I. CATALOG INFORMATION

A. Discipline: PHYSIOLOGY

B. Subject Code and Number: PHSO M01

C. Course Title: Human Physiology

D. Credit Course units:

Units: 4

Lecture Hours per week: 3

Lab Hours per week : 3

Variable Units : No

E. Student Learning Hours:

Lecture Hours:

Classroom hours: 52.5 - 52.5

Laboratory/Activity Hours:

Laboratory/Activity Hours 52.5 - 52.5

Total Combined Hours in a 17.5 week term: 105 - 105

F. Non-Credit Course hours per week _____

G. May be taken a total of: [X] 1 [ ] 2 [ ] 3 [ ] 4 time(s) for credit

H. Is the course co-designated (same as) another course: No [X] Yes [ ]
If YES, designate course Subject Code & Number: _____

I. Course Description:

Studies the physiological principles, function, integration and homeostasis of the human body at the cellular, tissue, organ, organ system and organism level: integumentary system, bone, skeletal system, smooth and cardiac muscles, nervous system, sensory organs, cardiovascular system, lymphatic and immune systems, respiratory system, urinary system, digestive system, endocrine system, and reproductive system. Utilizes laboratory computer simulations and experiments to demonstrate basic principles and introduce physiological techniques and instruments.

J. Entrance Skills

*Prerequisite: No [ ] Yes [X] Course(s)
ANAT M01 or concurrent enrollment and 1 year of high school Chemistry (or higher)

*Corequisite: No [X] Yes [ ] Course(s)

_____

Limitation on Enrollment: No [X] Yes [ ]

_____

Recommended Preparation: No [ ] Yes [X] Course(s)

BIOL M01 or BIOL M02A or BIOL M02AH and ENGL M02 and MATH M03

Other: No [X] Yes [ ]

K. Other Catalog Information:

This course is primarily intended for Nursing, Allied Health, Kinesiology, and other health-related majors.

Course Credit Limitations:
1. Credit will not be awarded for both the honors and regular versions of a course. Credit will be awarded only for the first course completed with a grade of "C" or better or "P". Honors Program requires a letter grade.
2. MC, CSU and UC - PHSO M01 or PHSO M01H and ANPH M01 combined: maximum credit, one course.

II. COURSE OBJECTIVES

Upon successful completion of the course, a student will be able to:

		Methods of evaluation will be consistent with, but not limited by, the following types or examples.
1	describe and distinguish various roles of major classes of biomolecules in living cells.	Lecture and laboratory exams Quizzes Laboratory reports and identification of structures Case studies and clinical applications may be included
2	describe key functional features of different types of human cells and how they communicate.	Lecture and laboratory exams Quizzes Identification of structures
3	identify key functions of major organ systems and the physiological mechanisms underlying their operation.	Lecture and laboratory exams Quizzes Identification of structures
4	demonstrate an understanding of how organ systems of the body are integrated and regulated.	Lecture and laboratory exams Quizzes Case studies and clinical applications may be included

5	demonstrate an understanding of how homeostasis is maintained in the body.	Lecture and laboratory exams Quizzes Case studies and clinical applications may be included
6	demonstrate knowledge of metabolic and physiological disorders of the major organ systems.	Lecture and laboratory exams Quizzes
7	analyze experimental data to demonstrate physiological principles.	Lecture and laboratory exams Quizzes
8	demonstrate an understanding of the scientific method, experimental design, and the philosophy of science; apply the scientific method and philosophy of science by designing components of and carrying out physiological experiments.	Lecture and laboratory exams Quizzes
9	apply the general concepts from the textbook and other references to the specific principles which are demonstrated in laboratory exercises.	Lecture and laboratory exams Quizzes Case studies and clinical applications may be included
10	describe and employ physiological laboratory techniques and practices.	Lecture and laboratory exams Quizzes Identification of structures

III. COURSE CONTENT

Estimated %	Topic	Learning Outcomes
Lecture (must total 100%)		
4.00%	Clinical applications	4, 5, 6
2.00%	The chemistry of life	1, 2, 3, 9
3.00%	Homeostasis and feedback systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2.00%	Cell membrane and cell-to-cell communication	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2.00%	Major body control systems	1, 2, 3, 4, 5, 6, 7, 8,

		9, 10
2.00%	Functions of the integumentary system	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2.00%	Role of bone tissue in homeostasis	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Skeletal muscle structure and function	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
3.00%	Membrane potential and action potentials	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
5.00%	Nervous system and integration	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
3.00%	Sense organ function	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Heart and cardiac cycle	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Cardiovascular system function and regulation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
3.00%	Lymphatic system functions and immunity	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Respiratory system function and regulation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Urinary system function and regulation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Water, electrolyte and acid-base balance	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Digestion and nutrition	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Metabolism	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Thermoregulation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Endocrine functions and regulation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
6.00%	Reproductive functions and regulation	1, 2, 3, 4, 5, 6, 7, 8,

		9, 10
Lab (must total 100%)		
6.00%	Measurements and graphing techniques	7, 8, 9, 10
7.00%	Cell transport mechanisms and permeability	1, 2, 5, 7, 8, 9, 10
7.00%	Skeletal muscle physiology	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Neurophysiology of nerve impulses	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	General sensory physiology	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Special senses physiology	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Endocrine system physiology	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Cardiovascular dynamics	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Cardiovascular physiology	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Respiratory system mechanics	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Chemical and physical processes of digestion	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Renal system physiology	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
7.00%	Acid-base balance	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
5.00%	Blood analysis	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
5.00%	Serological testing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

IV. TYPICAL ASSIGNMENTS

A. Writing assignments

Writing assignments are required. Possible assignments may include, but are not limited to:	
1	analyses of case studies examining homeostasis and pathogenesis.

2	lab reports based on analysis of body system functions.
3	written evaluation of information from computer lab simulations.

B. Appropriate outside assignments

Appropriate outside assignments are required. Possible assignments may include, but are not limited to:	
1	research using appropriate physiological literature from libraries and the internet.
2	survey of popular press for articles relating to physiology.
3	cooperative group planning for disease presentations.

C. Critical thinking assignments

Critical thinking assignments are required. Possible assignments may include, but are not limited to:	
1	evaluation of the impact of diet, stress and disease on the heart and cardiac cycle.
2	comparison of the endocrine and nervous systems.
3	research using appropriate physiological literature from libraries and the internet.

V. METHODS OF INSTRUCTION

Methods of instruction may include, but are not limited to:

- [ ] Distance Education – When any portion of class contact hours is replaced by distance education delivery mode (Complete DE Addendum, Section XV)
- [x] Lecture/Discussion
- [x] Laboratory/Activity
- [x] Other (Specify)
  Performance of laboratory activities demonstrating physiological events.
- [ ] Optional Field Trips
- [ ] Required Field Trips

VI. METHODS OF EVALUATION

Methods of evaluation may include, but are not limited to:

[X] Essay Exam	[X] Classroom Discussion	[X] Skill Demonstration
[X] Problem Solving Exam	[X] Reports/Papers/ Journals	[ ] Participation
[X] Objective Exams	[X] Projects	[X] Other (specify)

Evaluation of case studies to assess the students' ability to predict the human body's response when compensating for deviations from homeostasis.

VII. REPRESENTATIVE TEXTS AND OTHER COURSE MATERIALS

Zao, Peter, et al. PhysioEX 9.1: Laboratory Simulations in Physiology. 9.1 ed. Pearson, 2014.

Silverthorn, Dee Unglaub. Human Physiology: An Integrated Approach. 8th ed. Pearson, 2019.

Sackheim, George. An Introduction to Chemistry for Biology Students. 9th ed. Pearson, 2007.

VIII. STUDENT MATERIALS FEES

[X] No [ ] Yes

IX. PARALLEL COURSES

College	*Course Number*	*Course Title*	*Units*
CSU, Northridge	BIOL 281/282	Human Physiology/Lab Experiments in Human Physiology	3/1
University of California, Los Angeles	PHYSCI 3	Introduction to Human Physiology	5
CSU Long Beach	BIOL 207	Human Physiology	4
San Diego State Univ.	BIOL 261	Human Physiology	4
Sonoma State Univ.	BIOL 224	Human Physiology	4
CSU Chico	BIOL 104	Human Physiology	4

X. MINIMUM QUALIFICATIONS

Courses Requiring a Masters Degree:
Master's in any biological science OR Bachelor's in any biological science AND Master's in biochemistry, biophysics, or marine science OR the equivalent.

XI. ARTICULATION INFORMATION

A. Title V Course Classification:

1. This course is designed to be taken either:

   [ ] Pass/No Pass only (no letter grade possible); or
   [X] Letter grade (P/NP possible at student option)

2. Degree status:

   Either [X] Associate Degree Applicable; or [ ] Non-associate Degree Applicable

B. Moorpark College General Education:

1. Do you recommend this course for inclusion on the Associate Degree General Education list?
   Yes: [X] No: [ ] If YES, what section(s)?

   [X] A1 - Natural Sciences - Biological Science
   [ ] A2 - Natural Sciences - Physical Science
   [ ] B1 - Social and Behavioral Sciences - American History/Institutions
   [ ] B2 - Social and Behavioral Sciences - Other Social Behavioral Science
   [ ] C1 - Humanities - Fine or Performing Arts
   [ ] C2 - Humanities - Other Humanities
   [ ] D1 - Language and Rationality - English Composition
   [ ] D2 - Language and Rationality - Communication and Analytical Thinking
   [ ] E1 - Health/Physical Education
   [ ] E2 - PE or Dance
   [ ] F - Ethnic/Gender Studies

C. California State University(CSU) Articulation:

1. Do you recommend this course for transfer credit to CSU? Yes: [X] No: [ ]

2. If YES do you recommend this course for inclusion on the CSU General Education list?
   Yes: [X] No: [ ] If YES, which area(s)?

   A1 [ ] A2 [ ] A3 [ ] B1 [ ] B2 [X] B3 [X] B4 [ ]

   C1 [ ] C2 [ ] D1 [ ] D2 [ ] D3 [ ] D4 [ ] D5 [ ]

   D6 [ ] D7 [ ] D8 [ ] D9 [ ] D10 [ ] E [ ]

D. University of California (UC) Articulation:

1. Do you recommend this course for transfer to the UC? Yes: [X] No: [ ]

2. If YES do you recommend this course for the Intersegmental General Education Transfer Curriculum (IGETC)? Yes: [X] No: [ ]

   IGETC Area 1: English Communication

   [ ] English Composition
   [ ] Critical Thinking-English Composition
   [ ] Oral Communication

   IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

   [ ] Mathematical Concepts

   IGETC Area 3: Arts and Humanities

   [ ]

- [ ] Arts
- [ ] Humanities

IGETC Area 4: Social and Behavioral Sciences

- [ ] Anthropology and Archaeology
- [ ] Economics
- [ ] Ethnic Studies
- [ ] Gender Studies
- [ ] Geography
- [ ] History
- [ ] Interdisciplinary, Social & Behavioral Sciences
- [ ] Political Science, Government & Legal Institutions
- [ ] Psychology
- [ ] Sociology & Criminology

IGETC Area 5: Physical and Biological Sciences (mark all that apply)

- [ ] Physical Science Lab or Physical Science Lab only (none-sequence)
- [ ] Physical Science Lecture only (non-sequence)
- [X] Biological Science
- [ ] Physical Science Courses
- [ ] Physical Science Lab or Biological Science Lab Only (non-sequence)
- [ ] Biological Science Courses
- [ ] Biological Science Lab course
- [ ] First Science course in a Special sequence
- [ ] Second Science course in a Special Sequence
- [X] Laboratory Activity
- [ ] Physical Sciences

IGETC Area 6: Language other than English

- [ ] Languages other than English (UC Requirement Only)
- [ ] U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)
- [ ] U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)

XII. REVIEW OF LIBRARY RESOURCES

A. What planned assignment(s) will require library resources and use?

The following assignments require library resources:
Reading assignments and review of physiological literature using the Library's print and online resources, particularly those in the medical, health-related, and scientific fields.

B. Are the currently held library resources sufficient to support the course assignment?

YES: [X] NO: [ ]

If NO, please list additional library resources needed to support this course.

XIII. PREREQUISITE AND/OR COREQUISITE JUSTIFICATION

Requisite Justification for ANAT M01 or concurrent enrollment

[X] A. Sequential course within a discipline.

[ ] B. Standard Prerequisite or Corequisite required by universities.

[ ] C. Corequisite is linked to companion lecture course.

[ ] D. Prerequisite or Corequisite is authorized by legal statute or regulation.
Code Section: _____

[ ] E. Prerequisite or Corequisite is necessary to protect the students' health and safety.

[ ] F. Computation or communication skill is needed.

[ ] G. Performance courses: Audition, portfolio, tryouts, etc. needed.

and

Requisite Justification for 1 year of high school Chemistry (or higher)

[ ] A. Sequential course within a discipline.

[X] B. Standard Prerequisite or Corequisite required by universities.

De Anza College; UCLA; Foothill College;

[ ] C. Corequisite is linked to companion lecture course.

[ ] D. Prerequisite or Corequisite is authorized by legal statute or regulation.
Code Section: _____

[ ] E. Prerequisite or Corequisite is necessary to protect the students' health and safety.

[ ] F. Computation or communication skill is needed.

- [ ] G. Performance courses: Audition, portfolio, tryouts, etc. needed.

XIV. WORKPLACE PREPARATION

PHSO M01: Not Applicable

XV. DISTANCE LEARNING COURSE OUTLINE ADDENDUM

PHSO M01: Not Applicable

XVI. GENERAL EDUCATION COURSE OUTLINE ADDENDUM

General Education Division of Learning [check all applicable boxes]:

- [X] Natural Sciences
  - [X] Biological Science
  - [ ] Physical Science
- [ ] Social and Behavioral Sciences
  - [ ] American History/Institutions
  - [ ] Other Social Science
- [ ] Humanities
  - [ ] Fine or Performing Arts
  - [ ] Other Humanities
- [ ] Language and Rationality
  - [ ] English Composition
  - [ ] Communication and Analytical Thinking
- [ ] Health/Physical Education
- [ ] Ethnic/Women's Studies

Check either Option 1 or Option 2

- [X] **OPTION #1:** Moorpark College has already received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. Note: This option applies only to technical revisions and updated courses.
- [ ] **OPTION #2:** Moorpark College has not received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. This option applies to all new and substantively revised courses.

XVII. STUDENT MATERIALS FEE ADDENDUM

PHSO M01: Not Applicable

XVIII. REPEATABILITY JUSTIFICATION TITLE 5, SECTION 55041

PHSO M01: Not Applicable

XIX. CURRICULUM APPROVAL

Course Information:

Discipline: PHYSIOLOGY

Discipline Code and Number: PHSO M01

Course Revision Category: Outline Update

Course Proposed By:

Originating Faculty Audrey Chen 09/12/2018

Faculty Peer: Melia Tabbakhian 09/13/2018

Curriculum Rep: Beth Miller 09/14/2018

Department Chair: Audrey Chen 09/15/2018

Division Dean: Carol Higashida 09/13/2018

Approved By:

Curriculum Chair: Jerry Mansfield 03/12/2019

Executive Vice President: _____

Articulation Officer: Letrisha Mai 02/21/2019

Librarian: Mary LaBarge 02/21/2019

Implementation Term and Year: Fall 2019

Approval Dates:

Approved by Moorpark College Curriculum Committee: 03/05/2019

Approved by Board of Trustees (if applicable): _____

Approved by State (if applicable): 03/13/2019