15 credit hours per semester facilitates timely graduation.

NAME: \_\_\_\_\_ Catalog Year: \_\_\_\_\_ Revised: \_\_\_\_\_

<input checked="" type="checkbox"/>	Course	Credit Hour	Semester Offered	Milestones & Notes
<b>Freshman (Semester 1)</b>				
	ENGL 1010 – Introductory College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2100 may be substituted for HTHS LS1110.</li> <li>• CHEM 1210 may be substituted for CHEM PS1110</li> <li>• Meet with a Medical Laboratory Science advisor.</li> </ul>
	HTHS LS1110 – Integrated Human Anatomy and Physiology I	4	Fall, Spring, Summer	
	CHEM PS1110 – Elementary Chemistry	5	Fall, Spring, Summer	
	MLS 1113 – Introduction to Medical Laboratory Practices **	4	Fall, Spring	
	<b>Total Semester Credits</b>	<b>16</b>		
<b>Freshman (Semester 2)</b>				
	ENGL 2010 – Intermediate College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2200 may be substituted for HTHS 1111.</li> <li>• CHEM 1220 may be substituted for CHEM 1120</li> </ul>
	HTHS 1111 – Integrated Human Anatomy and Physiology II	4	Fall, Spring, Summer	
	MLS 1114 – Principles of Hematology and Hemostasis **	4	Fall, Spring	
	CHEM 1120 – Elementary Organic, Bio-Chemistry	5	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>16</b>		
<b>Freshman (Optional)</b>				
	<b>Total Semester Credits</b>			
<b>Sophomore (Semester 3)</b>				
	HTHS 1101 – Medical Terminology	2	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• Students may need to take developmental courses to take ENGL 1010 or Math OL.</li> <li>• MICR LS2054 may be substituted for MICR 1113</li> </ul>
	MICR LS1113 – Introductory Microbiology	3	Fall, Spring, Summer	
	HTHS 1120 – Case Studies in Health Sciences	3	Fall, Spring, Summer	
	Computer Information Literacy (A-D)	4	Fall, Spring, Summer	
	Quantitative Literacy Requirement (QL) (credits range 3-5)	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Sophomore (Semester 4)</b>				
	American Institutions (AI)	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• If a student needs additional elective courses to fulfill the 60-credit AS degree requirement, a comprehensive list is available in the Associate of Science-Health Sciences section of the WSU Course Catalog.</li> </ul>
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Sophomore (Optional)</b>				
	<b>Total Semester Credits</b>			
	<b>Total Credits</b>	<b>62</b>		

\* WSU Gen Ed Requirements (do not duplicate departments)

<input type="checkbox"/> HU (humanities)	<input type="checkbox"/> CA (creative arts)	<input type="checkbox"/> HU or CA
<input type="checkbox"/> SS (social science)	<input type="checkbox"/> SS (social science)	
<input type="checkbox"/> PS (physical science)	<input type="checkbox"/> LS (life science)	<input type="checkbox"/> PS or LS
<input type="checkbox"/> DV (Double-dip with a general education course)		
<b>Suggested General Education Courses:</b> SOC SS/DV1010 or SS/DV1020, PSY SS1010, COMM HU1020 or HU2110		
** Online MLS students completing MLS 1113 and 1114 must meet with a MLS advisor to meet affiliation agreement requirements		

### Notes:

A grade of C or better in all HTHS or Health Professions program application courses is required. Any passing grade is acceptable for courses that **only** meet general education requirements.

Students are encouraged to select general education classes that also meet Health Professions Program requirements (double-dip).

**Associate of Science in Health Sciences (nursing track)**



**WEBER STATE  
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This is a **suggested** plan. Students are strongly encouraged to meet with a Health Professions academic advisor (801-626-6136 or visit <http://weber.edu/chpadvising>) as soon as possible to create a specific plan to best fit a student's academic needs. Remember, taking an average of 15 credit hours per semester facilitates timely graduation.

Catalog Year 2015-16

NAME: \_\_\_\_\_

<input checked="" type="checkbox"/>	Course	Credit Hour	Semester Offered	Milestones & Notes
<b>Freshman (Semester 1)</b>				
	ENGL 1010 – Introductory College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOO 2100 may be substituted for HTHS LS1110.</li> <li>• Students may need to take developmental courses to take ENGL 1010 or MATH QL.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 1101 – Medical Terminology	2	Fall, Spring, Summer	
	HTHS LS1110 – Integrated Human Anatomy and Physiology I	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	Quantitative Literacy Requirement (QL) (credits range 3-5)	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Freshman (Semester 2)</b>				
	ENGL 2010 – Intermediate College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOO 2200 may be substituted for HTHS 1111.</li> <li>**HTHS 2830 - Students with a current Utah state CNA certificate may receive 3 credits toward their AS degree.</li> </ul>
	HTHS 1111- Integrated Human Anatomy and Physiology II	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	HTHS 2830 – Directed Readings **	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>16</b>		
<b>Freshman (Optional)</b>				
	<b>Total Semester Credits</b>			
<b>Sophomore (Semester 3)</b>				
	HTHS 1120 – Case Studies in Health Sciences	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• HTHS 2230 and 2231 should be taken concurrently.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 2230 – Introductory Pathophysiology	3	Fall, Spring, Summer	
	HTHS 2231 – Introductory Pathophysiology Lab	1	Fall, Spring, Summer	
	Computer Information Literacy (A-D)	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>14</b>		
<b>Sophomore (Semester 4)</b>				
	HTHS 2240 – Introduction to Pharmacology	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• If a student needs additional elective courses to fulfill the 60-credit AS degree requirement, a comprehensive list is available in the Associate of Science-Health Sciences section of the WSU Course Catalog.</li> </ul>
	American Institutions (AI)	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Sophomore (Optional)</b>				
	<b>Total Semester Credits</b>			
	<b>Total Associate Degree Credits</b>	<b>60</b>		

## Associate of Science in Health Sciences (radiologic sciences track)



**WEBER STATE  
UNIVERSITY**

This is a **suggested** plan. Students are strongly encouraged to meet with a Health Professions academic advisor (801-626-6136 or visit <http://weber.edu/chpadvising>) as soon as possible to create a specific plan to best fit a student's academic needs. Remember, taking an average of 15 credit hours per semester facilitates timely graduation.

NAME: \_\_\_\_\_ Catalog Year: \_\_\_\_\_ Revised: \_\_\_\_\_

<input checked="" type="checkbox"/>	Course	Credit Hour	Semester Offered	Milestones & Notes
<b>Freshman (Semester 1)</b>				
	ENGL 1010 – Introductory College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2100 may be substituted for HTHS LS1110.</li> <li>• Students may need to take developmental courses to take ENGL 1010 or MATH QL.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 1101 – Medical Terminology	2	Fall, Spring, Summer	
	HTHS LS1110 – Integrated Human Anatomy and Physiology I	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	Quantitative Literacy Requirement (QL) (credits range 3-5)	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
<b>Freshman (Semester 2)</b>				
	ENGL 2010 – Intermediate College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2200 may be substituted for HTHS 1111.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 1111- Integrated Human Anatomy and Physiology II	4	Fall, Spring, Summer	
	Computer Information Literacy (A-D)	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>17</b>		
<b>Freshman (Optional)</b>				
	<b>Total Semester Credits</b>			
<b>Sophomore (Semester 3)</b>				
	RADT 1022 – Introduction to Radiologic Technology **	2	Fall, Spring	<ul style="list-style-type: none"> <li>• <b>** RADT courses (5) must be completed as a block. Students may register for this block of classes during semester 3 or semester 4. The RADT courses are not available online.</b></li> </ul>
	RADT 1542 – Radiographic Anatomy and Positioning V **	2	Fall, Spring	
	RADT 2865 – Clinical Education **	2	Fall, Spring	
	RADT 2921 – Workshop, Conferences, and Telecourses **	3	Fall, Spring	
	RADT 1681 – Lab Experiences **	1	Fall, Spring	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>13</b>		
<b>Sophomore (Semester 4)</b>				
	American Institutions (AI)	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• *** If a student needs additional elective courses to fulfill the 60-credit AS degree requirement, a comprehensive list is available in the Associate of Science-Health Sciences section of the WSU Course Catalog.</li> </ul>
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	Elective Course ***	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>16</b>		
<b>Sophomore (Optional)</b>				
	<b>Total Semester Credits</b>			
	<b>Total Credits</b>	<b>61</b>		

\* WSU Gen Ed Requirements (do not duplicate departments)

<input type="checkbox"/> HU (humanities)	<input type="checkbox"/> CA (creative arts)	<input type="checkbox"/> HU or CA
<input type="checkbox"/> SS (social science)	<input type="checkbox"/> SS (social science)	
<input type="checkbox"/> PS (physical science)	<input type="checkbox"/> LS (life science)	<input type="checkbox"/> PS or LS
<input type="checkbox"/> DV (Double-dip with a breadth course)		
<b>Suggested General Education Courses:</b> MICR LS1113, NUTR LS1020, SOC SS/DV1010 or SS/DV1020, PSY SS1010, COMM HU1020 or HU2110, CHEM PS1010, PHYS PS1010		

### Notes:

A grade of C or better in all HTHS or Health Professions program application courses is required. Any passing grade is acceptable for courses that **only** meet general education requirements.

Students are encouraged to select general education classes that also meet Health Professions Program requirements (double-dip).

**Associate of Science in Health Sciences (respiratory therapy track)**



**WEBER STATE UNIVERSITY**

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Catalog Year 2015-16

NAME: \_\_\_\_\_

<input checked="" type="checkbox"/>	Course	Credit Hour	Semester Offered	Milestones & Notes
Freshman (Semester 1)				
	ENGL 1010 – Introductory College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2100 may be substituted for HTHS LS1110.</li> <li>• Students may need to take developmental courses to take ENGL 1010 or MATH QL.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 1101 – Medical Terminology	2	Fall, Spring, Summer	
	HTHS LS1110 – Integrated Human Anatomy and Physiology I	4	Fall, Spring, Summer	
	REST 1540 - Survey of Respiratory Therapy	1	Fall, Spring	
	Quantitative Literacy Requirement (QL) (credits range 3-5)	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>16</b>		
Freshman (Semester 2)				
	ENGL 2010 – Intermediate College Writing	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• ZOOL 2200 may be substituted for HTHS 1111.</li> </ul>
	HTHS 1111 - Integrated Human Anatomy and Physiology II	4	Fall, Spring, Summer	
	REST 1560 – Multi-skilled Health Care Worker	1	Fall, Spring	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>14</b>		
Freshman (Optional)				
	<b>Total Semester Credits</b>			
Sophomore (Semester 3)				
	HTHS 1120 – Case Studies in Health Sciences	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• HTHS 2230 and 2231 should be taken concurrently.</li> <li>• Meet with a College of Health Professions academic advisor.</li> </ul>
	HTHS 2230 – Introductory Pathophysiology	3	Fall, Spring, Summer	
	HTHS 2231 – Introductory Pathophysiology Lab	1	Fall, Spring, Summer	
	Computer Information Literacy (A-D)	4	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>14</b>		
Sophomore (Semester 4)				
	HTHS 2240 – Introduction to Pharmacology	3	Fall, Spring, Summer	<ul style="list-style-type: none"> <li>• If a student needs additional elective courses to fulfill the 60-credit AS degree requirement, a comprehensive list is available in the Associate of Science-Health Sciences section of the WSU Course Catalog.</li> </ul>
	American Institutions (AI)	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	General Education Requirement *	3	Fall, Spring, Summer	
	Elective Course	3	Fall, Spring, Summer	
	<b>Total Semester Credits</b>	<b>15</b>		
Sophomore (Optional)				
	<b>Total Semester Credits</b>			
	<b>Total Credits</b>	<b>59</b>		