Los Angeles Community College District

COURSE OUTLINE

Outline Status: Outline Update (ECD 9627); 2009-2010

Section I: BASIC COURSE INFORMATION

1. **COLLEGE: L.A. SOUTHWEST COLLEGE**
2. **SUBJECT: BIOLOGY**
3. **COURSE NUMBER: 020**
4. **COURSE TITLE: HUMAN ANATOMY AND PHYSIOLOGY**
5. **UNITS: 8**
6. **CATALOG COURSE DESCRIPTION:**

This course systematically integrates the fundamentals of human anatomy with the fundamentals of cellular as well as organ system physiology. Instruction and laboratory procedures (observation, experimentation, and dissection) are designed to provide a solid foundation in the anatomy, histology, and physiology of the eleven organ systems of the human body.

7. **CLASS SCHEDULE COURSE DESCRIPTION:**

This course systematically integrates the fundamentals of human anatomy with the fundamentals of cellular as well as organ system physiology. Instruction and laboratory procedures (observation, experimentation, and dissection) are designed to provide a solid foundation in the anatomy, histology, and physiology of the eleven organ systems of the human body.

8. **INITIAL COLLEGE APPROVAL DATE: 1995**
9. **LAST UPDATE DATE: 12/15/09**
10. **CLASS HOURS:**

	Standard Hrs Per Week (based On 18 weeks)		Total Hs per Term (hrs per week x 18)		Units	
Lecture:	**6**		**108**		**6**	
Lab/Activity (w / homework):	**0**		**0**		**0**	
Lab/Activity (w /o homework):	**6**		**108**		**2**	
Totals:	Lecture:	**6**	Lecture:	**108**	Lecture:	**6**
	Lab:	**6**	Lab:	**108**	Lab:	**2**
	Total:	**12**	Total:	**216**	Total:	**8**
Totals In Protocol:	Lecture:	**6**	Lecture:	**108**		
	Lab:	**6**	Lab:	**108**		
	Total:	**12**	Total:	**216**	Total:	**8**

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT:

Note: The LACCD's *Policy on Prerequisites, Corequisites and Advisories* requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an 'appropriate and rational measure of a student's readiness to enter the course or program' and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

PREREQUISITES: Yes

	Subject	Number	Course Title	Units	Validation Approval Date
	Biology	**003**	**Introduction to Biology**	**4**	**12/15/09**
Or	**Biology**	**005**	**Introduction to Human Biology**	**4**	**12/15/09**

COREQUISITES: No

	Subject	Number	Course Title	Units	Validation Approval Date

ADVISORIES: No

	Subject	Number	Course Title	Units	Validation Approval Date

12. OTHER LIMITATIONS ON ENROLLMENT: (See Title 5, Section 58106 and Board Rule 8603 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

None

Section II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

COURSE CONTENT AND SCOPE - **Lecture:** Outline the topics included in the lecture portion of the course *(Outline reflects course description, all topics covered in class).*	Hours per topic	COURSE OBJECTIVES - **Lecture:** Upon successful completion of this course, the student will be able to..*(Use action verbs - see Bloom's Taxonomy for 'action verbs requiring cognitive outcomes.')*
1. Introduction to Anatomy & Physiology a. levels of organization b. homeostasis and feedback mechanisms c. directional terms d. body cavities and planes, organ relationships	3	1. Name and identify on models, drawings, or from descriptions, the major structures associated with the eleven organ systems of the human body and their functions.
2. Chemistry of the Body a. composition of matter b. chemical bonds c. inorganic and organic compounds	3	2. Compare and contrast the structural, functional, and positional characteristics of human anatomy and the three dimensional relationships of the organs of the human body.
3. Cytology a. plasma membrane b. organelles c. mitosis and the cell cycle	3	3. Locate, identify, and describe the structure and function of tissues from diagrams and photomicrographs.
4. Membrane Potential a. potentials (resting and action) b. threshold stimuli, depolarization, repolarization	1	4. Identify major chemicals and cellular organelles of the human body and describe their basic structure, function and metabolism.
5. Transportation Across the Membrane a. osmosis, diffusion, facilitated diffusion, filtration b. active transport	2	5. Explain the basic principles of genetics and solve simple genetic problems.
6. Protein Synthesis a. transcription and translation	3	6. Identify the major types of biochemicals involved in metabolic processes and describe their basic structure, function, metabolic or digestive origin, and fate.
7. Histology a. structure/function of primary tissues of body	3	7. Diagram the flow of major body fluids and transported cells or molecules along their anatomical paths.
8. Integumentary System a. epidermis, dermis, hypodermis b. derivatives of skin	3	8. Examine the physiological processes of the systems studied, including pertinent physical and chemical laws.
9. Skeletal System a. classification of bones b. bone structure and development c. bone homeostasis d. axial and appendicular skeletons	6	9. Analyze short articles related to the topics studied in preparation for oral report.
10. Arthrology a. structural and functional classification of joints b. homeostatic imbalances	3	10. Describe how each system relates to the maintenance of homeostasis and relate all physiological phenomena to the problem of maintaining homeostasis.
11. Muscular System a. types of muscle tissue and homeostasis b. gross and microscopic anatomy c. sliding filament theory of muscle contraction d. muscle mechanics	6	

e. identification of major skeletal muscles, including origin, insertion, action, and innervations		
12. Hematology a. blood composition and functions b. blood typing and hemostasis	3	
13. Cardiovascular System a. heart anatomy and physiology b. structure of blood vessels c. hemodynamics and circulatory pathways	6	
14. Lymphatic System a. structure of lymphatic vessels, tissues, nodes, and other lymphoid organs b. lymph and its transport c. immune system, innate and adaptive defenses, homeostatic imbalances	6	
15. Respiratory System a. functional anatomy b. mechanics of breathing c. gas laws and partial pressure d. external respiration e. transport of respiratory gases, control of respiration, and homeostatic imbalances	5	
16. Digestive System a. functional anatomy b. physiology of chemical digestion and absorption c. homeostatic imbalances	5	
17. Nutrition and Cellular Metabolism a. nutrition and metabolic pathways for carbohydrate, lipid, and protein, energy balance and homeostasis b. regulation of body temperature	6	
18. Urinary System a. kidney, nephron, ureter, urinary bladder and urethra anatomy and physiology b. urine composition and production/flow, micturition, and homeostatic imbalances	5	
19. Fluid and Electrolyte Balance a. body fluids and compartments b. water and electrolyte balance c. acid-base balance and homeostatic imbalances	3	
20. Reproductive Systsem a. male and female reproductive anatomy and physiology b. gametogenesis, menstrual cycle, and homeostatic imbalances	6	
21. Heredity and Genetics a. vocabulary of genetics and types of inheritance b. Mendelian genetics, monohybrid/dihybrid	3 3	

crosses, and sex-linked diseases 22. Nervous System a. neurophysiology b. central and peripheral nervous system anatomy and physiology c. cranial and spinal nerves d. sensory and motor pathways and reflex activity e. autonomic nervous system f. special senses and homeostatic imbalances 23. Endocrine System a. major endocrine organs and their hormones, homeostatic imbalances	9 12	
Total:	108	
Total Hrs In Protocol:	108	

1. (cont'd) LAB:

COURSE CONTENT AND SCOPE - **Lab:** Outline the topics included in the laboratory portion of the course *(Outline reflects course description, all topics covered in class).*	Hours per topic	COURSE OBJECTIVES - **Lab:** Upon successful completion of this course, the student will be able to..*(Use action verbs - see Bloom's Taxonomy for 'action verbs requiring cognitive outcomes.')*
1. Histology and the Integument a. observation of tissues under the microscope 2. Movement of Materials a. experiments on diffusion, osmosis, and filtration, tonicity of solutions 3. Skeletal System a. osteologica terminology b. axial and appendicular skeletons 4. Muscle Physiology a. computer simulations demonstrating muscle twitch, multiple motor unit and temporal summation, treppe and fatigue 5. Muscular System and Cat Dissection 6. Hematology a. blood typing, hematocrit, and WBC differential count 7. Heart Anatomy a. adult and fetal comparisons 8. Blood Vessels and Circulatory Routes 9. Cardiovascular Physiology a. heart sounds, pulse, blood pressure, ECG recording using computer software b. use of stethoscope and sphygmomanometer 10. Respiratory Anatomy 11. Spirometry a. mechanics of breathing b. measurement of lung volumes and capacities using spirometers 12. Digestive Anatomy 13. Physiology of Digestion a. enzyme action and simulated digestive experiments using computer software 14. Urinalysis a. analysis of urinary components and sediment	9 6 9 3 12 6 3 6 6 3 3 3 3 3 3 3 9 6 12	1. Using the scientific method, record, interpret, and analyze physiological data through use of appropriate laboratory equipment and procedures to formulate conclusions. 2. Locate on a dissected cat, structures comparable to those of the human body. 3. Examine tissue types from prepared slides under the microscope. 4. Identify major organs and associated structures on human models, preserved specimens, and diagrams. 5. After observing bone specimens, name them and identify their bony markings. 6. Diagram the pathway of blood through the heart, urine through the kidneys, food through the digestive system, egg and sperm through the reproductive systems to fertilization.

using indicators and centrifuge 15. Acid-Base Balance a. problem solving clinical situations given arterial blood gas values b. acidosis and alkalosis, c. compensation and homeostatic mechanisms 16. Reproductive Anatomy 17. Nervous System a. sheep brain dissection b. testing reflexes and 2-pt discrimination test c. cranial and spinal nerves 18. Special Senses a. anatomy of eye and ear b. visual acuity, color blindness test, blind spot, accommodation, and bone conduction of sound using tuning forks 19. Lab Practicums and Final Lab Practicum		
Total:	108	
Total Hrs In Protocol:	108	

1. (cont'd) SLO:

The student will.. **(outcome)**	As measured by the following method.. **(assessment strategy)**	And, if applicable, scored by the following learning rubric. (provide attachment)	Results are examined to determine if the outcome is achieved. Include planned or actual assessment date. **(results & evaluation)**	Recommendations to improve teaching and learning. **(modifications)**
STUDENT LEARNING OUTCOMES: (LECTURE) 1) Given a human case study incorporating arterial blood gas (ABG) data, the student will analyze the situation and determine type of acidosis or alkalosis and any compensatory actions by lungs or kidneys.	(LECTURE) 1) Rubric will be used to evaluate student performance.	Fall 2010 Rubric Criteria: 1) Identification of disorder 2pts--correct 1 pt--partially correct 0 pt--totally incorrect 2) Compensation 2 pts--correct 1 pt--indicated compensation but wrong type 0 pt--totally incorrect 3) Compensatory Action 2 pts--correct 1 pt--correct organ but wrong mechanism 0 pt--totally incorrect		

(LAB) 1) Given a set of disarticulated human bones, at least 70% of the students should be able to identify specific bones and their bony markings on a practicum (at least 70%proficiency).	(LAB) 1) embedded assessment in final lab practicum. Five common questions for all sections will be used. Target: at least 70% of students achieve 70% or higher scores.	(LAB) 1) Spring and Fall 2009		
2) Given a model, picture, dissected cat, or human subject, identify specific muscles, joints, and their origins/insertions on a practicum (70% of students with at least 70% proficiency).	2) embedded assessment in final lab practicum. Five common questions for all sections will be used. Target: at least 70% of students achieve 70% or higher scores.	2) Spring 2010		
3) Given a photograph or microscope slide, 70% of students will identify major tissue types and recall their location in the body with 70% proficiency or better. SLO REVIEWED 12/12/09 GY	3) embedded assessment in final lab practicum. Five common questions for all sections will be used. Target: at least 70% of students achieve 70% or higher scores.	3) Spring 2011		

2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

Human Anatomy and Physiology Laboratory Manual, Marieb, E. 2009; Human Anatomy and Physiology, Marieb, E. 2009

3. READING ASSIGNMENTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

1. Kapit and Elson, The Anatomy Coloring Book, 3rd ed., Benjamin Cummings Publisher, 2002. 2. Kapit, Macey, and Meisami, The Physiology Coloring Book, 2nd ed., Benjamin Cummings Publisher, 2000. (These readings supplement classroom instruction and prepares students for exams.)

4. WRITING ASSIGNMENTS:

Writing assignments, as required by Title 5, in this course may include, but are not limited to the following:

Oral presentations (10 minutes) on topics in anatomy and physiology are given by students that require library research, written documentation, and utilization of a visual aid. In addition, students must provide written answers to Review Questions in preparation for each unit examination.

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS (HOMEWORK):

Out of class assignments (Homework) may include, but are not limited to the following:

Students are required to do a literature search in the library as they prepare for their oral presentation. In addition, students must provide written answers to Review Questions in preparation for each unit examination. In the lab, students organize and present a 5-minute review session on a specific topic using visual aids in preparation for the final lab practicum. Specific lab review questions are also answered by students for homework.

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Provide examples of assignments, as required by Title 5, that demonstrate critical thinking.

Students reason from observations/hypothetical situations and draw explanatory or predictive conclusions. An example of “think tank” question on an exam is: “Imagine a dehydrated desert prospector and a champagne drinking partygoer, each of whom drinks a liter of water at time zero and void urine over a period of 3 hours. Using their urine samples, compare the probable differences in volume, composition, color, and specific gravity.” In the laboratory, students are subjected to activities of classifying and comparing. For example, the muscle physiology lab involves organizing data and applying various quantifying and measuring techniques (e.g., obtaining data via computer simulations and determining the threshold and maximal stimuli. Students also, after examining sample arterial blood gas (ABG) data, conclude the type of acidosis or alkalosis).

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be 'based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.' Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed 'Course Objectives' at the beginning of Section II):

Unit lecture exams, laboratory quizzes, laboratory notebook, oral presentation, lecture review questions, laboratory procedure and general attendance evaluation, laboratory practicums, final exams.

8. METHODS OF INSTRUCTION:

Please Check All That Apply

- [x] **Lecture**
- [x] **Discussion**
- [x] **Laboratory**
- [ ] **Activity**
- [ ] **Field Experience**
- [ ] **Independent Study**
- [ ] **Other (Please Explain)**

9. SUPPLIES:

List the supplies the student must provide.

Dissecting kit, latex or vinyl gloves, lab coat or apron, eye goggles

10. COMPUTER COMPENTENCY:

If applicable, explain how computer competency is included in the course.

Students are encouraged to utilize computers for preparation of reports and simulated experiments.

11. INFORMATION COMPENTENCY:

If applicable, explain how information competency is included in the course.

Students need to utilize the library and research methods to prepare for the oral presentation and written report.

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

NA

13. SCANS COMPETENCIES:

(required for all courses with vocational TOP Codes; recommended for all courses)

SCANS (Secretary's Commission on Necessary Skills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

☑ **Managing Time:** Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.

☐ **Managing Money:** Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.

☐ **Managing Material and Facility Resources:** Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

☑ **Participating as Member of a Team:** Working cooperatively with others and contributing to group's efforts with ideas, suggestions and effort.

☑ **Teaching Others New Skills:** Helping others learn needed knowledge and skills.

☑ **Exercising Leadership:** Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.

☐ **Negotiating:** Working toward agreement that may involve exchanging specific resources or resolving divergent interests.

☑ **Working with Cultural Diversity:** Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

☑ **Acquiring and Evaluating Information:** Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.

☑ **Organizing and Maintaining Information:** Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.

☑ **Interpreting and Communicating Information:** Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.

☑ **Using Computers to Process Information:** Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

☐ **Understanding Systems:** Knowing how social, organizational and technological systems work and operating effectively with them.

☐ **Monitoring and Correcting Performance:** Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.

☐ **Improving or Designs Systems:** Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

☐ **Selecting Technology:** Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.

☐ **Applying Technology to Tasks:** Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.

☐ **Maintaining and Troubleshooting Equipment:** Preventing, identifying, or solving problems with equipment, including computers and other technologies.

Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: Yes

a. If yes, the course will be a requirement portion of the 'approved program' listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at https://misweb.cccco.edu/webproginv/prod/invmenu.htm)

Liberal Arts: Natural Sciences AA - Program: 490104 State ID: 19064

2. GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:

a. Area Requested: a. Natural Science

Approval Date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas - Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 -General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

b. Area Requested: None

Approval Date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas - Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 -General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

Section IV: ARTICULATION INFORMATION

(Complete in consultation with College Articulation Officer)

1. TRANSFER STATUS:

a. **Transferable to the University of California: Yes**	c. **Transferable to the California State University: Yes**
b. **UC Approval Date:**	d. **College Approval Date:**

2. GENERAL EDUCATION FOR TRANSFER:

IGETC Certification	*CSU Certification*
a. **Area Requested: 5B : Biological Science** b. **Date Requested: 12/1/90** c. **IGETC Approval Date: 12/1/91** If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.	a. **Area Requested: B2 : Biological Science** b. **Date Requested: 12/1/88** c. **CSU Approval Date: 9/1/89** If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.
a. **2nd Area Requested:** b. **Date Requested:** c. **IGETC Approval Date:** If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.	a. **2nd Area Requested: B3 : Laboratory Activity** b. **Date Requested: 12/1/88** c. **CSU Approval Date: 12/1/89** If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

3. MAJOR REQUIREMENT FOR TRANSFER:

Will this course be articulated to meet lower division major requirements?: No

List college/university and the majors:

CAN NUMBER: **CAN SEQUENCE #:**

CAN Approval -

Date requested: Date approved:

Section V: SUPPLEMENTAL COURSE INFORMATION

1. DEPT/DIVISION NAME: Natural Sciences, Health and Physical Ed

2. DEPT/DIVISION CODE: 07

3. SUBJECT CODE: 133

4. SUBJECT ABBREVIATION: BIOLOGY

5. RECOMMENDED MINIMUM QUALIFICATION AREA:

6. ABBREVIATION FOR TRANSCRIPTS: HUMAN ANAT&PHYSIOL

7. DEGREE CREDIT:

Indicate whether the course meet the 'standards for approval' for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level: **Degree Applicable**

8. GRADING METHOD: LETTER GRADE

9. REPETITIONS: # of times repeated for credit: **0**

If this course is repeatable, explain how repetition of this course meets Title 5, section 55041(c)(2)(B):

10. PRIOR TO TRANSFERABLE LEVEL:

This course attribute applies to ***English, Writing, ESL, reading and mathematics*** courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: **Not applicable**

11. CREDIT BASIC SKILLS:

Title 5, section 55000(j) defines basic skills as 'courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b).': **No**

12. CROSS REFERENCE:

Is this course listed as equivalent in content to existing College/District courses in another discipline?: **No**

If Yes, list courses (documentation of cross-discipline agreement must be provided):

13. COURSE SPECIFICALLY DESIGNED FOR STUDENTS W/ DISABILITIES:

Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an 'approved special class' for students with disabilities?: **No**

If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029:

14. COOPERATIVE EDUCATION STATUS:

Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the colleges approved cooperative work experience education program?: **No**

15. COURSE CLASSIFICATION: Liberal Arts and Sciences

Note: A course Classification, TOP Code and SAM code must be aligned e.g., Courses with an 'Occupational' Course Classification must have an 'Occupational' TOP Code and a SAM Code of A, B, C, or D; courses that do not have an 'Occupational' Course Classification cannot have an Occupational TOP Code and must have an 'E' SAM Code. Courses coded as 'basic skills' in #11 should be coded 'Adult and Secondary Basic Skills.'

16. TOP CODE - (6 digits XXXX.XX)**: 0410.00**

Course content should match discipline description in Taxonomy of Programs found at http://ecd.laccd.edu/TaxonomyOfPrograms.doccurriculum.htm

17. SAM CODE (**S**tudent **A**ccountability **M**odel)**: E**

18. FUNDING AGENCY CODE:

19. STATE COURSE ID:

Section VI: APPROVAL STATUS

1. APPROVAL STATUS:

		Approval Date Of	Board Date	Requested Effective Semester	Approved Effective Semester
a.	☐ **New Course**	**College:**	Board: 10/20/95	Effective Semester:	Effective Semester:
b.	☐ **Addition of Existing District Course**	**College:**	Board:	Effective Semester:	Effective Semester:
c.	☐ **Course Change***	**College:**		Effective Semester:	Effective Semester:
d.	☑ **Outline Update**	**College: 12/15/09**			Effective Semester:
e.	☐ **New Course**	**College:**		Effective Semester:	Effective Semester:
f.	☐ **New Course**	**College:**	Board:	Effective Semester:	Effective Semester:

* Changes to a course require the completion of a 'Course Change Request' form and approval by the college's Curriculum Committee.
In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.

Section VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES

(complete in consultation with Department Chair and the appropriate Academic Administrator)

1. ORIGINATOR: Yoshida, Glenn

2. DEPARTMENT: 07

3. IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:

☐ By additional funds. Describe:

☐ By deleting courses from the college catalog and course database. List specific courses to be deleted:

☐ By deleting sections of existing course. List courses and number of sections to be deleted:

FIRST YEAR: SECOND YEAR: THIRD YEAR:

☐ By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

4. IMPACT

IMPACT -- Will this course directly impact other course offerings and/or associate degree or certificate programs on campus? No (If yes, briefly explain how)

5. METHOD OF SUPPORT

-- Indicate how the college plans to support the proposed course:

A. Additional staff -- List additional staff needed:

B. Classroom -- List classroom type needed:

C. Equipment -- List new equipment needed and indicate funding source for any new equipment:

D. Supplies- List supplies and indicate dollar value:

E. Library/Learning Resources- The course initiator shall consult with the College Librarian and review the college library,

book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

CERTIFICATION AND RECOMMENDATION

☑ This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate Degree.

☐ This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

Originator	Date
Department/Cluster Chairperson	Date
Articulation Officer	Date
Librarian	Date
Dean (if applicable)	Date
Curriculum Committee Chairperson	Date
Academic Senate President	Date
Vice President, Academic Affairs	Date

Section VIII: ADDENDA

(Uploaded Documents)

Prerequisite Document	**Biology 20 Content Review**	**Bio20ContentReview09.doc**

CONTENT REVIEW FOR PREREQUISITE VALIDATION

Target Course & Number, Title: Biology 20, Human Anatomy and Physiology

(Course to which pre/corequisite/advisory applies)

Check Applicable Box

☒ Prerequisite: **Biology 3 or Biology 5 (or equivalent)**

☐ Corequisite:

☐ Advisory:

A. **Target Course Entry Skills: Course & Number, Title: Biology 20**

(For prerequisites/corequisites, list specific skills and/or knowledge necessary for students to succeed in the target class. For advisories, list skills/knowledge which will enrich or deepen the student's knowledge obtained from the course but without which the student may still succeed in the course. Attach additional sheet if necessary. NUMBER EACH SKILL.)

Students should be able to:

1. operate a compound binocular microscope.
2. use the metric (SI) system and interconvert measurements.
3. describe the structure and categorization of carbohydrates, lipids, proteins, and nucleic acids.
4. identify and describe the functions of cellular organelles.
5. apply basic biological concepts and protocol to interpret laboratory observations.

B. **Exit Skills Provided By Prerequisite/Corequisite/Advisory Course or Assessment: Course & Number, Title**

(List specific skills and/or knowledge that are the outcome of the prerequisite/corequisite/advisory course or assessment. For courses already in the curriculum, these should be present in the course objectives in the course outline. Attach additional sheet if necessary. NUMBER EACH SKILL.)

Biology 3

1. Apply and interpret the terminology of biology in written and oral expression.
2. Demonstrate the ability to read with comprehension, current, historical, and popular literature in biology.
3. Develop the ability to use laboratory methods for studying life processes of living plants and animals.
4. Apply the general concepts from the textbook or other references to the specific principles that are demonstrated by the laboratory exercises and show this in the written reports.
5. Express awareness of the complexity and interrelatedness of living organisms in the environment

Biology 5

6. Describe the scientific method and, after reading articles in professional journals, determine the quality of the reported research.
7. Compare cellular and genetic processes across the 5 Kingdoms of living organisms.
8. Identify basic human structures, describe their functions and discuss the evolution of the human body.
9. Describe the disease process and how the human immune system fights off these processes.
10. Describe the interrelationships between humans, other forms of life and the physical environment.

CONTENT REVIEW SKILLS MATRIX FOR PREREQUISITE VALIDATION*

***Validation requires at least one match of each entry skill with any exit skill(s).**

Biology 20
Entering Skills of Target Course

Biology 3* or Biology 5**
Exit Skills of Prerequisite Course

	1	2	3	4	5
1					
2					
3	*	*		*	
4			*	*	*
5					
6		**			**
7			**	**	
8	**				
9					
10					

Comments:
(Include justification for assessments, health and safety, or non-course prerequisites)

PARTICIPANTS IN CONTENT REVIEW:
(Signatories should include instructors for both exit and entering skills courses.)

Name: _____ Title: _____ Initial: _____Date: _____

Name: _____ Title: _____Initial: _____Date: _____

Name: _____ Title: _____Initial: _____Date: _____

CERTIFIED BY:

_____
Initiator Date

_____
Department Chairperson Date

_____
Curriculum Chairperson Date