FAIRMONT STATE UNIVERSITY™

Office of the Provost
1201 Locust Avenue • Fairmont, West Virginia 26554
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www.fairmontstate.edu

MEMORANDUM

TO: Faculty Senate

FROM: Dr. Susan Ross

DATE: February 4, 2019

SUBJECT: Curriculum Proposal #18-19-05 REV #1
Science and Technology/BCG/Biology

I recommend approval of the attached Curriculum Proposal #18-19-05 REV #1. This proposal adds two new electives, BIOL3301 and BIOL3302, to the biology degree (B.S.). The Biology program lacks the ability to offer 2-semester human anatomy and physiology courses which are prerequisites for students interested in professional schools for Physical Therapy, Occupational Therapy, Physician's Assistant, and strongly recommended for students pursuing medical school. The addition of these courses will improve the ability of students to meet requirements for professional schools without forcing students to attend alternate institutions.

cc: Richard Harvey
Steve Roof
Stephen Rice
Kristy Henson
Laura Ransom
Cheri Gonzalez
Lori Schoonmaker

CURRICULUM PROPOSAL (Submit one hard copy and an electronic copy to the Associate Provost by the second Tuesday of the month.)

Proposal Number:	#18-19-05
School/Department/Program:	Science and Technology/BCG/Biology
Preparer/Contact Person:	Stephen Rice & Kristy Henson
Telephone Extension:	x4946 / x4877
Date Originally Submitted:	10-22-2018
Revision (Indicate date and label it Revision #1, #2, etc.):	Rev #1:
Implementation Date Requested:	Fall 2019

I. **PROPOSAL**. Write a brief abstract, not exceeding 100 words, which describes the overall content of the proposal.

This proposal adds two new electives, BIOL3301 and BIOL3302, to the biology degree (B.S.). The Biology program lacks the ability to offer 2-semester human anatomy and physiology courses which are prerequisites for students interested in professional schools for Physical Therapy, Occupational Therapy, Physician's Assistant, and strongly recommended for students pursuing medical school. The absence of these courses from Fairmont State's curriculum forces students to take courses elsewhere and may negatively impact retention and enrollment. The addition of these courses will improve the ability of students to meet requirements for professional schools without forcing students to attend alternate institutions.

The overall effect of these changes is:

II. **DESCRIPTION OF THE PROPOSAL**. Provide a response for each letter, A-H, and for each Roman Numeral II–V. If any section does not apply to your proposal, reply N/A.

A. Deletion of course(s) or credit(s) from program(s)

a. B.S. Biology deletions from requirements: None

Total hours deleted 0

B. Addition of course(s) or credit(s) from program(s)

a. Electives that will not affect the Biology B.S. requirements:

BIOL 3301 Advanced Human Anatomy and Physiology I (4 hours)
BIOL 3302 Advanced Human Anatomy and Physiology II (4 hours)

Total hours added 0

C. Provision for interchangeable use of course(s) with program(s):
    a. Not Applicable

D. Revision of course content. Include, as an appendix, a revised course description, written in complete sentences, suitable for use in the university catalog:
    a. Not Applicable

E. Other changes to existing courses such as changes to title, course number, and elective or required status.
    a. Not Applicable

F. Creation of new course(s). For each new course
    1. Designate the course number, title, units of credit, prerequisites (if any), ownership (FSU, PC&TC, or shared) and specify its status as an elective or required course. If you are creating a shared course, attach a memo from the Deans of the affected Schools explaining the rationale for the course being shared.

Number	Course Title	Credits	Prerequisites	Ownership	Status
BIOL 3301	Advanced Human Anatomy and Physiology I	4	BIOL1106 and either BIOL2203, FORS3200, or permission of instructor	FSU	Elective
BIOL 3302	Advanced Human Anatomy and Physiology II	4	BIOL 3301 with a C or better or permission of instructor	FSU	Elective

See Registrar's approval email in Appendix E

    2. Include, as an appendix, a course description, written in complete sentences, suitable for use in the college catalog.
        a. Appendix B contains the new course descriptions

    3. Include, as an appendix, a detailed course outline consisting of at least two levels.
        a. Appendix C contains the two-level course outlines

    4. In order to meet the requirements as outlined in Goal One of the Strategic Plan, please include Outcome Competencies and Methods of Assessment as an appendix. Examples are available upon request from the Chair of the Curriculum Committee.
        a. Appendix C contains the Outcome Competencies and Methods of Assessment

G. Attach an itemized summary of the present program(s) affected, if any, and of the proposed change(s).

    1. Describe how this proposal affects the hours needed to complete this program. Specifically, what is the net gain or loss in hours? Use the format for Current and Proposed Programs in Appendix A. Biology program (major and minor) will have two additional electives which will not impact the hours needed to complete the program.

    2. Include proof that this proposal meets the degree definition policy (Board of Governor's Policy #52) as part of the Proposed Program in Appendix A.

    3. Exceptions to the degree definition policy: As per policy #52, programs seeking exceptions to any of the maximum credit hour limits must submit formal requests to the Board of Governors for approval. Explain the rationale for the exception by documenting the existence of one or more of the criteria in paragraph 4.2.

RATIONALE FOR THE PROPOSAL.

A. **Quantitative Assessment**: Indicate the types of assessment data, i.e., surveys, interviews, capstone courses, projects, licensure exams, nationally-normed tests, locally developed measurements, accreditation reports, etc., that were collected and analyzed to determine that curricular changes were warranted. Quantitative data is preferred.

Under the current curriculum, students are forced to take 2-semester human anatomy and physiology courses at a different institution to meet the requirements of pre-professional programs. Exercise Science sends 6-8 students per year off campus (Paul Reneau, memo attached) and the biology program reports that approximately 5 students per year leave campus to meet these requirements as well.

B. **Qualitative Assessment**: Based upon the assessment data above, indicate why a curricular change is justified. Indicate the expected results of the change. Be sure to include an estimate of the increased cost, or reduction in cost of implementation. FOR EXAMPLE: Will new faculty, facilities, equipment, or library materials be required?

The current curriculum forces students away from Fairmont State to meet program requirements and may negatively impact student recruitment and retention for those in pre-professional career paths. A curricular change is justified to meet the needs of current students and may improve student recruitment and retention for pre-professional careers while additionally offering value to students in Exercise Science. West Virginia University's Physical Therapy program has acknowledged that these courses will be accepted to satisfy the admission pre-requisites for human anatomy and physiology (Brenda Wolfe, memo attached).

Ultimately, students will be best served through the acquisition of additional instructional resources (e.g. histology slides, anatomical charts & models). These additional resources may be used to supplement instruction in additional human biology-focused laboratory courses. These resources are not required to offer the initial curriculum but will greatly improve student retention and engagement. Initial curriculum and activities will use available resources and digital materials.

III. Should this proposal affect any course or program in another school, a memo must be sent to the Dean of each school impacted and a copy of the memo(s) must be included with this proposal. In addition, the Deans of the affected schools must sign below to indicate their notification of this proposal.

By signing here, you are indicating your college's/school's notification of this proposal.

College/School	Dean	Signature
Education, Health and Human Performance	Dr. Amanda Metcalf	
Science and Technology	Dr. Steven Roof	

IV. Should this proposal affect any course to be added or deleted from the general studies requirements, a memo from the chair of the General Studies Committee indicating approval of the change must be included with this proposal.

a. Not Applicable

V. ADDITIONAL COMMENTS.

Please see the final page of this revised proposal submission for the original page 4 which contains the signatures of both Deans.

APPENDIX A
B.S. Degree in Biology

BIOL 1105	BIOLOGICAL PRINCIPLES I	4
BIOL 1106	BIOLOGICAL PRINCIPLES II	4
BIOL 2202	GENERAL BOTANY	4
BIOL 2203	GENERAL ZOOLOGY	4
BIOL 3306	FUNDAMENTALS OF ECOLOGY.	4
BIOL 3368	ANIMAL PHYSIOLOGY	4
or BIOL 3370	PLANT PHYSIOLOGY	4
BIOL 3380	GENETICS	4
BIOL 3390	MOLECULAR BIOTECHNOLOGY	4
BIOL 4485	SENIOR SEMINAR	2
CHEM 1105	CHEMICAL PRINCIPLES	5
CHEM 2200	FOUNDATIONAL BIOCHEMISTRY	4
CHEM 2201	ORGANIC CHEMISTRY I	4
CHEM 2202	ORGANIC CHEMISTRY II	4

TOTAL Required Major Courses			51 hours
Major Electives			12 hours
BIOL 2224	MICROBIOLOGY	4	
BIOL 3312	ADVANCED BOTANY	4	
BIOL 3315	INVERTEBRATE ZOOLOGY	4	
BIOL 3316	VERTEBRATE ZOOLOGY	4	
BIOL 3330	AQUATIC ECOLOGY	4	
BIOL 3331	TERRESTRIAL ECOLOGY	4	
BIOL 3360	BIOCHEMISTRY	4	
BIOL 4420	DEVELOPMENTAL BIOLOGY	4	
TOTAL HOURS FOR MAJOR			63 hours

Required and Recommended General Studies Courses		
Attribute IA – Critical Analysis		3
	ENGL 2220	
Attribute IB – Quantitative Literacy		4
	MATH 1585 or 2501 (PR for BIOL 3390)	
Attribute IC – Written Communication		3
	ENGL 1101	
Attribute ID - Teamwork		3
	COMM 2200	
Attribute IE – Information Literacy		3
	ENGL1102	
Attribute IF – Technology Literacy		3
	TECH 1100	
Attribute IG – Oral Communication		3
	COMM 2200	
Attribute III - Citizenship		3
	POLI 1100	

Attribute IV – Ethics		3
	ENGL 2220	
Attribute V - Health		3
	PHED 1100	
Attribute VI - Interdisciplinary		X
	POLI 1100	
Attribute VIIA - Arts		3
	INTR 1120	
Attribute VIIB - Humanities		X
	INTR 1120	
Attribute VIIC – Social Sciences		3
	GEOG 2210	
Attribute VIID - Natural Science		X
	CHEM 1105 (PR for CHEM 2200)	
Attribute VIII – Cultural Awareness		X
	GEOG 2210	
TOTAL GENERAL STUDIES HOURS		**30**
TOTAL FREE ELECTIVES		**27**
TOTAL HOURS		**120**

APPENDIX A
B.S. Degree in Biology
Proposed Program

BIOL 1105	BIOLOGICAL PRINCIPLES I	4
BIOL 1106	BIOLOGICAL PRINCIPLES II	4
BIOL 2202	GENERAL BOTANY	4
BIOL 2203	GENERAL ZOOLOGY	4
BIOL 3306	FUNDAMENTALS OF ECOLOGY.	4
BIOL 3368	ANIMAL PHYSIOLOGY	4
or BIOL 3370	PLANT PHYSIOLOGY	4
BIOL 3380	GENETICS	4
BIOL 3390	MOLECULAR BIOTECHNOLOGY	4
BIOL 4485	SENIOR SEMINAR	2
CHEM 1105	CHEMICAL PRINCIPLES	5
CHEM 2200	FOUNDATIONAL BIOCHEMISTRY	4
CHEM 2201	ORGANIC CHEMISTRY I	4
CHEM 2202	ORGANIC CHEMISTRY II	4

TOTAL Required Major Courses			51 hours
Major Electives			12 hours
BIOL 2224	MICROBIOLOGY	4	
BIOL 3312	ADVANCED BOTANY	4	
BIOL 3315	INVERTEBRATE ZOOLOGY	4	
BIOL 3316	VERTEBRATE ZOOLOGY	4	
BIOL 3330	AQUATIC ECOLOGY	4	
BIOL 3331	TERRESTRIAL ECOLOGY	4	
BIOL 3360	BIOCHEMISTRY	4	
BIOL 4420	DEVELOPMENTAL BIOLOGY	4	
BIOL 3301	ADVANCED HUMAN ANATOMY AND PHYSIOLOGY I	4	
BIOL 3302	ADVANCED HUMAN ANATOMY AND PHYSIOLOGY II	4	
TOTAL HOURS FOR MAJOR			63 hours

Required and Recommended General Studies Courses		
Attribute IA – Critical Analysis		3
	ENGL 2220	
Attribute IB – Quantitative Literacy		4
	MATH 1585 or 2501 (PR for BIOL 3390)	
Attribute IC – Written Communication		3
	ENGL 1101	
Attribute ID - Teamwork		3
	COMM 2200	
Attribute IE – Information Literacy		3
	ENGL1102	
Attribute IF – Technology Literacy		3
	TECH 1100	
Attribute IG – Oral Communication		3
	COMM 2200	

Attribute III - Citizenship		3
	POLI 1100	
Attribute IV - Ethics		3
	ENGL 2220	
Attribute V - Health		3
	PHED 1100	
Attribute VI - Interdisciplinary		X
	POLI 1100	
Attribute VIIA - Arts		3
	INTR 1120	
Attribute VIIB - Humanities		X
	INTR 1120	
Attribute VIIC – Social Sciences		3
	GEOG 2210	
Attribute VIID - Natural Science		X
	CHEM 1105 (PR for CHEM 2200)	
Attribute VIII – Cultural Awareness		X
	GEOG 2210	
TOTAL GENERAL STUDIES HOURS		**30**
TOTAL FREE ELECTIVES		**27**
TOTAL HOURS		**120**

Appendix B. Course Descriptions for Existing and Revised/New Courses

Old Catalog Course Description	New Catalog Course Description
	BIOL 3301 Advanced Human Anatomy and Physiology I. 4 hours. This is the first of a two-semester course focusing on the function and structure of the human body and how it maintains homeostasis. Students will begin with an introduction into the study of Human Anatomy and Physiology, histology, and a focus on a systems-based approach in learning the human body. BIOL3301 will cover the following systems: integumentary, skeletal, muscular, nervous, and endocrine. 3 hours of lecture and one 3-hour laboratory per week. PR: BIOL1106 and either BIOL2203, FORS3200, or permission of instructor. Offered on rotation in Fall semester only. See Biology program website for rotation schedule.
	BIOL 3302 Advanced Human Anatomy and Physiology II. 4 hours. This is the second of a two-semester course focusing on the function and structure of the human body and how it maintains homeostasis. Students will begin with a brief review of introductory material and histology and then focus on a systems-based approach in learning the human body. BIOL3302 will cover the following systems: cardiovascular, respiratory, lymphatic, digestive, urinary, and reproductive. 3 hours of lecture and one 3-hour laboratory per week. PR: BIOL 3301 with a C or better or instructor permission. Offered on rotation in Spring semester only. See Biology program website for rotation schedule.

Appendix C. Course Descriptions, Outlines and Outcomes for New and Revised Courses

BIOL 3301 Advanced Human Anatomy and Physiology I

I. introduction to the human body
    a. introduction
        i. define anatomy
        ii. define physiology
    b. structural organization
        i. chemical level
        ii. cellular level
        iii. tissue level
        iv. organ level
        v. organ systems overview
        vi. organismal level
    c. vital functions
        i. movement
        ii. responsiveness
        iii. metabolism
            1. anabolism
            2. catabolism
        iv. development, growth, and reproduction
    d. requirements for human life
        i. oxygen
        ii. nutrients
        iii. temperature
        iv. atmospheric pressure
    e. homeostasis
        i. homeostatic control
            1. variable
            2. receptors
            3. control center
            4. effector
        ii. feedback loops
            1. negative feedback loop
            2. positive feedback loop
    f. anatomical language
        i. anatomical position
            1. body positions
                a. supine
                b. prone
        ii. directional terminology
            1. body
                a. anterior/posterior
                b. cranial/caudal
                c. medial/lateral
                d. proximal/distal
                e. palmar/dorsal
                f. plantar/dorsal

iii. general body region terminology
iv. body cavities
    1. anterior body cavities
        a. thoracic
        b. abdominopelvic
    2. posterior body cavities
        a. cranial
        b. vertebral/spinal
    3. serous membranes
        a. pericardium
        b. pleura
        c. peritoneum
v. regions and quadrants of the peritoneal cavity
vi. planes & sections
    1. coronal / frontal
    2. sagittal
    3. cross / transverse
    4. longitudinal
    5. oblique

II. chemical level of organization
- a. matter
- b. energy
    - i. mechanical
    - ii. chemical
    - iii. electrical
- c. atoms and elements
- d. molecules and compounds
    - i. ions
    - ii. solutes and solvents
- e. chemical bonds
    - i. ionic
    - ii. covalent
    - iii. hydrogen bonds
- f. chemical reactions
    - i. reactant
    - ii. product
    - iii. characteristics of chemical reactions
- g. essential inorganic compounds
    - i. water
    - ii. salts
    - iii. acids and bases
        1. pH scale
        2. buffers
- h. essential organic compounds
    - i. carbon
    - ii. carbohydrates
    - iii. lipids
    - iv. proteins
    - v. nucleic acids

vi. ATP

III. cellular level of organization
- a. plasma membrane
  - i. phospholipid bilayer
  - ii. bilayer components
- b. membrane transport
  - i. active transport mechanisms
  - ii. passive transport mechanisms
- c. cytoplasm
- d. organelles
- e. dna and protein synthesis
- f. cell cycle
  - i. G1
  - ii. S
  - iii. G2
  - iv. M
    1. mitosis
    2. cytokinesis
  - v. cell cycle control and homeostasis
- g. differentiation
  - i. stem cells

IV. tissue level of organization
- a. embryonic origins
- b. epithelial tissue
- c. connective tissue
- d. muscle tissue
- e. nervous tissue
- f. membranes
- g. tissue injury and aging

V. integumentary system
- a. skin anatomy
  - i. epidermis
    1. strata and function
    2. pigmentation
  - ii. dermis
    1. papillary layer
    2. reticular layer
  - iii. hypodermis
  - iv. accessory structures
  - v. histology
- b. function of the integumentary system
  - i. homeostasis and pathology
  - ii. interactions with other organ systems

VI. skeletal system
- a. skeletal system function
- b. classification and structure of bones
  - i. histology
- c. function of bone types
- d. ossification

- i. intramembranous
  - 1. histology
- ii. endochondral
  - 1. histology

e. growth
- i. appositional
- ii. interstitial

f. homeostasis and pathology

g. interactions with other organ systems

VII. skeletal anatomy

a. axial division
- i. skeletal anatomy
- ii. ontogeny

b. appendicular division
- i. skeletal anatomy
- ii. ontogeny

VIII. joints

a. structural and functional classifications

b. fibrous

c. cartilaginous

d. synovial
- i. types of movement
- ii. anatomy of major articulation points

IX. muscle tissue

a. histology

b. skeletal muscle
- i. microanatomy
- ii. neuromuscular junction
  - 1. excitation and control
- iii. muscular physiology
  - 1. sliding filament theory
  - 2. types of muscle fibers
- iv. nervous system control of muscle tension
- v. homeostasis

c. smooth muscle
- i. physiology

d. cardiac muscle
- i. physiology

X. muscular system

a. muscle shapes and lever systems

b. muscle anatomy
- i. origin
- ii. insertion
- iii. action

c. axial muscle anatomy

d. appendicular muscle anatomy

XI. nervous system

a. structure and function of neurons

b. histology and cell types

i. neuron shape and physiology
ii. neuroglia type and physiology
c. action potential
d. neurotransmitters and receptors

XII. central nervous system
a. embryonic development
b. brain
i. anatomy
ii. physiology
c. spinal cord
i. anatomy
ii. physiology
d. interactions with other organ systems
i. meningeal layers
ii. csf and circulation

XIII. peripheral nervous system
a. cranial nerves
i. innervations and function
b. spinal nerves
i. plexuses
ii. innervations and function
c. somatic nervous system
i. sensory perception
1. receptor types
2. anatomy of receptors
3. physiology
ii. central processing
1. ascending pathways
2. sensory homunculus
iii. motor responses
1. cortical responses
2. descending pathways

XIV. special senses
a. photoreception
i. eye anatomy
ii. physiology
b. chemoception
i. olfaction
1. anatomy
2. physiology
ii. gustation
1. anatomy
2. physiology
c. hearing and equilibrium
i. ear anatomy
ii. physiology

XV. autonomic nervous system
a. sympathetic division
i. anatomy

ii. physiology
b. parasympathetic division
i. Anatomy
ii. Physiology
c. chemical signaling
d. central control structures
e. homeostasis
f. interactions with other organ systems

XVI. endocrine system
a. chemical signaling and hormones
i. receptors
ii. target cells
iii. half-life, onset, and duration of hormones
iv. hormone release
b. structures of the endocrine system
i. anatomical structures
ii. hormones produced
iii. physiology of hormones
iv. interactions with other organ systems
v. organs with secondary function
c. development and homeostasis

Outcome Competencies and Methods of Assessment

Learning Outcomes for BIOL3301

1. Explain how structure affects function.
2. Explain homeostasis and feedback loops for each organ system covered.
3. Explain the organization of the human body from chemical to organismal.
4. Explain the physiological functions of each organ system covered and identify the organs and structures within each system.
5. Discuss the interconnectedness of organ systems as covered in BIOL3301

Assessment for lecture/lab learning outcomes

Learning objectives will be assessed initially through in class response systems followed by multiple choice quizzes and homework assignments which focus on critical thinking questions. Learning objectives will also be assessed through standard exam questions which will include multiple choice, matching, short answer, essay, and image identification questions. Learning objectives focused on identification of structure and description of the associated functions will be assessed through laboratory activities and practicals.

BIOL 3302 Advanced Human Anatomy and Physiology II

XVII. BIOL3301 review
- a. define anatomy
- b. define physiology
  - i. homeostasis
  - ii. feedback loops
- c. structural organization of the human body
- d. tissues of the human body
- e. organ system review
  - i. nervous system
  - ii. endocrine system

XVIII. cardiovascular system: blood
- a. blood components and function
- b. formed elements
  - i. histology
  - ii. erythrocytes
    1. development
    2. function
  - iii. leukocytes
    1. types
    2. development
    3. function
  - iv. thrombocytes
    1. development
    2. function
- c. hemostasis
- d. blood typing
- e. diagnostic/clinical blood tests
- f. Interactions with other organ systems

XIX. cardiovascular system: heart
- a. heart anatomy
- b. heart histology and microanatomy
- c. heart physiology
  - i. cardiac cycle and intrinsic conduction
    1. blood flow through the heart
  - ii. cardiac physiology
    1. cardiac output
    2. heart rate, stroke volume
    3. factors affecting physiology
- d. development of the heart

XX. cardiovascular system: blood vessels
- a. structure and function of vessels
  - i. histology
- b. arterial system
  - i. arteries
    1. elastic
    2. muscular
  - ii. arterioles

- c. capillaries
- d. venous system
    - i. veins
    - ii. venules
- e. physiology of circulation
    - i. blood flow
    - ii. blood pressure
    - iii. blood resistance
    - iv. capillary exchange
- f. circulatory pathways
    - i. blood flow through the body
    - ii. fetal circulation
- g. homeostasis and interactions with other organ systems

XXI. lymphatic and immune system

- a. anatomy of the lymphatic system
    - i. lymphatic vessels
    - ii. lymphoid cells and tissue
        1. histology
    - iii. lymph nodes
    - iv. other lymphoid organs
    - v. movement of lymph
- b. physiology of the lymphatic and immune system
    - i. innate immune response
        1. surface barriers
        2. internal defense
        3. mediators and responses
    - ii. adaptive defense
        1. cells of the adaptive immune system
            - a. T-lymphocytes
            - b. B-lymphocytes
    - iii. immune responses
- c. homeostatic imbalances
- d. development of immune system
- e. vaccines

XXII. respiratory system

- a. anatomy
    - i. histology
- b. mechanics of breathing
- c. gas exchange
- d. transport of respiratory gases through the blood
- e. respiratory physiology
- f. homeostasis and interactions with other organ systems
- g. development of the respiratory system

XXIII. digestive system

- a. overview of digestive system
    - i. digestive processes
    - ii. regulation
- b. anatomy
    - i. alimentary canal

ii. accessory structures
iii. histology

c. physiology of chemical digestion and absorption
d. interactions with other organ systems

XXIV. metabolism and nutrition
a. diet and nutrition
b. metabolic functions and reactions
c. metabolism of macronutrients
i. carbohydrates
ii. lipids
iii. proteins
d. metabolic states
e. energy

XXV. urinary system
a. gross anatomy of the urinary system
b. renal anatomy
i. histology
c. renal physiology
i. urine formation
ii. tubular reabsorption
iii. renal blood flow
iv. regulation of renal function
d. homeostasis and interactions with other organ systems

XXVI. reproductive system
a. male anatomy
i. histology
b. male physiology
i. spermatogenesis
ii. hormones
c. female anatomy
i. histology
d. female physiology
i. ovulation
ii. menses
iii. hormones

XXVII. human development
a. fertilization to zygote
b. embryonic and fetal development
c. effects of pregnancy on mother
d. parturition and postnatal changes

Outcome Competencies and Methods of Assessment

Learning Outcomes for BIOL3302

1. Explain the physiological functions of each organ system covered and identify the organs and structures within each system.
2. Discuss the interconnectedness of organ systems as covered in BIOL3302.
3. Discuss the importance of metabolism and nutrition on overall human health and homeostasis.
4. Explain homeostasis and feedback loops for each organ system covered.

Assessment for lecture/lab learning outcomes

Learning objectives will be assessed initially through in class response systems followed by multiple choice quizzes and homework assignments which focus on critical thinking questions. Learning objectives will also be assessed through standard exam questions which will include multiple choice, matching, short answer, essay, and image identification questions. Learning objectives focused on identification of structure and description of the associated functions will be assessed through laboratory activities and practicals.

From: FSU Office of the Registrar
Sent: Tuesday, September 18, 2018 8:26 AM
To: Henson, Kristy
Cc: Ransom, Laura; Gonzalez, Cheri
Subject: RE: Request for Course Number availability

Good morning, Professor Henson—

I'm not sure if Cheri already answered your question, as she is out of the office this week, but the course numbers that you requested are available.

Please let me know if you have any questions. Sincerely,

Lori Schoonmaker, M.A.
Associate Registrar/PDSO

FAIRMONT STATE UNIVERSITY

1201 Locust Avenue
Fairmont, WV 26554
(304) 367-4141
FAX: (304) 367-4789

Fairmont State Enrollment Services (including Financial Aid, Registrar, Student Accounts, and Application Processing) is located in the Turley Student Services Center on the 3rd floor.

Please be sure to check in with our NEMO Queuing System located in the lobby to speak with a Student Services Representative.

FAIRMONT STATE UNIVERSITY

School of Education, Health & Human Performance

September 17, 2018
To Whom It May Concern,

Please accept this letter as evidence that those students majoring in Exercise Science who plan to pursue further professional schooling i.e. Physical Therapy, Occupational Therapy, Physicians Assistant, etc. will take the two course (4 hours each) Human Anatomy & Physiology sequence being proposed by the Biology Department.

Currently an average of 6 – 8 Exercise Science students per year have to take this two course sequence at another college due to professional school entrance requirements and the fact that this sequence is not offered here.

The Exercise Science faculty fully support the implementation of these two courses. Should you have any further questions about this please don't hesitate to contact me.

Sincerely,
Paul Reneau Ph.D.
Professor
School of Education, Health & Human Performance
304-367-4148
preneau@fairmontstate.edu

From: Wolfe, Brenda
Sent: Friday, October 5, 07:56
Subject: RE: Fairmont State HAP courses
To: Henson, Kristy

Hi Kristy

PT admissions committee, said this would be great.

Thank you

Brenda Wolfe
Program Manager

Professional & Undergraduate Programs | WVU School of Medicine
8701-C Health Sciences South | PO Box 9225 | Morgantown, WV 26506-9225

Phone: 304.293.1690 | **Fax**: 304.293.8384 | **Email**: bswolfe@hsc.wvu.edu

MOUNTAINEERS
GO FIRST.

From: Henson, Kristy <Kristy.Henson@fairmontstate.edu>
Sent: Thursday, October 4, 2018 1:46 PM
To: Wolfe, Brenda <bswolfe@hsc.wvu.edu>
Subject: Fairmont State HAP courses

Hi Brenda,
Thank you for speaking with me earlier.
I'm just sending a follow up email for you to verify that WVU's School of Medicine will accept our newly created courses to satisfy the 8 hours of HAP prerequisite:
Human anatomy and physiology I with lab – 4 hours
Human anatomy and physiology II with lab – 4 hours
Together these courses cover all of the body systems.
Thanks again,

Kristy Henson
Assistant Professor of Forensic Science

RATIONALE FOR THE PROPOSAL.

A. **Quantitative Assessment**: Indicate the types of assessment data, i.e., surveys, interviews, capstone courses, projects, licensure exams, nationally-normed tests, locally developed measurements, accreditation reports, etc., that were collected and analyzed to determine that curricular changes were warranted. Quantitative data is preferred.

Under the current curriculum, students are forced to take 2-semester human anatomy and physiology courses at a different institution to meet the requirements of pre-professional programs. Exercise science sends 6-8 students per year off campus (Paul Reneau, memo attached) and the biology program reports that approximately 5 students per year leave campus to meet these requirements as well.

B. **Qualitative Assessment**: Based upon the assessment data above, indicate why a curricular change is justified. Indicate the expected results of the change. Be sure to include an estimate of the increased cost, or reduction in cost of implementation. FOR EXAMPLE: Will new faculty, facilities, equipment, or library materials be required?

The current curriculum forces students away from Fairmont State to meet program requirements and may negatively impact student recruitment and retention for those in pre-professional career paths. A curricular change is justified to meet the needs of current students and may improve student recruitment and retention for pre-professional careers while additionally offering value to students in Exercise Sciences. West Virginia University's Physical Therapy program has acknowledged that these courses will be accepted to satisfy the admission pre-requisites for human anatomy and physiology (Brenda Wolfe, memo attached).

To implement these courses, students will be best served through the acquisition of additional instructional resources (e.g. histology slides, anatomical charts & models). These additional resources may be used to supplement instruction in additional human biology focused laboratory courses. These resources are not required to offer the initial curriculum, but will greatly improve student retention and engagement. Initial curriculum and activities will use available resources and digital materials.

III. Should this proposal affect any course or program in another school, a memo must be sent to the Dean of each school impacted and a copy of the memo(s) must be included with this proposal. In addition, the Deans of the affected schools must sign below to indicate their notification of this proposal.

By signing here, you are indicating your college's/school's notification of this proposal.

College/School	Dean	Signature
Education, Health and Human Performance	Dr. Amanda Metcalf	Amanda Metcalf
Science and Technology	Dr. Steven Roof	Steven Roof

IV. Should this proposal affect any course to be added or deleted from the general studies requirements, a memo from the chair of the General Studies Committee indicating approval of the change must be included with this proposal.
a. Not Applicable

V. ADDITIONAL COMMENTS.