Undergraduate Curriculum Committee
Proposal Summary
9/24/2015 Meeting

(Revised: 9/18/15)

Department: Biological Sciences

Course Addition: BIOL 336L Credit Hours 1

Course Title: Fish Biology Laboratory

Abbreviated Title: Fish Biology Lab

Contact hours per week: Lecture Lab 3 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 2250 Student preparation minutes: 1125

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☑ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

BIOL 106

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

BIOL 336

Requirement or listed choice for any program of study: Yes ☑ No ☐

Biology BS, Biological Sciences-Biology: 3410

Biology BS, Biological Sciences-Ecology, Evolution and Organismal Biology: 3409

Biology BS, Biological Sciences-Cellular, Molecular, and Developmental Biology: 3414

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☐ No ☑

Additional equipment required: Yes ☐ No ☑

Additional lab facilities required: Yes ☐ No ☑

Course description for catalog:

Study of the anatomy and physiology of fish. Topics include ecology, fish diseases, and marine and freshwater fishery techniques. Field trips may be offered.

Justification:

Hands on experience learning fish anatomy, morphometric, meristics, and identification are essential for understanding the material. The other organismal courses taught in biology such as herpetology, mammalogy, and ornithology all include labs.

Topical course outline:

Anatomy, morphometrics and meristics, physiology, behavior, species identification

Student Learning Outcomes:

Departmental: 1) Students will demonstrate a broad, comprehensive knowledge of the main areas of biology (including evolution, diversity, ecology, cell biology and genetics) and the ability to apply this knowledge to address new questions.

Course specific: Upon completion of this course, a student should be able to: 1) identify the anatomical structures of fish, 2) identify fish species using dichotomous keys, morphometrics, and meristics, and 3) apply techniques for studying fishes in the laboratory and field setting.

Proposed by: Eriek S. Hansen Expected Implementation: Spring 2016

Course Modifications

BIOL 301

	Current	Proposed
Course Prefix:	BIOL	
Course No.:	301	
Credit Hours	3	
Course Title:	Genetics	

Prerequisites:

Current: BIOL 105 and MATH 113: BIOL 302 recommended

Proposed: BIOL 105 and MATH 113

Requirement or listed choice for any program of study: Yes ☑ No ☐

Biology BS, Biological Sciences-Biology: 3410

Biology BS, Biological Sciences-Ecology, Evolution and Organismal Biology: 3409

Biology BS, Biological Sciences-Cellular, Molecular, and Developmental Biology: 3414

Justification:

The prerequisites are amended to reflect our proposal to make BIOL301 a prerequisite course for BIOL302. This proposal will help standardize the path that Biology students take through the required curriculum.

Proposed by: Kyle J McQuade Expected Implemention: Fall 2016

BIOL 302

	Current	Proposed
Course Prefix:	BIOL	
Course No.:	302	
Credit Hours	3	
Course Title:	Cellular Biology	

Prerequisites:

Current: BIOL 106, 107, or consent of instructor

Proposed:
BIOL 301 and CHEM 132

Requirement or listed choice for any program of study: Yes ☑ No ☐

Biology BS, Biological Sciences-Biology: 3410

Biology BS, Biological Sciences-Ecology, Evolution and Organismal Biology: 3409

Biology BS, iological Sciences-Cellular, Molecular, and Developmental Biology: 3414

Justification:

The prerequisites are amended to accurately reflect the background a student needs to master the concepts discussed in Cellular Biology. These topics include the mechanisms of the central dogma of molecular biology, which are covered in BIOL301, and biomolecular structure and function, for which CHEM132 is required for proper understanding.

Proposed by: Kyle J McQuade Expected Implemention: Fall 2016

BIOL 336

Current **Proposed**

Course Prefix: BIOL
Course No.: 336
Credit Hours 3
Course Title: Fish Biology
Co-requisites:

Current: None

Proposed: BIOL 336L

Requirement or listed choice for any program of study: Yes ☑ No ☐

Biology BS, Biological Sciences-Biology: 3410

Biology BS, Biological Sciences-Ecology, Evolution and Organismal Biology: 3409

Biology BS, Biological Sciences-Cellular, Molecular, and Developmental Biology: 3414

Justification:

The addition of a laboratory will provide hands-on experience learning fish anatomy, morphometric, meristics, and identification, which are essential for understanding the material. The other organismal courses taught in biology, such as herpetology, mammalogy, and ornithology, all include labs.

Proposed by: Eriek S. Hansen Expected Implemention: Spring 2016

BIOL 441

Current **Proposed**

Course Prefix: BIOL

Course No.: 441

Credit Hours 3

Course Title: Endocrinology

Prerequisites:

Current: BIOL 106 or consent of instructor

Proposed:
BIOL 105, CHEM 132 and junior or senior standing

Requirement or listed choice for any program of study: Yes ☑ No ☐

Biology BS, Biological Sciences-Cellular, Molecular, and Developmental Biology: 3414

Justification:

The prerequisites are amended to reflect that BIOL106 will no longer be taken by all Biology students due to curricular changes passed last year. CHEM132 is added as a prerequisite because the course discusses cellular communication at the molecular level, so an introduction to chemistry is essential. The modification to require Junior or Senior standing reflects the fact that this is a 400 level course that will likely be too advanced for students who have not built a solid base in the sciences.

Proposed by: Kyle J McQuade Expected Implemention: Spring 2016

Program Modification

Biological Sciences-Biology: 3410

Degree Type: BS

Revision to program sheet: Yes ☑ No ☐

Description of modification:

Add BIOL 336 lab to restricted electives (Biology "categories").

Justification:

A lab is concurrently being added to BIOL 336 Fish Biology. Students will be able to use the lecture and lab as part of their upper-division Biology options.

Revision to SLOs: Yes ☐ No ☑

Other changes: Yes ☑ No ☐

The BIOL 336L Fish Biology Laboratory will enhance and reinforce the learning experience provided by BIOL 336 Fish Biology, thereby strengthening the Biology program.

Proposed by: Susan Longest

Director of Teacher Education Signature: N/A

Expected Implementation: Fall 2016

~~2015~~2016-~~2016~~ 2017 PETITION/PROGRAM SHEET

Degree: Bachelor of Science
Major: Biological Sciences
Concentration: Biology

About This Major . . .

The Bachelor of Science degree with a Biological Science major provides a broad background in the biological sciences. Students choose biology courses from four areas: cell, developmental, and molecular biology; anatomical and physiological biology; organismal biology; and ecology, evolution, and systematics. Students wishing to obtain teacher certification complete a concentration in Teacher Licensure. The Biology Concentration also offers field courses on tropical ecosystems in Ecuador and on marine invertebrate communities in Oregon. The Department of Biology operates the only electron microscope facility in the area. Graduates of our program pursue careers in the medical field, plant pathology, wildlife biology, cell biology or biotechnology, among just a few of the career options available with a Biology degree from Colorado Mesa University.

For more information on what you can do with this major, go to http://www.coloradomesa.edu/career/whatmajor.html.

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Demonstrate a breadth of knowledge in the life sciences with an accompanying depth of knowledge particularly in the key areas of cell and molecular biology, organismal diversity, ecology, evolution and genetics. (Specialized Knowledge)
2. Utilize the scientific approach to address novel questions and problems through the development of hypotheses, design of experiments, collection of data, analysis of data, and interpretation of results. (Quantitative Fluency/Applied Learning)
3. Identify, examine, evaluate and discuss the scientific literature. (Critical Thinking)
4. Articulate biological principles and ideas effectively, both in written and oral form. (Communication Fluency)

NAME: _____ **STUDENT ID #:** _____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ **( )** _____

I, (Signature)_____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

_____ _____ 20_____
Signature of Advisor Date

_____ _____ 20_____
Signature of Department Head Date

_____ _____ 20_____
Signature of Registrar Date

DEGREE REQUIREMENTS:

- 120 semester hours total (Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher).
- 40 upper division credits (A minimum of 15 taken at the 300-400 course levels within the major at CMU).
- 2.0 cumulative GPA or higher in all CMU coursework
- A 2.5 GPA is required in the major courses. A "C" or higher is required in all major courses.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- Essential Learning Capstone should be completed between 45 and 75 hours.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.

ESSENTIAL LEARNING REQUIREMENTS (31 semester hours)
See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Course No	Title	Sem.hrs	Grade	Term/Trns

English (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)

ENGL 111	English Composition	3	_____	_____
ENGL 112	English Composition	3	_____	_____

Math MATH 113 **or higher** (3 semester hours, must receive a grade of "C" or better, must be completed by the time the student has 60 semester hours.)

MATH 113	College Algebra	4*	_____	_____

*3 credits apply to the Essential Learning requirements and 1 credit applies to elective credit

Humanities (3 semester hours)

_____ ____ _____ ____ _____ _____

Social and Behavioral Sciences (6 semester hours)

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

Natural Sciences (7 semester hours, one course must include a lab)

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ___L _____ ____ _____ _____

History (3 semester hours)

HIST ____ _____ ____ _____ _____

Fine Arts (3 semester hours)

_____ ____ _____ ____ _____ _____

Course No	Title	Sem.hrs	Grade	Term/Trns

WELLNESS REQUIREMENT (2 semester hours)

KINE 100	Health and Wellness	1	_____	_____
KINA 1____	_____	1	_____	_____

ESSENTIAL LEARNING CAPSTONE (4 semester hours)

ESSL 290	Maverick Milestone (see English & math pre-reqs)	3	_____	_____
ESSL 200	Essential Speech (co-requisite)	1	_____	_____

FOUNDATION COURSES (17 semester hours) Must receive a grade of "C" or better and should be completed by the end of the sophomore year.

BIOL 105	Attributes of Living Systems	3	_____	_____
BIOL 105L	Attributes of Living Systems Lab	1	_____	_____
CHEM 131*	General Chemistry	4	_____	_____
CHEM 131L*	General Chemistry Lab	1	_____	_____
CHEM 132*	General Chemistry	4	_____	_____
CHEM 132L*	General Chemistry Lab	1	_____	_____
STAT 200	Probability and Statistics	3	_____	_____
OR				
*MATH 146	Calculus for Biological Sciences	3	_____	_____

*If MATH 146 is taken, 2 credits apply to elective credit

BIOLOGICAL SCIENCES MAJOR REQUIREMENTS
(48 semester hours) A 2.5 GPA is required in the major courses. A "C" or better is required in all major courses.

Required Core Courses (10 semester hours)

BIOL 208	Ecology and Evolution	3	_____	_____
BIOL 208L	Ecology and Evolution Lab	1	_____	_____
BIOL 301	Principles of Genetics	3	_____	_____
BIOL 301L	Principles of Genetics Lab	1	_____	_____
BIOL 483	Senior Thesis	2	_____	_____

Required Related Study Area (18 semester hours) Should be completed by the end of the sophomore year.

BIOL 106	Principles of Animal Biology	3	_____	_____
BIOL 106L	Principles of Animal Biology Lab	1	_____	_____
BIOL 107	Principles of Plant Biology	3	_____	_____
BIOL 107L	Principles of Plant Biology Lab	1	_____	_____
PHYS 111*	General Physics	4	_____	_____
PHYS 111L*	General Physics Lab	1	_____	_____
PHYS 112*	General Physics	4	_____	_____
PHYS 112L*	General Physics Lab	1	_____	_____

* A higher level subject may be taken in the same category with advisor approval.

Course No Title Sem.hrs Grade Term/Trns

Additional Biology Courses (20 semester hours) At least 50% must be at the 300 level or above. Courses must be selected from three of the following four areas: (1) Cell, Molecular, and Developmental; (2) Organismal; (3) Anatomical and Physiological; (4) Ecology, Evolution, and Systematics. At least ONE of the following must be included: BIOL 302, BIOL 341/341L, OR BIOL 421/421L.

Category 1: Cellular, Developmental and Molecular

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

Category 2: Organismal

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

Category 3: Anatomical and Physiological

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

Course No Title Sem.hrs Grade Term/Trns

Category 4: Ecology, Evolution and Systematics

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

ELECTIVES (18 semester hours) (All college level courses appearing on your final transcript **not listed above** that will bring your total semester hours to 120 hours, including 40 upper-division credit hours.) Up to 24 upper-division hours may be needed.

*MATH 113 College Algebra 1 _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

__ _____ ____ _____

Additional Biology Courses (20 semester hours minimum) At least 50% must be at the 300 level above. Courses must be selected from three of the following four areas:

Category 1: Cellular, Molecular, and Developmental
†BIOL 302 Cellular Biology (3)
BIOL 310/310L Developmental Biology and Lab (3) / (2)
BIOL 343 Immunology (3)
BIOL 344/344L Forensic Molecular Biology and Lab (3) / (1)
BIOL 371L Lab Investigations in Cellular and Molecular Biology (3)
BIOL 425 Molecular Genetics (3)
BIOL 442 Pharmacology (3)
CHEM 315/315L Biochemistry I and Lab (3) / (1)

Category 2: Organismal
BIOL 250/250L Intro to Microbiology and Lab (3) / (2)
BIOL 316/316L Animal Behavior and Lab (3) / (1)
BIOL 322/322L Plant Identification and Lab (2) / (2)
BIOL 331/331L Insect Biology and Lab (3) / (2)
BIOL 333 Marine Biology (3)
BIOL 335/335L Invertebrate Zoology and Lab (3) / (1)
BIOL 336/336L Fish Biology (3) / (1)
BIOL 350/350L Microbiology and Lab (3) / (1)
BIOL 411/411L Mammalogy and Lab (3) / (1)
BIOL 412/412L Ornithology and Lab (3) / (1)
BIOL 413/413L Herpetology and Lab (3) / (1)
BIOL 431/431L Animal Parasitology and Lab (3) / (1)
BIOL 433 Marine Invertebrate Communities (3)
BIOL 450/450L Mycology and Lab (3) / (2)

Category 3: Anatomical and Physiological
BIOL 209/209L Human Anatomy & Physiology I and Lab (3) / (1)
BIOL 210/210L Human Anatomy & Physiology II and Lab (3) / (1)
BIOL 241 Pathophysiology (4)
†BIOL 341/341L General Physiology and Lab (3) / (1)
BIOL 342/342L Histology and Lab (2) / (2)
BIOL 409/409L Gross and Developmental Human Anatomy (2) / (2)
BIOL 410/410L Human Osteology and Lab (3) / (1)
†BIOL 421/421L Plant Physiology and Lab (3) / (1)
BIOL 423/423L Plant Anatomy and Lab (3) / (2)
BIOL 426/426L Intro to Electron Microscopy and Lab (2) / (2)
BIOL 441 Endocrinology (3)

Category 4: Ecology, Evolution, and Systematics
BIOL 211/211L Ecosystem Biology and Lab (4) / (1)
BIOL 315 Epidemiology (3)
BIOL 320 Plant Systematics (3)
BIOL 321/321L Taxonomy of Grasses and Lab (2) / (2)
BIOL 403 Evolution (3)
BIOL 405/405L Adv. Ecological Methods and Lab (3) / (2)
BIOL 406 Plant-Animal Interactions (3)
BIOL 407 Tropical Field Biology (5)
BIOL 408 Desert Ecology (3)
BIOL 414/414L Aquatic Biology and Lab (3) / (1)
BIOL 415 Tropical Ecosystems (2)
BIOL 418/418L Wildlife Management and Lab (3) / (2)

† At least one of these lecture/lab courses must be included.
NOTE: Topics courses (BIOL 196/296/396/496) may not be used as Additional Biology Courses but must be used for elective credit.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN BIOLOGICAL SCIENCES – BIOLOGY

This is a recommended sequence of course work. Certain courses may have prerequisites or are only offered during the Fall or Spring semesters. It is the student's responsibility to meet with the assigned advisor and check the 2 year course matrix on the Colorado Mesa website for course availability.

FRESHMAN YEAR

Fall Semester		Hours	Spring Semester		Hours
BIOL 105	Attributes of Living Systems	3	BIOL 106	Principles of Animal Biology	3
BIOL 105L	Attributes of Living Systems Lab	1	BIOL 106L	Principles of Animal Biology Lab	1
CHEM 131	General Chemistry	4	CHEM 132	General Chemistry	4
CHEM 131L	General Chemistry Lab	1	CHEM 132L	General Chemistry Lab	1
MATH 113*	College Algebra	4	MATH 146*	Calculus for Biological Sciences (5) **or**	
KINE 100	Health and Wellness	1	STAT 200	Probability and Statistics (3)	3-5
KINA	Activity	1	ESSL	Fine Arts	3
		15			15-17

*Professional schools (medical, veterinary, dental) may require one or two semesters of calculus. Math 151 and 152 will fulfill the MATH requirement.

SOPHOMORE YEAR

Fall Semester		Hours	Spring Semester		Hours
BIOL 107	Principles of Plant Biology	3	BIOL 208	Ecology and Evolution	3
BIOL 107L	Principles of Plant Biology Lab	1	BIOL 208L	Ecology and Evolution Lab	1
PHYS 111	General Physics (or higher)	4	PHYS 112	General Physics (or higher)	4
PHYS 111L	General Physics Lab (or higher)	1	PHYS 112L	General Physics Lab (or higher)	1
ENGL 111	English Composition	3	ENGL 112	English Composition	3
ESSL	Social/Behavioral Science	3	ESSL	History	3
		15			15

JUNIOR YEAR

Fall Semester		Hours	Spring Semester		Hours
BIOL XXX	(selected from list)	7	BIOL XXX (selected from list)		7
BIOL 301	Principles of Genetics	3	ESSL	Humanities	3
BIOL 301L	Principles of Genetics	1	ESSL	Social/Behavioral Science	3
ESSL 290	Maverick Milestone		Electives*	3	3
ESSL 200	Essential Speech	1			16
		15			

SENIOR YEAR

Fall Semester		Hours	Spring Semester		Hours
BIOL XXX (selected from list)		6	BIOL 483	Senior Thesis	2
ESSL	Natural Science	3	ESSL	Natural Science with Lab	4
Electives*#		6	Electives*#		6-8
		15			12-14

* It is strongly recommended that all electives be upper division.

Professional schools (medical, veterinary, dental) may require one or two semesters of organic chemistry, which may be taken to fulfill part of the electives.

POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.** You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December**.
3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
5. NOTE: During your senior year, you will be required to take a capstone exit assessment/project (e.g,, Major Field Achievement Test).

Biological Sciences-Cellular, Molecular, and Developmental Biology: 3414

Degree Type: BS

Revision to program sheet: Yes ☑ No ☐

Description of modification:

Add BIOL 336 lab to restricted electives (Biology "categories").

Justification:

A lab is concurrently being added to BIOL 336 Fish Biology. Students will be able to use the lecture and lab as part of their upper-division Biology options.

Revision to SLOs: Yes ☐ No ☑

Other changes: Yes ☑ No ☐

The BIOL 336L Fish Biology Laboratory will enhance and reinforce the learning experience provided by BIOL 336 Fish Biology, thereby strengthening the Biology program.

Proposed by: Susan Longest

Director of Teacher Education Signature: N/A

Expected Implementation: Fall 2016

~~2015~~2016-~~2016~~ 2017 PETITION/PROGRAM SHEET
Degree: Bachelor of Science
Major: Biological Sciences
Concentration: Cellular, Molecular, and Developmental Biology

About This Major . . .

The Bachelor of Science degree with a Biological Sciences major provides a broad background in the biological sciences. Students choose biology courses from four categories: cellular, molecular, and developmental biology; anatomical and physiological biology; organismal biology; and ecology, evolution, and systematics. The Cellular, Molecular, and Developmental Biology Concentration will provide a solid background in cell and molecular biology, genetics, and biochemistry. The concentration prepares graduates of this program for careers in the medical field, cell biology, and biotechnology, which are just a few of the career options available.

For more information on what you can do with this major, go to http://www.coloradomesa.edu/career/whatmajor.html

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Demonstrate a breadth of knowledge in the life sciences with an accompanying depth of knowledge particularly in the key areas of cell and molecular biology, ecology, evolution, and genetics. (Specialized Knowledge)
2. Utilize the scientific approach to address novel questions and problems through the development of hypotheses, design of experiments, collection of data, analysis of data, and interpretation of results. (Quantitative Fluency/Applied Learning)
3. Identify, examine, evaluate, and discuss the scientific literature. (Critical Thinking)
4. Articulate biological principles and ideas effectively, both in written and oral form. (Communication Fluency)

NAME: _____ **STUDENT ID #::**_____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ **( )** _____

I, (Signature)_____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

_____ _____ 20_____
Signature of Advisor Date

_____ _____ 20_____
Signature of Department Head Date

_____ _____ 20_____
Signature of Registrar Date

DEGREE REQUIREMENTS:

- 120 semester hours total (Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher).
- 40 upper division credits (A minimum of 15 taken at the 300-400 course levels within the major at CMU).
- 2.00 cumulative GPA or higher in all CMU coursework.
- A 2.5 GPA is required in the major courses. A "C" or higher is required in all major courses.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- Essential Learning Capstone should be completed between 45 and 75 hours.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.

ESSENTIAL LEARNING REQUIREMENTS (31 semester hours)
See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Course No	Title	Sem.hrs	Grade	Term/Trns

English (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)

ENGL 111	English Composition	3	_____	_____
ENGL 112	English Composition	3	_____	_____

Math (3 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)

MATH 151	Calculus I	5*	_____	_____

*3 credits apply to the Essential Learning requirements and 2 credits apply to electives

Humanities (3 semester hours)

_____ ____ _____ ____ _____ _____

Social and Behavioral Sciences (6 semester hours)

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____

Natural Sciences (7 semester hours, one course must include a lab.) CHEM 131/131L and CHEM 132/132L are recommended. Both are prerequisites for upper level chemistry. If chosen, 7 credits apply to the Essential Learning requirement and 3 credits apply to electives.

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
_____ ___L _____ ____ _____ _____

History (3 semester hours)
HIST ____ _____ ____ _____ _____

Fine Arts (3 semester hours)

_____ ____ _____ ____ _____ _____

WELLNESS REQUIREMENT (2 semester hours)

KINE 100	Health and Wellness	1	_____	_____
KINA 1____	_____	1	_____	_____

ESSENTIAL LEARNING CAPSTONE (4 semester hours)

ESSL 290	Maverick Milestone (see English & math pre-reqs)	3	_____	_____
ESSL 200	Essential Speech (co-requisite)	1	_____	_____

FOUNDATION COURSES (17-19 semester hours) Must receive a grade of "C" or better and should be completed by the end of the sophomore year.

BIOL 105	Attributes of Living Systems	3	_____	_____
BIOL 105L	Attributes of Living Systems Lab	1	_____	_____
PHYS 111*	General Physics I	4	_____	_____
PHYS 111L*	General Physics I Lab	1	_____	_____
PHYS 112*	General Physics II	4	_____	_____
PHYS 112L*	General Physics II Lab	1	_____	_____
STAT 200	Probability and Statistics	3	_____	_____
OR				
MATH 152	Calculus II	5	_____	_____

*A higher level subject can be taken in the same category with advisor approval.

BIOLOGICAL SCIENCES MAJOR REQUIREMENTS
(53 semester hours) A 2.5 GPA is required in the major courses. A "C" or better is required in all major courses.

Required Core Courses (10 semester hours)

BIOL 208	Fundamentals of Ecology and Evolution	3	_____	_____
BIOL 208L	Fundamentals of Ecology and Evolution Lab	1	_____	_____
BIOL 301	Principles of Genetics	3	_____	_____
BIOL 301L	Principles of Genetics Lab	1	_____	_____
BIOL 483	Senior Thesis	2	_____	_____

Required Related Study Area (31 semester hours)

BIOL 102	Plant & Animal Biodiversity	3	_____	_____
BIOL 102L	Plant & Animal Biodiversity Lab	1	_____	_____
OR				
BIOL 108	Diversity of Organisms	3	_____	_____
BIOL 108L	Diversity of Organisms Lab	1	_____	_____
BIOL 302	Cellular Biology	3	_____	_____
BIOL 310	Developmental Biology	3	_____	_____
BIOL 310L	Developmental Biology Lab	2	_____	_____
BIOL 371L	Laboratory Investigations in Cellular & Molecular Biology I	3	_____	_____
CHEM 315	Biochemistry I	3	_____	_____
BIOL 425	Molecular Genetics	3	_____	_____
CHEM 311†	Organic Chemistry I	4	_____	_____
CHEM 311L†	Organic Chemistry I Lab	1	_____	_____
CHEM 312†	Organic Chemistry II	4	_____	_____
CHEM 312L†	Organic Chemistry II Lab	1	_____	_____

† CHEM 311/311L and 312/312 require CHEM 131/131L and 132/132L as prerequisites. Students should take CHEM 131/131L and 132/132L for the Essential Learning Natural Sciences.

Course No	Title	Sem.hrs	Grade	Term/Trns
Additional Biology Courses (12 semester hours chosen from the lists below)				

Course No	Title	Sem.hrs	Grade	Term/Trns
Electives (11-13 semester hours) (All college level courses appearing on your final transcript, **not listed above,** that will bring your total semester hours to 120 hours, including 40 upper division hours.) Up to 7 upper division hours may be needed. Research courses are recommended.				
MATH 151 Calculus I		2*		
CHEM 131/131L/132/132L		3*		

Category1: Cellular, Molecular, and Developmental
BIOL 343 Immunology (3)
BIOL 344/344L Forensic Molecular Biology and Lab (3) / (1)
BIOL 442 Pharmacology (3)
CHEM 315L Biochemistry I Lab (1)
CHEM 316 Biochemistry II (3)

Category 2: Organismal
BIOL 250/250L Intro to Microbiology and Lab (3) / (2)
BIOL 316/316L Animal Behavior and Lab (3) / (1)
BIOL 322/322L Plant Identification and Lab (2) / (2)
BIOL 331/331L Insect Biology and Lab (3) / (2)
BIOL 333 Marine Biology (3)
BIOL 335/335L Invertebrate Zoology and Lab (3) / (1)
BIOL 336/336L Fish Biology (3) / (1)
BIOL 350/350L Microbiology and Lab (3) / (1)
BIOL 411/411L Mammalogy and Lab (3) / (1)
BIOL 412/412L Ornithology and Lab (3) / (1)
BIOL 413/413L Herpetology and Lab (3) / (1)
BIOL 421 Plant Physiology and Lab (3) / (1)
BIOL 431/431L Animal Parasitology and Lab (3) / (1)
BIOL 433 Marine Invertebrate Communities (3)
BIOL 450/450L Mycology and Lab (3) / (2)

Category 3: Anatomical and Physiological
BIOL 209/209L Human Anatomy & Physiology I and Lab (3) / (1)
BIOL 210/210L Human Anatomy & Physiology II and Lab (3) / (1)
BIOL 241 Pathophysiology (4)
BIOL 341/341L General Physiology and Lab (3) / (1)
BIOL 342/342L Histology and Lab (2) / (2)
BIOL 409/409L Gross and Developmental Human Anatomy (2) / (2)
BIOL 410/410L Human Osteology and Lab (3) / (1)
†BIOL 421/421L Plant Physiology and Lab (3) / (1)
BIOL 423/423L Plant Anatomy and Lab (3) / (2)
BIOL 426/426L Intro to Electron Microscopy and Lab (2) / (2)
BIOL 441 Endocrinology (3)

Category 4: Ecology, Evolution, and Systematics
BIOL 211/211L Ecosystem Biology and Lab (4) / (1)
BIOL 315 Epidemiology (3)
BIOL 320 Plant Systematics (3)
BIOL 321/321L Taxonomy of Grasses and Lab (2) / (2)
BIOL 403 Evolution (3)
BIOL 405/405L Adv. Ecological Methods and Lab (3) / (2)
BIOL 406 Plant-Animal Interactions (3)
BIOL 407 Tropical Field Biology (5)
BIOL 408 Desert Ecology (3)
BIOL 414/414L Aquatic Biology and Lab (3) / (1)
BIOL 415 Tropical Ecosystems (2)
BIOL 418/418L Wildlife Management and Lab (3) / (2)

NOTE: Topics courses (BIOL 196/296/396/496) as well as research courses (BIOL 387/487), internships (BIOL 499), teaching practicum (BIOL 493), and independent study (BIOL 495) may not be used as Additional Biology Courses but must be used for elective credit.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN BIOLOGICAL SCIENCES – CELLULAR, MOLECULAR, AND DEVELOPMENTAL BIOLOGY

This is a recommended sequence of course work. Certain courses may have prerequisites or are offered only during the fall or spring semesters. It is the student's responsibility to meet with the assigned advisor and check the 2-year course planning matrix on the Colorado Mesa website for course availability.

FRESHMAN YEAR

Fall Semester		Hours
BIOL 105	Attributes of Living Systems	3
BIOL 105L	Attributes of Living Systems Lab	1
ESSL	Natural Science with Lab	
(CHEM 131	General Chemistry I)	4
(CHEM 131L	General Chemistry I Lab)	1
MATH 151*	Calculus I	5
KINE 100	Health and Wellness	1
		15

Spring Semester		Hours
BIOL 102	Plant and Animal Biodiversity **or**	
BIOL 108	Diversity of Organisms	3
BIOL 102L	Plant and Animal Biodiversity Lab **or**	
BIOL 108L	Diversity of Organisms Lab	1
ESSL	Natural Science	3
(CHEM 132	General Chemistry II)	4
(CHEM 132L	General Chemistry II Lab)	1
STAT 200	Probability and Statistics (3) **or**	
MATH 152	Calculus II (5)	3-5
ENGL 111	English Composition	3
		15-17

*Professional schools (medical, veterinary, dental) may require one or two semesters of calculus. Math 151 and 152 will fulfill the MATH requirement.

SOPHOMORE YEAR

Fall Semester		Hours
BIOL 208	Fundamentals of Ecology and Evolution	3
BIOL 208L	Fundamentals of Ecology and Evolution Lab	1
CHEM 311	Organic Chemistry I	4
CHEM 311L	Organic Chemistry I Lab	1
ENGL 112	English Composition	3
ESSL	Social/Behavioral Science	3
		15

Spring Semester		Hours
BIOL 301	Principles of Genetics	3
BIOL 301L	Principles of Genetics Lab	1
CHEM 312	Organic Chemistry II	4
CHEM 312L	Organic Chemistry II Lab	1
ESSL	Humanities	3
ESSL	History	3
		15

JUNIOR YEAR

Fall Semester		Hours
BIOL 302	Cellular Biology	3
PHYS 111	General Physics I	4
PHYS 111L	General Physics I Lab	1
CHEM 315	Biochemistry I	3
ESSL 290	Maverick Milestone	3
ESSL 200	Essential Speech	1
		15

Spring Semester		Hours
BIOL 310	Developmental Biology	3
BIOL 310L	Developmental Biology Lab	2
PHYS 112	General Physics II	4
PHYS 112L	General Physics II Lab	1
ESSL	Social/Behavioral Science	3
KINA Activity		1
		14

Take MCAT in spring or early fall of senior year for following fall admission for medical school.

SENIOR YEAR

Fall Semester		Hours
BIOL 371L	Lab Investigations in Cell & Molecular Biology	3
ESSL	Fine Arts	3
BIOL XXX (selected from list)		4
Electives*		5
		15

Spring Semester		Hours
BIOL 425	Molecular Genetics	3
BIOL 483	Senior Thesis	2
BIOL XXX (selected from list)		8
Electives*		1-3
		14-16

POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.** You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December**.
3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
5. NOTE: During your senior year, you will be required to take a capstone exit assessment/project (e.g,, Major Field Achievement Test).

Biological Sciences-Ecology, Evolution and Organismal Biology: 3409

Degree Type: BS

Revision to program sheet: Yes ☑ No ☐

Description of modification:

Add BIOL 336 lab to restricted electives (Biology "categories").

Justification:

A lab is concurrently being added to BIOL 336 Fish Biology. Students will be able to use the lecture and lab as part of their upper-division Biology options.

Revision to SLOs: Yes ☐ No ☑

Other changes: Yes ☑ No ☐

The BIOL 336L Fish Biology Laboratory will enhance and reinforce the learning experience provided by BIOL 336 Fish Biology, thereby strengthening the Biology program.

Proposed by: Susan Longest

Director of Teacher Education Signature: N/A

Expected Implementation: Fall 2016

~~2015~~2016-~~2016~~ 2017 PETITION/PROGRAM SHEET
Degree: Bachelor of Science
Major: Biological Sciences
Concentration: Ecology, Evolution, and Organismal Biology

About This Major . . .

The Bachelor of Science degree with a Biological Sciences major provides a broad background in the biological sciences. Students choose biology courses from four categories: cellular, molecular, and developmental biology; anatomical and physiological biology; organismal biology; and ecology, evolution, and systematics. The Ecology, Evolution, and Organismal Biology Concentration will provide a solid background in ecology and evolution, and offers field courses in a variety of areas, in addition to internships and research opportunities. Graduates of this program may pursue careers in ecology, plant biology, fish and wildlife biology, and evolutionary biology, which are just a few of the career options available.

For more information on what you can do with this major, go to http://www.coloradomesa.edu/career/whatmajor.html

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Demonstrate a breadth of knowledge in the life sciences with an accompanying depth of knowledge particularly in the key areas of organismal diversity, ecology, evolution, and genetics. (Specialized Knowledge)
2. Utilize the scientific approach to address novel questions and problems through the development of hypotheses, design of experiments, collection of data, analysis of data, and interpretation of results. (Quantitative Fluency/Applied Learning)
3. Identify, examine, evaluate, and discuss the scientific literature. (Critical Thinking)
4. Articulate biological principles and ideas effectively, both in written and oral form. (Communication Fluency)

NAME: _____ **STUDENT ID #:** _____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ **( )** _____

I, (Signature)_____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

_____ _____ 20____
Signature of Advisor Date

_____ _____ 20____
Signature of Department Head Date

_____ _____ 20____
Signature of Registrar Date

DEGREE REQUIREMENTS:

- 120 semester hours total (Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher).
- 40 upper division credits (A minimum of 15 taken at the 300-400 course levels within the major at CMU).
- 2.00 cumulative GPA or higher in all CMU coursework
- A 2.5 GPA is required in the major courses. A "C" or higher is required in all major courses.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- Essential Learning Capstone should be completed between 45 and 75 hours.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.

ESSENTIAL LEARNING REQUIREMENTS (31 semester hours)
See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Course No	Title	Sem.hrs	Grade	Term/Trns
English (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)				
ENGL 111	English Composition	3		
ENGL 112	English Composition	3		
Math MATH 113 **or higher** (3 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)				
MATH 113	College Algebra	4*		
*3 credits apply to the Essential Learning requirements and 1 credit applies to elective credit.				
Humanities (3 semester hours)				
Social and Behavioral Sciences (6 semester hours)				
Natural Sciences (7 semester hours, one course must include a lab.) PHYS 112/112L* is typically required for admission to graduate schools. If chosen, 4 credits apply to the Essential Learning requirement and 1 credit applies to elective credit.				
___L				
History (3 semester hours)				
HIST				
Fine Arts (3 semester hours)				

Course No	Title	Sem.hrs	Grade	Term/Trns
WELLNESS REQUIREMENT (2 semester hours)				
KINE 100	Health and Wellness	1		
KINA 1___		1		
ESSENTIAL LEARNING CAPSTONE (4 semester hours)				
ESSL 290	Maverick Milestone (see English & math pre-reqs)	3		
ESSL 200	Essential Speech (co-requisite)	1		
FOUNDATION COURSES (17-19 semester hours) Must receive a grade of "C" or better and should be completed by the end of the sophomore year.				
BIOL 105	Attributes of Living Systems	3		
BIOL 105L	Attributes of Living Systems Lab	1		
CHEM 131*	General Chemistry I	4		
CHEM 131L*	General Chemistry I Lab	1		
CHEM 132*	General Chemistry	4		
CHEM 132L*	General Chemistry Lab	1		
STAT 200†	Probability and Statistics	3		
OR				
MATH 151†	Calculus I	5		

*A higher level subject may be taken in the same category with advisor approval. Organic Chemistry may be required for admission to some graduate programs.

†Statistics **and** Calculus may be required for admission to some graduate programs.

BIOLOGICAL SCIENCES MAJOR REQUIREMENTS
(51 semester hours) A 2.5 GPA is required in the major courses. A "C" or better is required in all major courses.

Required Core Courses (10 semester hours)				
BIOL 208	Fundamentals of Ecology and Evolution	3		
BIOL 208L	Fundamentals of Ecology and Evolution Lab	1		
BIOL 301	Principles of Genetics	3		
BIOL 301L	Principles of Genetics Lab	1		
BIOL 483	Senior Thesis	2		
Required Related Study Area (21 semester hours)				
PHYS 111	General Physics I	4		
PHYS 111L	General Physics I Lab	1		
BIOL 106	Principles of Animal Biology	3		
BIOL 106L	Principles of Animal Biology Lab	1		
BIOL 107	Principles of Plant Biology	3		
BIOL 107L	Principles of Plant Biology Lab	1		
BIOL 403	Evolution	3		
BIOL 405	Advanced Ecological Methods	3		
BIOL 405L	Advanced Ecological Methods Lab	2		

Course No	Title	Sem.hrs	Grade	Term/Trns

Additional Biology Courses (20 semester hours, chosen from the lists below) At least 16 of the credit hours must be 300 level or above.

Course No	Title	Sem.hrs	Grade	Term/Trns

Electives (13-15 credit hours) (All college level courses, **not listed above,** that will bring your total semester hours to 120 hours, including 40 upper division hours.) Up to 10 upper division hours may be needed. BIOL 499 Internship or research courses are recommended.

MATH 113 College Algebra	1*			
PHYS112/112L General Physics	1*			

Category 1: Cellular, Molecular, and Developmental
BIOL 302 Cellular Biology (3)
BIOL 310/310L Developmental Biology and Lab (3) / (2)
BIOL 343 Immunology (3)
BIOL 344/344L Forensic Molecular Biology and Lab (3) / (1)
BIOL 371L Lab Investigations in Cellular and Molecular Biology (3)
BIOL 425 Molecular Genetics (3)
BIOL 442 Pharmacology (3)
CHEM 315/315L Biochemistry I and Lab (3) / (1)
CHEM 316 Biochemistry II (3)

Category 2: Organismal
BIOL 250/250L Intro to Microbiology and Lab (3) / (2)
BIOL 316/316L Animal Behavior and Lab (3) / (1)
BIOL 322/322L Plant Identification and Lab (2) / (2)
BIOL 331/331L Insect Biology and Lab (3) / (2)
BIOL 333 Marine Biology (3)
BIOL 335/335L Invertebrate Zoology and Lab (3) / (1)
BIOL 336/336L Fish Biology (3) / (1)
BIOL 350/350L Microbiology and Lab (3) / (1)
BIOL 411/411L Mammalogy and Lab (3) / (1)
BIOL 412/412L Ornithology and Lab (3) / (1)
BIOL 413/413L Herpetology and Lab (3) / (1)
BIOL 431/431L Animal Parasitology and Lab (3) / (1)
BIOL 433 Marine Invertebrate Communities (3)
BIOL 450/450L Mycology and Lab (3) / (2)

Category 3: Anatomical and Physiological
BIOL 209/209L Human Anatomy & Physiology I and Lab (3) / (1)
BIOL 210/210L Human Anatomy & Physiology II and Lab (3) / (1)
BIOL 241 Pathophysiology (4)
BIOL 341/341L General Physiology and Lab (3) / (1)
BIOL 342/342L Histology and Lab (2) / (2)
BIOL 409/409L Gross and Developmental Human Anatomy (2) / (2)
BIOL 410/410L Human Osteology and Lab (3) / (1)
BIOL 421/421L Plant Physiology and Lab (3) / (1)
BIOL 423/423L Plant Anatomy and Lab (3) / (2)
BIOL 426/426L Intro to Electron Microscopy and Lab (2) / (2)
BIOL 441 Endocrinology (3)

Category 4: Ecology, Evolution, and Systematics
BIOL 211/211L Ecosystem Biology and Lab (4) / (1)
BIOL 315 Epidemiology (3)
BIOL 320 Plant Systematics (3)
BIOL 321/321L Taxonomy of Grasses and Lab (2) / (2)
BIOL 332/332L Introduction to GIS (2) / (1)
BIOL 406 Plant-Animal Interactions (3)
BIOL 407 Tropical Field Biology (5)
BIOL 408 Desert Ecology (3)
BIOL 414/414L Aquatic Biology and Lab (3) / (1)
BIOL 415 Tropical Ecosystems (2)
BIOL 418/418L Wildlife Management and Lab (3) / (2)
GEOL 305 Cartography for GIS (1)
GEOG 131 Introduction to Cartography (3)

NOTE: Topics courses (BIOL 196/296/396/496) as well as research courses (BIOL 387/487), internships (BIOL 499), teaching practicum (BIOL 493), and independent study (BIOL 495) may not be used as Additional Biology Courses but must be used for elective credit.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN BIOLOGICAL SCIENCES – ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY

This is a recommended sequence of course work. Certain courses may have prerequisites or are offered only during the Fall or Spring semesters. It is the student's responsibility to meet with the assigned advisor and check the 2 year course matrix on the Colorado Mesa website for course availability.

FRESHMAN YEAR

Fall Semester		Hours
BIOL 105	Attributes of Living Systems	3
BIOL 105L	Attributes of Living Systems Lab	1
CHEM 131	General Chemistry	4
CHEM 131L	General Chemistry Lab	1
MATH 113	College Algebra	4
KINE 100	Health and Wellness	1
		14

Spring Semester		Hours
BIOL 106	Principles of Animal Biology	3
BIOL 106L	Principles of Animal Biology Lab	1
CHEM 132	General Chemistry	4
CHEM 132L	General Chemistry Lab	1
STAT 200	Probability and Statistics (3) **or**	3-5
MATH 151	Calculus I (5)	
ENGL 111	English Composition	3
		15-17

SOPHOMORE YEAR

Fall Semester		Hours
BIOL 107	Principles of Plant Biology	3
BIOL 107L	Principles of Plant Biology Lab	1
PHYS 111	General Physics I	4
PHYS 111L	General Physics I Lab	1
ENGL 112	English Composition	3
ESSL	Social/Behavioral Science	3
		15

Spring Semester		Hours
BIOL 208	Fundamentals of Ecology and Evolution	3
BIOL 208L	Fundamentals of Ecology and Evolution Lab	1
BIOL 301	Principles of Genetics	3
BIOL 301L	Principles of Genetics Lab	1
ESSL	Natural Science with Lab	5
	(PHYS 112/112L recommended)	
KINA	Activity	1
		14

JUNIOR YEAR

Fall Semester		Hours
BIOL 403	Evolution	3
BIOL XXX (selected from list)		6
ESSL	History	3
ESSL 290	Maverick Milestone	3
ESSL 200	Essential Speech	1
		16

Spring Semester		Hours
BIOL 405	Ecological Methods	3
BIOL 405L	Ecological Methods Lab	2
ESSL	Humanities	3
ESSL	Social/Behavioral Science	3
Electives		4
		15

SENIOR YEAR

Fall Semester		Hours
BIOL XXX (selected from list)		7
Electives		3
ESSL	Natural Science	3
ESSL	Fine Arts	3
		16

Spring Semester		
BIOL 483	Senior Thesis	2
BIOL XXX (selected from list)		7
Electives		4-6
		13-15

POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.** You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December**.
3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
5. NOTE: During your senior year, you will be required to take a capstone exit assessment/project (e.g,, Major Field Achievement Test).

Department: Health Sciences

Program Additions

Surgical Technology

Degree Type: AAS

Program Name: Surgical Technology

Proposed by: Debra Bailey

Director of Teacher Education Signature: N/A

Expected Implementation: Fall 2016

2015-16 DEPARTMENT WORKSHEET FOR PROGRAM ADDITION
Colorado Mesa University Curriculum Committees

NOTE: All related course changes must be submitted on separate forms.

a. Identifying information

Department: **Health Sciences**
If new department, please enter name:

Program: Degree type: **AAS**
Program/concentration Name: **Surgical Technology**

Abbreviated program/concentration (max 30 characters): **Surgical Technology**

PROPOSED AND PREPARED BY:
Name: **Debra Bailey** Date: **8/25/2015**
Email: **dbailey@coloradomesa.edu** Phone: **970-248-1772**

Additional required information for each proposal for a program addition: (see Section IV.F of Curriculum Manual)

1. Complete items **b** through **m** on the following pages.

2. Complete the three CDHE tables at the end of this document. These tables MUST be included for all new program proposals. If any of the fields do not apply, please enter NA or other explanation.

3. Discuss the proposal with all departments affected by the program.
   Enter NA or dates/outcomes of such discussions
   Discussion with Denise Mckenney 9-11-2015;That sounds good! Those courses are already required by most of the Health Sciences majors and pre-majors, so it shouldn't be a problem, DeniseYes that is fine with me you PSYC 150 is used as an essential learning course for the surgical tech program, Jessica

4. Submit complete program sheet. The most up-to-date program sheet templates are available as Word documents at R:\Curriculum\Program Sheets for Curriculum Program Modifications.

5. Submit this completed form to the Library's Curriculum Committee representative and the Director of Financial Aid a week prior to the published proposal submission deadline.

6. Obtain departmental approval according to department-specific procedures.

Implementation Deadlines
Program additions and modifications approved at the September-February curriculum meetings are generally implemented the following academic year. See Section II.D of the Curriculum Manual. Exceptions are rare and granted only in extenuating circumstances. To request a different effective date, the academic department head should contact the curriculum committee chair. (Note: in the approval process only the VPAA will ultimately approve or deny the request.)

REVIEWED BY DEPARTMENT'S CURRICULUM COMMITTEE REPRESENTATIVE:
Name: **Diana Bailey** Date: **9/1/2015**

APPROVED BY DEPARTMENT HEAD:
Name: **Debra Bailey** Date: **9-2-2015**

APPROVED BY DIRECTOR OF TEACHER EDUCATION (REQUIRED FOR TEACHING PROGRAMS)
Name: N/A Date:

b. Demonstration of compliance with CMU requirements related to student learning outcomes (SLOs):

1) Identify program student learning outcomes (SLOs)
2) Identify linkage of program SLOs to institutional SLOs
3) Illustrate relationship of SLOs to proposed curriculum using curriculum map format
4) Identify planned assessments for the program SLO.

CMU Student Learning Outcomes:

Vision, Values and Mission:

Colorado Mesa University was founded, not as an end in itself, but to enable its students and the residents of Western Colorado to create their own future and not simply enter a future that's been created for them. Within its resource constraints, the university has an obligation to offer the highest quality academic programs and services to those whom it serves to enable them to prepare for their future. Because the environment in which it functions is in a constant state of change, the university, like its students, must recognize that growth and change are an integral part of our collective future. University stakeholders must embrace the notion that change and innovation within the institution should be the norm rather than a necessity in response to crises. In this context, then, our goals are built around the theme of "Achieving a Higher Degree." This theme reflects a key element of the university's strategic plan: the philosophy that as the institution adapts to its changing world, it does so with the overarching goal of supporting the residents of Western Colorado to achieve a higher degree of educational attainment by preparing students to function successfully in the future.

Colorado Mesa University values:

- high quality education in a student-centered environment;
- small class sizes and a high level of student/faculty interaction;
- a learning environment that develops and promotes the skills of inquiry, reflection, critical thinking, problem-solving, innovation, teamwork, and communication in students;
- student choice in academic programming that prepares future leaders to function as productive and responsible members of a global society;
- opportunities that engage students in applied learning;
- a faculty recognized for their professional expertise and quality of instruction;
- a staff committed to the highest quality of service to the College community;
- an attainable, accessible post-secondary experience for students in and outside of Western Colorado that emphasizes continuous improvement;
- a vibrant and varied campus setting that values diversity and diverse activities, and encourages involvement and interaction outside the classroom;
- a culture committed to integrity and academic and intellectual freedom;
- a community and region that supports the College in multiple ways;
- state-of-the-art facilities and technologies that enhance the learning environment; and

a diversity of students, faculty, staff that promotes a balanced exchange of ideas.

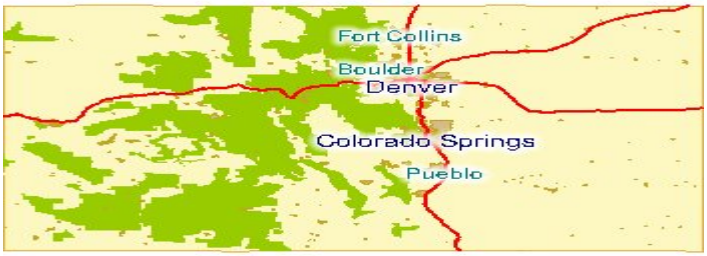
Colorado Mesa University Student Learning Outcomes	**Associate of Science degree graduate: Student Learning Outcomes**	**Surgical Technology Program.**
CMU Institutional statement: Committed to a personal approach, Colorado Mesa	• locate, gather and organize evidence on an assigned topic	1. Apply knowledge and skills from the biological sciences to safely perform during the pre- operative, intra-

University is a dynamic learning environment that offers abundant opportunities for students and the larger community to grow intellectually, professionally, and personally. By celebrating exceptional teaching, academic excellence, scholarly and creative activities, and by encouraging diversity, critical thinking, and social responsibility, CMU advances the common good of Colorado and beyond.	addressing a course or discipline-related question or a question of practice in a work or community setting (Specialized Knowledge/Applied Learning);	operative, and post-operative phases of patient care. (Specialized Knowledge/Applied Learning) 2. Demonstrate an understanding of the ethical, legal, moral, and medical values related to the patient and the surgical team. (Specialized Knowledge/Applied Learning) 3. Integrate knowledge gained in core surgical technology courses to prepare for the role of a surgical technologist, working with surgical interventions. (Specialized Knowledge/Applied Learning)
	Use program-level mathematical concepts and methods to understand, analyze, and explain issues in quantitative terms (Intellectual Skills: Quantitative Fluency);	4. Correlate the elements, action, and use of medications and anesthetic agents used during the peri-operative experience.
	Make and defend claims in a well-organized, professional document and/or oral presentation that is appropriate for a specific audience (Intellectual Skills: Communication Fluency);	5. Utilize appropriate medical terminology to communicate clearly, professionally and effectively with patients, physicians, and co-workers and provide for accurate documentation. (Communication Fluency) 6. Employ appropriate ethical, professional, and respectful values while providing care to diverse populations within the healthcare system. (Communication Fluency)
	Identify and gather the information/data relevant to the essential question, issue and/or problem and develop informed conclusions (Intellectual Skills: Critical Thinking).	7. Utilize learned competencies to assemble and operate instruments, equipment and supplies for the delivery of patient care as an entry-level practitioner during basic surgical procedures. (Intellectual Skills: Critical Thinking). 8. Demonstrate the ability to prioritize and organize the surgical field, while considering the physiology and urgency of patient care needs.(Intellectual Skills: Critical Thinking).

Program goals	Course Mapping	Assessment Outcomes
Surgical Technology Program.		
1. Apply knowledge and skills from the biological sciences to safely perform during the pre-operative, intra-operative, and post-operative phases of patient care. (Specialized Knowledge/Applied Learning)	BIOL 209; BIOL 209L; BIOL 210, BIOL 210L BIOL 241, SUTE 204	Tests Quizzes Projects
2. Demonstrate an understanding of the ethical, legal, moral, and medical values related to the patient and the surgical team. (Specialized Knowledge/Applied Learning)	SUTE 202	Tests Surgical Lab experience Clinical evaluation
3. Integrate knowledge gained in core surgical technology courses to prepare for the role of a surgical technologist, working with surgical interventions. (Specialized Knowledge/Applied Learning)	Surgical Technology Practicum SUTE 220; SUTE 230; SUTE 240	Surgical case reviews, Competency tests
4. Correlate the elements, action, and use of medications and anesthetic agents used during the peri-operative experience.	SUTE 206	Tests Quizzes
5. Utilize appropriate medical terminology to communicate clearly, professionally and effectively with patients, physicians, and co-workers and provide for accurate documentation. (Communication Fluency)	SUTE 200; SUTE 202: SUTE 206: SUTE 210; SUTE 212; SUTE 214; SUTE 220; SUTE 230; SUTE 240	Tests Surgical Lab experience Clinical evaluation Surgical case reviews, Competency tests
6. Employ appropriate ethical, professional, and respectful values while providing care to diverse populations within the healthcare system. (Communication Fluency)	SUTE 200; SUTE 202: SUTE 206: SUTE 210; SUTE 212; SUTE 214; SUTE 220; SUTE 230; SUTE 240	Tests Surgical Lab experience Clinical evaluation Surgical case reviews, Competency tests
7. Utilize learned competencies to assemble and operate instruments, equipment and supplies for the delivery of patient care as an	SUTE 220; SUTE 230; SUTE 240	Tests Surgical Lab experience Clinical evaluation

entry-level practitioner during basic surgical procedures. (Intellectual Skills: Critical Thinking). 8. Demonstrate the ability to prioritize and organize the surgical field, while considering the physiology and urgency of patient care needs. (Intellectual Skills: Critical Thinking).	SUTE 220; SUTE 230; SUTE 240	Surgical case reviews, Competency tests

c. Program goals as they pertain to Colorado Mesa University's goals and objectives and Colorado Mesa University's Role and Mission.



The CMU mission is to serve the 14 county regional area in higher education. There is not a surgical technology program within 250 miles of CMU. Based on community need and support, the program will align with the goals of CMU.

SURGICAL TECHNOLOGISTS: COLORADO

Work in surgical operations areas under the supervision of surgeons, registered nurses, or other surgical personnel. They may help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments.

d. Program strengths, special features, innovations, and/or unique elements.

The challenges of meeting the demands for expert operating room surgical technologists in western Colorado has challenged multiple surgical sites. The training in the past has been nine to twelve month technical training programs. The needs to work with surgeons in the sterile field has reached a point requiring a more robust from of instruction to meet the needs of the more acute surgical cases. An associate degree in Surgical Technology meets the increasing more challenging technological advance being seen and utilized in the surgical setting on a dally bases. The use of complex equipment such as lasers and robotics requires the education that can be obtained in the surgical technology program at CMU.

e. External agencies, such as program accreditations, professional associations, as well as licensing requirements that have helped shape the program's curriculum (i.e., effects such as length of the program, on program content or mode of delivery, etc.). Do faculty members anticipate seeking program accreditation at appropriate date?

Currently all Surgical Technologists are required to obtain licensure in the state of Colorado
The Association of Surgical Technologist (AST) does provide guidelines for developing core curriculums to assist in the development of programs such as the proposed Surgical Technology program at CMU.
It is anticipated that the faculty members involved in the program will seek accreditation when the program meets the criteria.

f. Program admissions requirements (if any beyond admission to institution).

1. Admission to Colorado Mesa University
2. Admission to Surgical Technology Program in Health Sciences
3. Recommendation letter from Director of Surgical Center or Hospital
4. Criminal Background Check, Immunizations, CPR card, student Malpractice documents required.
5. Interview with Program Director
6. Confirmation of Essential Skills:

The following are essential program Requirements for students enrolled at Colorado Mesa University Surgical Technology Program. The ability to meet all of these requirements, with or without accommodation, is necessary to be able to demonstrate clinical competency and to meet program outcomes required for graduation.

For information regarding disabilities accommodations, please contact the EAS office at CMU.

Initial beside each statement you understand and able to comply with the statement:

____1. Intact gross and fine motor skills; precise hand/eye coordination and dexterity and the ability to discriminate tactile sensations.

____2. Clear speech.

____3. Congruent verbal/nonverbal behavior; emotional stability; cooperative; no signs of impaired judgment.

____4. Able to walk, bend, stoop, kneel, stand, twist, sit, carry, lift, reach hands overhead.

____5. Able to evacuate a 4-story building in less than 3 minutes.

____6. Able to sit and stand long periods of time (4-7 hours in class; 8-12 hours in clinical).

____7.Able to pull 75 lbs; lift 35 lbs; push 100 lbs.

____8. Able to travel independently to clinical sites as assigned.

____9. Intact short and long-term memory.

____10. Visual color discrimination and depth perception; near and far vision 20/20 (may be corrected with lenses).

____11. Able to hear and discriminate alarms (may be corrected with hearing aid).

____12. Able to detect odors sufficient to maintain environmental safety, including smoke and noxious odors.

____13. Frequent exposure to electricity, electromagnetic fields, electronic media and latex; chemical hazards including but not limited to disinfecting solutions, dyes, acetone, bleach, and alcohol.

____14. Possible exposure to toxic drugs; anesthetic gases; ionizing radiation; infectious agents (blood, urine, mucus, saliva, etc.)

15. MEDICATION MANAGEMENT: The use of medication/substances that may cause drowsiness or otherwise impair mental or physical functioning, whether prescribed, over-the-counter, or illegal, is prohibited during class, lab and clinical experiences because of the potential safety hazards to self, co-workers, and patients.

g. Rationale and justification for the program demonstrating the demand, as evidenced by:

(1) Employer need/demand as demonstrated by evidence such as:

(a) identification of several potential employers of program graduates;
(b) projected regional and/or statewide need for graduates from current labor market analyses and/or future workforce projections/studies (potential source: www.occsupplydemand.org/)
(c) surveys made by external agencies;
(d) letters of direct employer support may be used. Include letters indicating the availability of positions for graduates of the proposed programs, signed by individual in a senior position of authority.Page 27 of 41
(2) Student demand as demonstrated by evidence such as surveys of potential students to answer the question: "what is the student population served by program implementation?"

In 2014, St. Mary's Hospital asked for a partnership with CMU Health Sciences to start a Surgical Technology Program. The need for surgical Technologists in western Colorado has steadily increased in the last several years. Currently there are ten surgical sites that have formed a working group, with St. Mary's Hospital taking the lead, to start a Surgical Technologist program through CMU. Currently the need is filled with traveling surgical technologists, leading to high turnover rates. St. Mary's Hospital has two surgical suites that are not in use after the renovation of new surgical areas. The partnership allows an expensive health care program to be started, with resources available through partnering hospitals. Surgical supplies and equipment are readily available through the 10 partnering clinical sites. The closest surgical Technologist programs are in Denver and Salt Lake City.

Below are the trends for expected job openings in Colorado for the next 7 years to be at 36 % growth. High paying salaries for these jobs exceeds the average salary in Colorado for a person with an associate degree.

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2012	2022		
Surgical Technologists	98,500	127,800	+30%	3,910
Colorado	**Employment**		**Percent Change**	**Projected Annual Job Openings [1]**
	2012	**2022**		
Surgical Technologists	1,700	2,310	+36%	80

[1]Projected Annual Job Openings refers to the average annual

Location	Pay Period	2014				
		10%	25%	Median	75%	90%
United States	Hourly	$14.80	$17.11	$20.84	$25.43	$29.89
	Yearly	$30,800	$35,600	$43,300	$52,900	$62,200
Colorado	Hourly	$16.46	$19.63	$24.17	$28.50	$33.09
	Yearly	$34,200	$40,800	$50,300	$59,300	$68,800

http://www.bls.gov/ooh/healthcare/surgical-technologists.htm & Colorado

The Current representatives meeting are from the surgical areas of St. Mary's Hospital, Grand Valley Surgical Center, Community Hospital, Delta Memorial Hospital, Montrose Hospital, Telluride Medical Center, Craig Hospital, Meeker, Hospital, Rangely Hospital, Valley View Hospital, Aspen Valley Hospital, Durango and San Juan Hospital.

h. Relationship of the proposed program to existing programs on campus and to similar programs within the state, with a rationale reflecting that proposed program demand cannot be met by another program (i.e., program implementation is not an unnecessary duplication)

.

The Surgical Technology programs in the State of Colorado are in the Denver Metro and eastern Colorado. Beyond the geographical issues of accessing these programs, it is known in the research literature that students tend to stay where they are trained especially in rural areas. Unsuccessful recruitment from the programs over the last several years has led to the dearth of available well trained and experienced Surgical Technologists in the western Colorado Region.

i. Curriculum, including identification of new courses and the numbers, names, and sequencing of all courses, as well as demonstration of compliance with CMU's Credit Hour Policy as required by the U.S. Department of Education and articulated by the Higher Learning Commission;

Program Sheet attached.
Course Additions attached
Core Curriculum from Accreditation agency

CORE CURRICULUM FOR SURGICAL TECHNOLOGY:

I. Healthcare sciences
   - A. Anatomy and physiology
   - B. Pharmacology and anesthesia
   - C. Medical terminology
   - D. Microbiology
   - E. Pathophysiology

II. Technological sciences
   - A. Electricity
   - B. Information technology
   - C. Robotics

III. Patient care concepts
   - A. Biopsychosocial needs of the patient
   - B. Death and dying

IV. Surgical technology
   - A. Preoperative
     - 1. Non-sterile
       - a. Attire
       - b. Preoperative physical preparation of the patient
       - c. Patient identification
       - d. Transportation
       - e. Review of the chart
       - f. Surgical consent
       - g. Transfer
       - h. Positioning
       - i. Urinary catheterization
       - j. Skin preparation
       - k. Equipment
       - l. Instrumentation
     - 2. Sterile
       - a. Asepsis and sterile technique
       - b. Hand hygiene and surgical scrub

c. Gowning and gloving
d. Surgical counts
e. Draping

B. Intra-operative: Sterile
1. Specimen care
2. Abdominal incisions
3. Hemostasis
4. Exposure
5. Catheters and drains
6. Wound closure
7. Surgical Dressings
8. Wound healing
9. Tissue replacement materials
10. Emergency patient situations

C. Postanesthesia care unit
1. Methods of disinfection and sterilization
2. Sterile storage & distribution
3. Environmental disinfection of the OR

D. Perioperative case management

E. Assistant circulator role

F. Surgical procedures
1. Surgical specialties
a. General
b. Obstetric and gynecology
c. Genitourinary
d. Otorhinolaryngology
e. Orthopedic
f. Oral and maxillofacial
g. Plastic and reconstructive
h. Ophthalmic
i. Cardiothoracic
j. Peripheral vascular
k. Neurosurgery

G. Surgical rotation
1. Surgical rotation case requirements
2. First and second scrub role and observation

V. Professional Practice

A. Professionalism
1. Professional management
2. Employability skills
3. Communication skills and teamwork
4. Ethical and moral issues
5. Legal issues, documentation and risk management

B. Health care facility information
1. Health care facility organization and management
2. Physical environment
3. All-hazards preparation

j. List of faculty and their qualifications. (Is there a need for additional faculty?)

The program will initially require the addition of one faculty member. The individual can perform the duties of both the program Director and faculty for the initial first cohort. The second cohort will need a second faculty as the program director will be required to meet specific roles of the Program Director and apply and prepare for the accreditation of the new program.

k. Description of learning resources needed for implementation. Scope and quality of library holdings, laboratories, clinical facilities, and technological support as applicable. Department's recommendations for additions to the Library's collection.

Library resources will need to be added, however with this type of program most resources will come from the clinical sites. Students will purchase online clinical resources as study aids for specific classes.

Surgical Technology/Principles and Practice. 6th Edition/ Joanna Kotcher Fuller; Prepared by: Julie Armistead, CST, CRCST, BA Surgical Technology Program Director; Virginia College; Macon, Georgia

l. Intended delivery mode for program. For programs delivering any of its coursework via 1) alternative formats, 2) outsourcing, and/or 3) a consortial relationship, the program proposal must demonstrate compliance with requirements as specified by the U.S. Department of Education and articulated in the Higher Learning Commission's policies. To demonstrate this compliance, the proposing department must submit a statement from the VPAA's office.

The program will be delivered by classroom time and clinical time consistent with the Curriculum Policy Handbook. Please see time commitments for each course addition. Clinical placements wil be at surgical site affiliations in western Colorado.

The program will initially require the addition of one faculty member. The individual can perform the duties of both the program Director and faculty for the initial first cohort. The second cohort will need a second faculty as the program director will be required to meet specific roles of the Program Director and apply and prepare for the accreditation of the new program.

m. For Professional, Technical or Other Programs, the justification must include:

(1) Rationale for program to be in the PTO category.
(2) Statement as to how the curriculum aligns to the requirements or recommendations of the nationally recognized accrediting, licensing, certifying or professional organization.
(3) Rationale for the program to exceed 60 credit hours, if applicable.
(4) Rationale for prescribing Applied Studies courses, if applicable.
(5) Explanation as to how a transfer student with an AA degree in the discipline of that program can graduate by completing only an additional 60 hours.

Most Health Sciences programs are in the PTO category due to the length of the programs and the need for accreditation. The Surgical Technology Program will work towards accreditation in the second year of its operation. The Program follows the Association of Surgical Technologists (AST) curriculum.

TABLE 1: ENROLLMENT PROJECTIONS

Name of Program: Surgical Technology Program

Degree Title AAS in Surgical Technology

Name of Institution: Colorado Mesa University AAS degree

DEFINITIONS:

Academic year is the period beginning July 1 and concluding June 30.

Headcount projections represent an unduplicated count of those students officially admitted to the program and enrolled at the institution during the academic year.

FTE is defined as the full-time equivalent number of those students majoring in the program, regardless of the classes enrolled, during the academic year.

Program graduate is defined as a student who finishes all academic program requirements and graduates with a formal award within a particular academic year.

SPECIAL NOTES:

To calculate the annual headcount enrollment, add new enrollees to the previous year headcount and subtract the number who graduated in the preceding year. Adjust by the anticipated attrition rate.

To calculate FTE, multiply the number of students times the projected number of credit hours degree seeking students will be typically enrolled in per year and divide by 30.

The data in each column is the annual **unduplicated** number of declared program majors. Since this table documents program demand, course enrollments are not relevant and shall not be included in the headcount or FTE data.

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Full Implementation
1-a	In-state Headcount	8	8	8	8	8	8
1-b	Out-of-State Headcount	2	2	2	2	2	2
2	Program Headcount	10	10	10	10	10	10
3-a	In-state FTE	10.13	10.13	10.13	10.13	10.13	10.13
3-b	Out-of-State FTE	2.53	2.53	2.53	2.53	2.53	2.53
4	Program FTE	12.67	12.67	12.67	12.67	12.67	12.67
5	Program Graduates	7	9	9	9	9	9

_____ _____

Signature of Governing Board Officer Date

TABLE 2: PHYSICAL CAPACITY ESTIMATES

Name of Program: Surgical Technology Program AAS

Name of Institution: _Colorado Mesa University Health Sciences Surgical Technology Program

Purpose: This table documents the physical capacity of the institution to offer the program and/or the plan for achieving the capacity. Complete A or B.

Part A

I certify that this proposed degree program can be fully implemented and accommodate the enrollment projections provided in this proposal without requiring additional space or renovating existing space during the first five years.

_____ _____

Governing Board Capital Construction Officer Date

Part B

	Column 1	Column 2	Column 3		Column 4		Column 5	Column 6
ASSIGNABLE SQUARE FEET	TOTAL NEEDED	AVAILABLE	RENOVATION		NEW CONSTRUCTION		LEASE/ RENT	REVENUE SOURCE*
TYPE OF SPACE			Immed	Future	Immed	Future		
Classroom	1	1	1	1	1	1	St. Mary's Hospital 2 surgical suites in kind space	Tuition
Instructional Lab	1 if at future time St. Mary's Surgical suites is designated for re-use	2 Surgical Suites available at St. Mary's Hospital		At DHS new building in Community Hospital if St. Mary's becomes unavailable	None anticipated			
Offices	2	2	DHS is planning renovation in 2016	2016	2016 new DHS Center north of Orchard Ave.	2017-2018 future space in Community Hospital to become a		

						permanent lab.		
Study	None	None		Planned study area for Health Science Students				
Special/ General Use								
Other								
TOTAL								

* Capital Construction Fund (CCF), Research Building Revolving Fund (RBRF), Gift (GIFT), Grant (GR), Auxiliary Fund (AUX)

Attach a narrative describing the institutional contingency plan that addresses the space requirements of the proposed program or alternative delivery options, in the event that the request for capital construction or renovation is not approved.

_____ _____

Governing Board Capital Construction Officer Date

Approved Policy I-B-10 June 5, 2003

TABLE 3 – PROJECTED EXPENSE AND REVENUE ESTIMATES

All cost and revenue projections should be in constant dollars (do not include an inflation factor).

		ESTIMATED AMOUNT IN DOLLARS (PV)				
		Year 1	Year 2	Year 3	Year 4	Year 5
Operating Expenses:						
1	Faculty	50, 000	53,000	56,000	60,000	60,000
2	Financial Aid specific to program	0	0	0	0	0
3	Instructional Materials	2000.00	0	0	0	0
4	Program Administration	Current DHS will cover	Current DHS will cover	Current DHS will cover	Current DHS will cover	Current DHS will cover
5	Rent/Lease	In kind from St. Mary's	Renovation of Community Hospital surgical suite	0	0	0
6	Other Operating Costs	Faculty	Faculty	0	0	0
7	Total Operating Expenses	52,000	53,000	56,000	60,000	60,000
Program Start-Up Expenses						
8	Capital Construction	0	0	0	0	0
9	Equipment Acquisitions	5000.00 Donated By western Health Alliance	0	0	0	0
10	Library Acquisitions	2000.00	0	0	0	0
11	Total Program Start-Up Exp.	Unknown depending on equipment from St. Mary's	Depending on student enrollment and need for expansion	0	0	0
TOTAL PROGRAM EXPENSES		To be determined	To be determined	56,000	60,000	60,000
Enrollment Revenue						
12	General Fund: State Support	0	0	0	0	0
13	Cash Revenue: Tuition	68 credit hours (8 in state, 2 out of state)	68 credit hours (8 in state, 2 out of state)	68 credit hours (8 in state, 2 out of state)	68 credit hours (8 in state, 2 out of state)	68 credit hours (8 in state, 2 out of state)
14	Cash Revenue: Fees	40.00 per course x 11 courses per student	40.00 per course x 11 courses per student	40.00 per course x 11 courses per student	40.00 per course x 11 courses per student	40.00 per course x 11 courses per student
Other Revenue						
15	Federal Grants	0	0	0	0	0
16	Corporate Grants/Donations	10,000	0	0	0	0
17	Other fund sources *	In kind for clinical practicum sites for	In kind for clinical practicum sites for	0	0	0

		training	training			
18	Institutional Reallocation **	0	0	0	0	0
TOTAL PROGRAM REVENUE		144,599.40	134,599.40	134,599.40	134,599.40	134,599.40

** If revenues are projected in this line, please attach an explanation of the specific source of the funds. If reallocated, the specific departments and the impact the dollars will have on the departments that will provide the reallocated dollars.

_____ _____ _____

Signature of Governing Board Financial Officer Title Date

Approved Policy I-B-12 June 5, 2003

2016-2017 PETITION/PROGRAM SHEET
Degree: Associate of Applied Science
Major: Surgical Technology

About This Degree . . .
The Associates of Applied Science Surgical Technology Program is designed to cover both the academic and clinical skills necessary to perform as a surgical technologist. The program begins fall semester of each year. Certain prerequisite courses must be completed prior to admission to the professional portion, the 2nd year, of this program. Students will complete this Associate Degree program in sequence with prerequisites and Essential Learning courses the first year. The application process will occur in the second semester or their first year. Once accepted to the program, the second year will prepare students to work as operating room technologists and assist in surgical operations.

Surgical technologists work as members of a healthcare team alongside surgeons, registered nurses, and other health care workers. They prepare operating rooms, arrange equipment, and help doctors during surgeries. Students will be prepared to work in many areas of the surgery setting including preparing patients for surgery by washing and disinfecting incision sites, positioning patients on the operating table, covering patients with sterile drapes, and taking patients to and from the operating room. Surgical technologists prepare sterile solutions and medications used in surgery and check that all surgical equipment is working properly. They help the surgical team put on sterile gowns and gloves. During an operation, surgical technologists pass instruments and supplies to surgeons and first assistants. They also hold retractors and may hold internal organs in place during the procedure. Technologists also may handle specimens taken for laboratory analysis. Surgical technologists who take and pass the certifying examination offered by the NBSTSA (National Board for Surgical Technology and Surgical Assisting) are certified and authorized to use the initials CST to designate their status as a Certified Surgical Technologist. Certification can be a means of upward mobility, a condition of employment, a route to higher salary, or a source of national recognition.

For more information on what you can do with this major, go to http://www.coloradomesa.edu/career/whatmajor.html

All CMU associate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student-learning outcomes, graduates of this major will be able to:

1. Apply knowledge and skills from the biological sciences to safely perform during the pre- operative, intra-operative, and post-operative phases of patient care. (Specialized Knowledge/Applied Learning)
2. Demonstrate an understanding of the ethical, legal, moral, and medical values related to the patient and the surgical team. (Specialized Knowledge/Applied Learning)
3. Integrate knowledge gained in core surgical technology courses to prepare for the role of a surgical technologist, working with surgical interventions. Specialized Knowledge/Applied Learning)
4. Correlate the elements, action, and use of medications and anesthetic agents used during the peri-operative experience. (Intellectual Skills Quantitative fluency)
5. Utilize appropriate medical terminology to communicate clearly, professionally, and effectively with patients, physicians, and co-workers and provide for accurate documentation. (Communication Fluency)
6. Employ appropriate ethical, professional, and respectful values while providing care to diverse populations within the healthcare system. (Communication Fluency)
7. Utilize learned competencies to assemble and operate instruments, equipment, and supplies for the delivery of patient care as an entry-level practitioner during basic surgical procedures. (Intellectual Skills: Critical Thinking).
8. Demonstrate the ability to prioritize and organize the surgical field, while considering the physiology and urgency of patient care needs. (Intellectual Skills: Critical Thinking).

NAME: _____ **STUDENT ID #:** _____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ **( )** _____

I, (Signature)_____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

_____ _____ 20____
Signature of Advisor Date

_____ _____ 20____
Signature of Department Head Date

_____ _____ 20____
Signature of Registrar Date

DEGREE REQUIREMENTS:

- 68 semester hours total (A minimum of 15 of the final 30 semester hours of credit at CMU).
- 2.00 cumulative GPA or higher in all CMU coursework and in coursework toward major content.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.

ESSENTIAL LEARNING REQUIREMENTS

(Minimum 15 semester hours) See the current catalog for a list of courses that fulfill the requirements below. If a course is on the Essential Learning list of options and a requirement for your major, you must use it to fulfill the major requirement and make a different selection within the Essential Learning requirement. The Essential Learning capstone course and co-requisite Essential Speech course (required for bachelor's degrees) cannot be used as options for the below requirements.

Course No	Title	Sem.hrs	Grade	Term/Trns
Communication (6 semester hours)				
ENGL 111	English Composition	3	_____	_____
*ENGL 112	English Composition	3	_____	_____
Math (3 semester hours)				
*MATH 113	College Algebra or higher+	3	_____	_____

Course No	Title	Sem.hrs	Grade	Term/Trns
Social Sciences, Natural Science, Fine Arts, or Humanities (6 semester hours)				
*PSYC 150	General Psychology	3	_____	_____
____ ____	_____	3	_____	_____
WELLNESS REQUIREMENT (2 semester hours)				
KINE 100	Health and Wellness	1	_____	_____
KINA 1____	_____	1	_____	_____
FOUNDATION PREREQUISITE COURSES (12 semester hours)				
*BIOL 209	Human Anat & Physiology	3	_____	_____
*BIOL 209L	Human Anat & Physiology Lab	1	_____	_____
*BIOL 210	Human Anat & Physiology	3	_____	_____
*BIOL 210L	Human Anat & Physiology Lab	1	_____	_____
*BIOL 241	Pathophysiology	4	_____	_____

ASSOCIATE OF APPLIED SCIENCE:
SURGICAL TECHNOLOGY COURSE REQUIREMENTS

(39 semester hours) These courses must be completed in sequence and may only be taken after acceptance into the Program.

Core Courses (38 semester hours)				
SUTE 200	Medical Term in Surg Tech	3	_____	_____
SUTE 202	Fundamentals in Surg Tech	4	_____	_____
SUTE 204	Basic Surg Tech Skills Lab	4	_____	_____
SUTE 206	Pharmacology for Surg Tech	2	_____	_____
SUTE 210	Safety in Surgical Technology	3	_____	_____
SUTE 212	Surgical Procedures I	3	_____	_____
SUTE 214	Surgical Procedures II	3	_____	_____
SUTE 218	Specialty Surgical Procedures	4	_____	_____
SUTE 220	Surgical Practicum I	4	_____	_____
SUTE 230	Surgical Practicum II	4	_____	_____
SUTE 240	Surgical Practicum III	4	_____	_____
Elective Credit (1 semester hour)				
MATH 113	College Algebra+	1	_____	_____

*Required by this program
+MATH 113 is a 4 credit course. 3 credits count towards the Essential Learning requirement and 1 credit counts as Elective credit.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN SURGICAL TECHNOLOGY

This is a recommended sequence of course work. Certain courses may only be offered during the Fall or Spring semesters. It is the student's responsibility to meet with the assigned advisor and check the two year course matrix on the Colorado Mesa website for course availability.

FIRST YEAR

Fall Semester		Hours
ENGL 111	English Composition	3
MATH 113	College Algebra	4
BIOL 209	Human Anat & Physiology	3
BIOL 209L	Human Anat & Physiology Lab	1
KINE 100	Health and Wellness	1
Essential Learning (Natural Sci, Fine Arts, or Humanities)		3
		15

Spring Semester		Hours
ENGL 112	English Composition	3
BIOL 210	Human Anat & Physiology	3
BIOL 210L	Human Anat & Physiology Lab	1
BIOL 241	Pathophysiology	4
PSYC 150	General Psychology	3
KINA ___	Activity	1
		15

SECOND YEAR

Fall Semester		Hours
SUTE 200	Medical Terminology in Surgical Technology	3
SUTE 202	Fundamentals in Surgical Technology	4
SUTE 204	Basis Surgical Technology Skills Lab	4
SUTE 206	Pharmacology for Surgical Technology	2
		13

Spring Semester		Hours
SUTE 210	Safety in Surgical Technology	3
SUTE 212	Surgical Procedures I	3
SUTE 214	Surgical Procedures II	3
SUTE 218	Specialty Surgical Procedures	4
		13

Summer Semester (summer following 2nd Year)		Hours
SUTE 220	Surgical Practicum I	4
SUTE 230	Surgical Practicum II	4
SUTE 240	Surgical Practicum III	4
		12

POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation-planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.** You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December**.
3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
5. NOTE: The semester before graduation, you may be required to take a Major Field Achievement Test (exit exam).

Course Additions

SUTE 200 Credit Hours 3

Course Title: Medical Terminology in Surgical Technology

Abbreviated Title: Medical Term Surg Tech

Contact hours per week: Lecture 3 Lab Field Studio Other

Type of Instructional Activity: Lecture

Academic engagement minutes: 2250 Student preparation minutes: 4500

Intended semesters for offering this course: Fall ☑ J-Term ☐ Spring ☐ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

Admission to the Surgical Technology Program; Completion of Surgical Technology Foundation courses
BIOL 209/209L; BIOL 210/210L; BIOL 241; PSYC 150

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 202, SUTE 204, SUTE 206

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE for teaching Surgical Technology that is accredited and certified in the field.

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with a 5000.00 grant from the Western Colorado Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Exploration of word roots, prefixes, and suffixes used in medical language today. Students will learn to combine words to create appropriate medical conditions. Students will learn medical terms, spelling, and definitions related to major body systems, surgical procedures, and conditions associated with the operating room.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

Outline:
Introduction to Medical Terminology
The Human Body in Health and Disease
The Skeletal System
The Muscular system
The Cardiovascular System
The Lymphatic and Immune System
The Respiratory System
The Endocrine System
The Genito urinary System

Reproductive Organs
The Nervous System
Surgical Instrument Terminology
Surgical Environment Terminology
OSHA Terminology
CDC Terminology
Sterilization Terminology

Student Learning Outcomes:

Define Terms used in medical physiology and pathophysiology
Identify instruments used in surgical operations
Define terms used in surgical procedures
Describe infectious agents, hazardous agents
Define protective equipment used in the operating arena

Discussions with affected departments:

See Surgical Technology program addition form.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 202 Credit Hours 4

Course Title: Fundamentals in Surgical Technology

Abbreviated Title: Fundamentals Surg Tech

Contact hours per week: Lecture 4 Lab Field Studio Other

Type of Instructional Activity: Lecture

Academic engagement minutes: 3000 Student preparation minutes: 6000

Intended semesters for offering this course: Fall ☑ J-Term ☐ Spring ☐ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

Admission to the Surgical Technology Program; Completion of Surgical Technology Foundation courses
BIOL 209/209L; BIOL 210/210L; BIOL 241; PSYC 150

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 200, SUTE 204, SUTE 206

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE for teaching Surgical Technology that is accredited and certified in the field.

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with a 5000.00 grant from the Western Colorado Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Approaches to surgical technology. Students will learn tasks and responsibilities of the surgical technologist including the practice of sterile technique, surgical scrub, gown and glove, patient positioning, draping, and surgical prep on patients. Students will learn the practice of standard precautions in surgery. Skills will be practiced in a clinical setting.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

1. Tasks of the Surgical Technologist:
   a. Team work
   b. Communication
   c. Environment
   d. Personal Protection
   e. Sterilization, aseptic technique, disinfection
   d. Surgical Scrub, gown, glove don for self and team members.
2. Vulnerable patient populations
3. Psychosocial needs.
4. Learn the concept of surgical conscience.

5. Patient
   a. Consent
   b. Physical, physiological, psychological, social, spiritual and cultural needs
   c. Special populations
   d. Transfer
   e. Positioning
   f. Skin preparation for surgery
   g. Draping
6. Environment:
   a. Pre-operative
   b. Peri-operative
   c. Instruments

7. Equipment:
   a. Surgical supplies
   b. needle and suture types
   c. Set up for a variety of surgical cases
   d. Safety with equipment, sharps, body fluids, prevention of injury to patient and team
   e. Sterile equipment
8. Anesthesia
9. Sterile Field
10 Labeling medications
11. Electrocautery
   a. Prevention of burns
12. Hemeostatsis in surgery

Student Learning Outcomes:

1. Explain the role and responsibilities of the surgical technologist
2. Demonstrate surgical scrub, gown and glove, patient positioning, draping and surgical prep of patients.
3. Differentiate the specific needs of surgical patients by recognizing physical, biological, psychological, spiritual, and cultural requirements.
4. Correlate the impact of microbiology in relationship to the practice of sterile technique and infection control in the operative setting.
5. Compare and contrast the structure and characteristics of different microorganisms
6. Differentiate various immune responses that occur in the body as defenses against invasion by pathogens
7. Demonstrate differences in disinfection, sterilization, and aseptic technique
8. Demonstrate patient safety in obtaining consent, preoperative procedures, transfers of patients, and patient positioning during and after surgical procedures.
9. Locate and evaluate patient information using technology.
10. Demonstrate surgical equipment set up, instrumentation uses, and disposal of hazardous materials and equipment.
12. Demonstrate the procedure for counting instruments, sponges, sharps, and other items in the field.
13. Describe legal responsibilities of a surgical technologist.

Discussions with affected departments:

See Surgical Technology program addition form.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 204 Credit Hours 4

Course Title: Basic Surgical Technology Skills Lab

Abbreviated Title: Basic Surgical Lab

Contact hours per week: Lecture Lab 4 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 6000 Student preparation minutes: 3000

Intended semesters for offering this course: Fall ☑ J-Term ☐ Spring ☐ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

Admission to the Surgical Technology Program; Completion of Surgical Technology Foundation courses
BIOL 209/209L; BIOL 210/210L; BIOL 241; PSYC 150

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 200, SUTE 202, SUTE 206

Requirement or listed choice for any program of study: Yes ☑ No ☐
Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE for teaching Surgical Technology that is accredited and certified in the field .

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Clinical approaches to surgical technology. Students will demonstrate the use of electrocautery and laser equipment, as well as endoscopic instruments. They will describe commonly used lab and x-ray tests, as well as instrumentation used for abdominal and laparoscopic procedures. Students will demonstrate basic set up for urology, and ear, nose, throat and eye procedures.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

1. Electricity and Electrocautery
   A. Patient responses
   B. Safety Precautions
2. Endoscopy procedures, equipment and sterilization
3. Laboratory basic tests, indications and values
4. Radiological basic tests, indications and values
5. Characteristics of tissue
6. Abdominal Surgeries
7. Laproscopic Surgeries
8. Gynocological sureries
   Hysteroscopic procedures
9. Primary Procedures of

A. Ears
B. Nose
C. Mouth
D.Throat
10. Asepsis, clean, disinfection procedures
11. Tracheostomy

Student Learning Outcomes:

1. Describe Electricity flow in a patient receiving Elecrocautery procedures
2. Identify Instuments used in Ears, Nose Throat, Mouth, Endoscopic, Laproscopic, Abdominal and gynocological surgeries.
3. Explain primary procedures in Ears, Nose Throat, Mouth, Endoscopic, Laproscopic, Abdominal and gynocological surgeries.
4. List compiications of basic surgical procedures
5. Demonstrate breakdown and cleaning of insturments used in basic surgical procedures.
6. Describe disinfection and sterilization of surgical insturments
7. Describe basic laboratory and radiological tests used in basic surgeries.
8. Demonstrate Sterile technique and barriers
9. Describe protocal for contamination of surgical site, instuments, and handling of the contamination materials.

Discussions with affected departments:

See Surgical Technology program addition form.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 206 Credit Hours 2

Course Title: Pharmacology for Surgical Technology

Abbreviated Title: Pharm for Surg Tech

Contact hours per week: Lecture 2 Lab Field Studio Other

Type of Instructional Activity: Lecture

Academic engagement minutes: 1500 Student preparation minutes: 3000

Intended semesters for offering this course: Fall ☑ J-Term ☐ Spring ☐ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

Admission to the Surgical Technology Program; Completion of Surgical Technology Foundation courses
BIOL 209/209L; BIOL 210/210L; BIOL 241; PSYC 150

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 200, SUTE 202, SUTE 204

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☑ No ☐

There are four pharmacology classes on campus. One for biology students that is physiological based. Three for nursing that are specific for nursing and all presented at different levels with requirements from the State Board of Nursing for each program.

Additional faculty FTE required: Yes ☑ No ☐

One FTE will be needed. Part time budget will be used to start the program; Partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Exploration of safe use of prescription and nonprescription drugs. Emphasis will be placed on the impact of safe drug use in promoting and maintaining health. The course will examine how drugs affect the body by changing many of its normal mechanisms and thereby contributing to potential health problems during surgery.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

Pharmacokinetics

a. absorption
b.metabolism
c.distribution
d. elimination

Routes of Medicines

Administration

Terminology in Pharmacology:

Actions
Indications
Abbreviations
Measurements
Federal, State-regulating roles
Drug Testing
Dosage Calculation
Pre Operative medications
Blood Administration
Fluid administration
Types of Anesthesia
Administration techniques for anesthetic agents
General Anesthesia
Monitoring during anesthesia
Emergency situations and anesthesia
Response of the surgical team in Emergency situations
Antibiotic use in peri-operative surgery
Pain Management
Contrast Media, dyes staining agents
Purpose of antibiotic use during the peri-operative period.
Drugs effecting coagulation
Ophthalmic medications in surgical patients
Diuretics, chemotherapeutics and hormones in surgical patients.

Student Learning Outcomes:

1. Demonstrate care and handling of medications and solutions.
2. Compare and contrast methods, agents, and techniques of anesthesia administration and preparation.
3. Identify preoperative medications used in the care of the surgical patient.
4. Identify potential harmful preoperative medications for surgical patients.
4. Identify basic drug classifications.
5. Identify concepts of drug administration, assessment used to determine anesthesia choice, pharmacology math and medication measurements.
6. Identify drug categories, general and local anesthesia and alternative anesthesia methods.
7. Discuss pre-operative, intra-operative and post-operative anesthesia agents. Discuss the assessments used to determine anesthesia choice for surgical intervention.

Discussions with affected departments:

See Surgical Technology program addition form.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 210 Credit Hours 3

Course Title: Safety in Surgical Technology

Abbreviated Title: Safety in Surg Tech

Contact hours per week: Lecture 3 Lab Field Studio Other

Type of Instructional Activity: Lecture

Academic engagement minutes: 2250 Student preparation minutes: 4500

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☑ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 200, SUTE 202, SUTE 204, SUTE 206

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 212, SUTE 214, SUTE 218

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE for teaching Surgical Technology that is accredited and certified in the field .

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Exploration of information to prepare, plan, detect and communicate safety and security in the surgical arena. Students will learn tasks and responsibilities of incident-management, all- hazard preparation, and components for personal, community, and institutional disaster planning. They will learn OSHA, CDC, and environmental safety and protection for their practice.

Justification:

Justification is in the program proposal. The courses follow the curriculum guidelines of the Association of Surgical Technology. Need for Surgical Technologists in ten regional hospitals are requesting this program.

Topical course outline:

I. Hazards
A. Bioterrorism
B. Chemical
C. Natural
D. Radiation
II. Personal disaster plan
A. Family
B. Community
C. Triage
1. Contacts
2. Go bags

3. Designated meeting places
4. Protocol from local emergency organizations
III. Environmental Safety
A. Radiation precautions
B. Surgical plume
C. Electrical Hazards
D. OSHA guidelines
E. Materials Safety Data Sheet (MSDS)
IV. CDC guidelines
A. Post- exposure protocols
V. Environmental control
A. temperature
B. Humidity
C. Ventilation Systems
D. Gases
E. Suction
VI. Legal Issues
A. Documentation
B. Professional Standards
C. Risk reduction
D. Legal issues

Student Learning Outcomes:

1. Demonstrate an understanding of putting the plan into action in preparation for a disaster.
2. Analyze the legal issues involved in disasters as it relates to surgical assistants.
3. Assess the physical and mental stresses that can occur as a caregiver both during disaster and post-disaster.
4. Describe the role(s) of the surgical Technologist in a surgical setting during a disaster.
5. Define environmental safety in the surgical area.
6. Define potential hazards in the operating room enrvironment
7. Describe the principles of environmental safety controls and guidelines.
8. Interpret prevention, correction and documentation techniques that may positively impact risk management issues in the surgical setting
9. Analyze the recommended practices and legal elements of proper documentation, concepts of the law, and professional standards of conduct.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 212 Credit Hours 3

Course Title: Surgical Procedures I

Abbreviated Title: Surgical Procedures 1

Contact hours per week: Lecture Lab 3 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 4500 Student preparation minutes: 2250

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☑ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 200, SUTE 202, SUTE 204, SUTE 206

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 210, SUTE 214, SUTE 218

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One full time FTE will be needed; funds from part time budget to start the program are available; Partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Western Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Exploration of specific surgical specialties including General Surgery, Obstetrics and Gynecologic, Genitourinary, Orthopedics, and Neurosurgical. This course introduces the student to the surgical specialties with a focus on a systems review of pathology in conjunction with specific procedures performed, specialized instrumentation, and surgical modalities of each surgical specialty.

Justification:

Justification is in the program proposal. The courses follow the curriculum guidelines of the Association of Surgical Technology.

Topical course outline:

1. Patient care concepts
a. Biopsychosocial needs of the patient
b. Death and dying
2. Surgical procedures
a. General surgery
i. Appendectomy - open and laparoscopic
ii. Breast biopsy - sentinel node biopsy and needle localization
iii. Modified radical mastectomy with axillary node dissection
iv. Cholecystectomy - open, laparoscopic, and with cholangiogram
v. Colon resection - with and without colostomy
vi. Gastrectomy - with and without gastrostomy
vii. Hemorrhoidectomy

viii. Herniorrhaphy - open and laparoscopic inguinal, open and laparoscopic incisional, open and laparoscopic umbilical
ix. Laparoscopic Nissen Fundoplication
x. Liver resection
xi. Splenectomy - open and laparoscopic
xii. Thryoidectomy
xiii. Pancreaticoduodenoectomy (Whipple procedure)
b. Obstetrics and gynecologic
i. Cervical biopsy
ii. Cervical cerclage (Shirodkar's procedure)
iii. Dilation and curettage (D&C)
iv. Hysteroscopy
v. Cesarean section
vi. Endometrial ablation
vii. Hysterectomy - laparoscopic, robotic assisted, total abdominal, and vaginal
viii. Myomectomy
ix. Radiation seeding
x. Oophorectomy
xi. Ectopic pregnancy
xii. Salpingectomy
xiii. Sterilization procedures
xiv. Tuboplasty
xv. Labioplasty
xvi. Perineal laceration
xvii. Vulvectomy
xviii. Ablation of condylomata
xix. Marsupialization of Bartholin's cyst (cystectomy)
xx. Anterior and posterior repair (colporrhaphy)
xxi. Diagnostic laparoscopy
xxii. Total pelvic exenteration
xxiii. Wertheim procedure
c. Genitourinary
i. Nephrectomy
ii. Kidney transplant
iii. Wilm's tumor excision (adrenalectomy)
iv. Ureteroscopy
v. Ureteropyelithotomy
vi. TUR-BT
vii. Cystectomy with creation of ileal conduit
viii. Suspencion (TVT/ sling)
ix. TURP
x. Prostatectomy - laparoscopic with robot, suprapubic
xi. Prostate seeding
xii. Circumcision
xiii. Epispadius repair
xiv. Hypospadias repair
xv. Penile implant insertion
xvi. Penectomy
xvii. Hydrocelectomy
xviii. Orchiopexy
xix. Orchiectomy
d. Orthopedics
i. Acromioplasty - open and arthroscopic
ii. Shoulder arthroscopy

iii. Bankart procedure - open and arthroscopic
iv. Shoulder total arthroplasty
v. Radius ORIF
vi. Radius external fixator
vii. Hip total arthroplasty
viii. Hip ORIF
ix. Femur - femoral shaft fracture
x. Knee arthroscopy
xi. Anterior cruciate ligament repair (ACL)
xii. Amputation - above the knee and below the knee
xiii. Knee total arthroplasty
xiv. Achilles tendon repair
xv. Triple arthrodesis
xvi. Bunionectomy
e. Neurosurgical
i. Carpal tunnel release
ii. Laminectomy - anterior and posterior cervical, thoracic, lumbar spinal fusion and minimally invasive
iii. Craniotomy - aneurysm repair, cranioplasty, craniosynostosis repair
iv. Rhizotomy
v. Stereotactic procedures
vi. Transphenoidalhypophysectomy
vii. Ulnar nerve transposition
viii. Ventriculoperitoneal shunt placement
ix. Ventriculoscopy

Student Learning Outcomes:

1. Explain surgical case management in individual surgical procedures.
2. Demonstrate principles of asepsis and sterile technique throughout the peri-operative experience.
3. Distinquish between the significance of anatomy, physiology, and pathophysiology when preparing for the surgical procedure.
4. Describe legal-ethical principles with alternative strategies utilized during surgical procedures.
5. Demonstrate professional verbal and non-verbal techniques to support effective communication.
6. Model professional standards through acceptance of accountability and seeking professional growth.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 214 Credit Hours 3

Course Title: Surgical Procedures II

Abbreviated Title: Surgical Procedures II

Contact hours per week: Lecture Lab 3 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 4500 Student preparation minutes: 2250

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☑ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 200, SUTE 202, SUTE 204, SUTE 206

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 210, SUTE 212, SUTE 218

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One FTE will be needed, supplementation for the start of classes may come from part time budget to start the program; Partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Western Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Exploration of specific surgical specialties including Otorhinolaryngologic, Oral and Maxillofacial, Plastic and Reconstructive, Ophthalmic, Cardiothoracic, and Peripheral Vascular. Students will learn the surgical specialties with a focus on a systems review of pathology in conjunction with specific procedures performed, specialized instrumentation, and surgical modalities of each surgical specialty.

Justification:

Justification is in the program proprosal. The courses follow the curriculum guidelines of the Association of Surgical Technology.

Topical course outline:

1. Surgical procedures
a. Otorhinolaryngologic
i. Cochlear implant
ii. Mastoidectomy
iii. Myringotomy
iv. Stapedectomy
v. Tympanoplasty
vi. Choanal atresia
vii. Endoscopic sinus surgery (FESS)
viii. Nasal antrostomy
ix. Nasal polypectomy
x. Septoplasty

xi. Turbinectomy
xii. Laryngectomy
xiii. Parotidectomy
xiv. Radical neck dissection - glossectomy and mandibulectomy
xv. Temporomandibular joint arthroplasty (TMJ)
xvi. Tonsillectomy and adenoidectomy
xvii. Tracheotomy and tracheostomy
xviii. Uvulopalatopharyngoplasty (UPPP)
b. Oral and maxillofacial
i. Maxillary and mandibular fractures - ORIF and arch bar application
ii. Cleft repair - lip and palate
iii. Odontectomy tooth extraction
iv. Maxillary fractures - LeForte I, II, and III
v. ORIF orbital fracture
c. Plastic and reconstructive
i. Blepharoplasty
ii. Brow lift
iii. Cheiloplasty/ palatoplasty
iv. Malar implants
v. Mentoplasty
vi. Otoplasty
vii. Rhinoplasty
viii. Rhytidectomy
ix. Breast augmentation
x. Mastopexy
xi. Mammoplasty - nipple reconstruction and TRAM flap
xii. Abdominoplasty
xiii. Suction lipectomy
xiv. Superficial lesion/ neoplasm
xv. Skin graft - full thickness (FTSG) and split thickness (STSG)
xvi. Microvascular pedicle graft
xvii. Scar revision
xviii. Dupuytren's contracture
xix. Traumatic injury repair
xx. Radial dysplasia
xxi. Release of polydactyly and syndactyly
d. Ophthalmic
i. Chalazion excision
ii. Dacryocystorhinostomy
iii. Entropian/ ectropian repair
iv. Enucleation
v. Extracapsular cataract excision
vi. Iridectomy
vii. Keratoplasty
viii. Laceration repairs
ix. Scleral buckle
x. Strabismus correction - recession and resection
xi. Vitrectomy
e. Cardiothoracic
i. Bronchoscopy
ii. Mediastinoscopy - lymph node biopsy
iii. Thoracoscopy - video assisted thoracoscopy
iv. Thoracotomy - lobectomy, pneumonectomy, decortication of the lung, lung transplant, pectusexcavatum repair, pulmonary embolism
v. Aortic/ mitral valve replacement

vi. Atrial/ ventricular septal defect repair
vii. Closure of patent ductusarteriosus
viii. Coronary artery bypass graft (CABG) - intraaortic balloon pump, minimally invasive direct (MID-CABG), off pump CABG, Ventricular assistive device (VAD) insertion
ix. Heart transplant
x. Repair of coarctation of the aorta
xi. Tetralogy of fallot repair
xii. Ventricular aneurysm repair
f. Peripheral vascular
i. Abdominal aortic aneurysm with graft insertion
ii. Angioplasty - endograft placement and endostent insertion
iii. Angioscopy
iv. AV shunts and bypass - aortofemoral bypass, arteriovenous fistula and shunt, and femoropopliteal bypass
v. Carotid endarterectomy
vi. Emboloectomy
vii. Vena cava device
viii. Vein ligation and stripping
ix. Venous access device

Student Learning Outcomes:

1. Demonstrate surgical case management, sterile technique and principles of asepsis to provide safe patient care.
2. Differentiate the needs of the patient and surgical team members by incorporating knowledge of anatomy, physiology and pathophysiology.
3. Interpret critical thinking skills to prioritize actions in the role of the surgical technologist that are consistent with legal and ethical standards.
4. Model communication techniques that reflect caring and promote professionalism.
5. Apply professional standards in the care of the surgical patient.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 218 Credit Hours 4

Course Title: Specialty Surgical Procedures

Abbreviated Title: Specialty Surgical Proc

Contact hours per week: Lecture Lab 4 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 6000 Student preparation minutes: 3000

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☑ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 200, SUTE 202, SUTE 204, STUE 206

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 210, SUTE 212, SUTE 218

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE will be needed. Supplement from part time budget may be used to start the program; Partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be at St. Mary's Hospital

Course description for catalog:

Exploration of specific surgical specialties including plastic, pediatric, ophthalmic, vascular, orthopedic, neurosurgery, thoracic, and cardiac surgery. The student will focus on a systems review of pathology in conjunction with specific procedures performed, specialized instrumentation, and surgical modalities of each surgical specialty.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

A. Anatomy of plastic, pediatric, opthalmic, vasuclar, orthopedic, neurosurgery, thoracic and cardiac stuctures

B. Pathology of plastic, pediatric, opthalmic, vasuclar, orthopedic, neurosurgery, thoracic and cardiac stuctures

C. List Pre-Operative Diagnostic tests and preparations for plastic, pediatric, opthalmic, vasuclar, orthopedic, neurosurgery, thoracic and cardiac stuctures

D.Names, Instruments, supplies drugs used in the following surgeries:

1 - Plastic and Hand Surgery
2 - Pediatric Surgery
3 - Ophthalmic Surgery
4 - Neurosurgery
5 - Orthopedics
6 - Vascular Surgery

7 - Thoracic Surgery
8 - Cardiac Surgery
9 - Trauma Surgery
10 - Transplant Surgery
11 - Emergency Procedures

E. Advanced Surgical Procedures
F. Outcomes in specialty Surgery
G. Postoperative care
H. Complications in speciality surgeries

Student Learning Outcomes:

1. Describe the relevant anatomy related to plastic, pediatric, ophthalmic, vascular, orthopedic, neurosurgery, thoracic and cardiac surgery.
2. Describe the pathology that prompts surgical intervention.
3. List preoperative diagnostic tests and preparations.
4. Demonstrate the names and uses of instruments, supplies and drugs pertinent to the body system being operated upon.
5. Identify the names and uses of specialized equipment for that system.
6. Explain advanced surgical procedures.
7. Discuss the expected outcomes of the surgical intervention.
8. Outline the postoperative care and possible complications.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 220 Credit Hours 4

Course Title: Surgical Practicum I

Abbreviated Title: Surg Practicum I

Contact hours per week: Lecture Lab 4 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 6000 Student preparation minutes: 3000

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☐ Summer ☑

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 210, SUTE 212, SUTE 214, SUTE 218

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 230, SUTE 240

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE will be needed. Supplement from part time budget may be used to start the program; Partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchaged with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Development of the student's individualized experience via practice in the field. Emphasis is placed on demonstrating proficiency in skills necessary for participation in basic surgical procedures. This course will afford the student the opportunity to build on skills learned and actively participate in selected surgical procedures in the basic surgical specialties learned in Surgical Procedures 1.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

a. General surgery
i. Appendectomy - open and laparoscopic
ii. Breast biopsy - sentinel node biopsy and needle localization
iii. Modified radical mastectomy with axillary node dissection
iv. Cholecystectomy - open, laparoscopic, and with cholangiogram
v. Colon resection - with and without colostomy
vi. Gastrectomy - with and without gastrostomy
vii. Hemorrhoidectomy
viii. Herniorrhaphy - open and laparoscopic inguinal, open and laparoscopic incisional, open and laparoscopic umbilical
ix. Laparoscopic Nissen Fundoplication
x. Liver resection
xi. Splenectomy - open and laparoscopic

xii. Thryoidectomy
xiii. Pancreaticoduodenoectomy (Whipple procedure)
b. Obstetrics and gynecologic
i. Cervical biopsy
ii. Cervical cerclage (Shirodkar's procedure)
iii. Dilation and curettage (D&C)
iv. Hysteroscopy
v. Cesarean section
vi. Endometrial ablation
vii. Hysterectomy - laparoscopic, robotic assisted, total abdominal, and vaginal
viii. Myomectomy
ix. Radiation seeding
x. Oophorectomy
xi. Ectopic pregnancy
xii. Salpingectomy
xiii. Sterilization procedures
xiv. Tuboplasty
xv. Labioplasty
xvi. Perineal laceration
xvii. Vulvectomy
xviii. Ablation of condylomata
xix. Marsupialization of Bartholin's cyst (cystectomy)
xx. Anterior and posterior repair (colporrhaphy)
xxi. Diagnostic laparoscopy
xxii. Total pelvic exenteration
xxiii. Wertheim procedure
c. Genitourinary
i. Nephrectomy
ii. Kidney transplant
iii. Wilm's tumor excision (adrenalectomy)
iv. Ureteroscopy
v. Ureteropyelithotomy
vi. TUR-BT
vii. Cystectomy with creation of ileal conduit
viii. Suspencion (TVT/ sling)
ix. TURP
x. Prostatectomy - laparoscopic with robot, suprapubic
xi. Prostate seeding
xii. Circumcision
xiii. Epispadius repair
xiv. Hypospadias repair
xv. Penile implant insertion
xvi. Penectomy
xvii. Hydrocelectomy
xviii. Orchiopexy
xix. Orchiectomy
d. Orthopedics
i. Acromioplasty - open and arthroscopic
ii. Shoulder arthroscopy
iii. Bankart procedure - open and arthroscopic
iv. Shoulder total arthroplasty
v. Radius ORIF
vi. Radius external fixator
vii. Hip total arthroplasty

viii. Hip ORIF
ix. Femur - femoral shaft fracture
x. Knee arthroscopy
xi. Anterior cruciate ligament repair (ACL)
xii. Amputation - above the knee and below the knee
xiii. Knee total arthroplasty
xiv. Achilles tendon repair
xv. Triple arthrodesis
xvi. Bunionectomy
e. Neurosurgical
i. Carpal tunnel release
ii. Laminectomy - anterior and posterior cervical, thoracic, lumbar spinal fusion and minimally invasive
iii. Craniotomy - aneurysm repair, cranioplasty, craniosynostosis repair
iv. Rhizotomy
v. Stereotactic procedures
vi. Transphenoidalhypophysectomy
vii. Ulnar nerve transposition
viii. Ventriculoperitoneal shunt placement
ix. Ventriculoscopy

Student Learning Outcomes:

1. Prepare the operating room for general, gastrointestinal, biliary, gynecological, ear, nose & throat, urological surgery.
2. Identify and secure the supplies and equipment needed for procedures in the basic specialties.
3. Demonstrate the set-up for basic operative procedures in described specialties.
4. Assist with the preoperative preparation as defined by the Surgical Technologist's role; i.e. positioning equipment, skin prep equipment and draping supplies.
5. Participate in the surgical procedures by passing instruments, sutures and supplies to the surgeon and assistants for the basic specialties.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 230 Credit Hours 4

Course Title: Surgical Practicum II

Abbreviated Title: Surg Practicum II

Contact hours per week: Lecture Lab 4 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 6000 Student preparation minutes: 3000

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☐ Summer ☑

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 210, SUTE 212, SUTE 214, SUTE 218

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 220, SUTE 240

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE will be needed, Part time budget will be used if needed to start the program; Partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchased with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Development of the student's individualized experience via practice in the field. Emphasis is placed on demonstrating proficiency in skills necessary for participation in basic surgical procedures learned in Surgical Procedures 2.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

a. Otorhinolaryngologic
i. Cochlear implant
ii. Mastoidectomy
iii. Myringotomy
iv. Stapedectomy
v. Tympanoplasty
vi. Choanal atresia
vii. Endoscopic sinus surgery (FESS)
viii. Nasal antrostomy
ix. Nasal polypectomy
x. Septoplasty
xi. Turbinectomy
xii. Laryngectomy
xiii. Parotidectomy

xiv. Radical neck dissection - glossectomy and mandibulectomy
xv. Temporomandibular joint arthroplasty (TMJ)
xvi. Tonsillectomy and adenoidectomy
xvii. Tracheotomy and tracheostomy
xviii. Uvulopalatopharyngoplasty (UPPP)
b. Oral and maxillofacial
i. Maxillary and mandibular fractures - ORIF and arch bar application
ii. Cleft repair - lip and palate
iii. Odontectomy tooth extraction
iv. Maxillary fractures - LeForte I, II, and III
v. ORIF orbital fracture
c. Plastic and reconstructive
i. Blepharoplasty
ii. Brow lift
iii. Cheiloplasty/ palatoplasty
iv. Malar implants
v. Mentoplasty
vi. Otoplasty
vii. Rhinoplasty
viii. Rhytidectomy
ix. Breast augmentation
x. Mastopexy
xi. Mammoplasty - nipple reconstruction and TRAM flap
xii. Abdominoplasty
xiii. Suction lipectomy
xiv. Superficial lesion/ neoplasm
xv. Skin graft - full thickness (FTSG) and split thickness (STSG)
xvi. Microvascular pedicle graft
xvii. Scar revision
xviii. Dupuytren's contracture
xix. Traumatic injury repair
xx. Radial dysplasia
xxi. Release of polydactyly and syndactyly
d. Ophthalmic
i. Chalazion excision
ii. Dacryocystorhinostomy
iii. Entropian/ ectropian repair
iv. Enucleation
v. Extracapsular cataract excision
vi. Iridectomy
vii. Keratoplasty
viii. Laceration repairs
ix. Scleral buckle
x. Strabismus correction - recession and resection
xi. Vitrectomy
e. Cardiothoracic
i. Bronchoscopy
ii. Mediastinoscopy - lymph node biopsy
iii. Thoracoscopy - video assisted thoracoscopy
iv. Thoracotomy - lobectomy, pneumonectomy, decortication of the lung,
lung transplant, pectusexcavatum repair, pulmonary embolism
v. Aortic/ mitral valve replacement
vi. Atrial/ ventricular septal defect repair
vii. Closure of patent ductusarteriosus
viii. Coronary artery bypass graft (CABG) - intraaortic balloon pump, minimally invasive direct (MID-

CABG), off pump CABG, Ventricular assistive device (VAD) insertion
ix. Heart transplant
x. Repair of coarctation of the aorta
xi. Tetralogy of fallot repair
xii. Ventricular aneurysm repair
f. Peripheral vascular
i. Abdominal aortic aneurysm with graft insertion
ii. Angioplasty - endograft placement and endostent insertion
iii. Angioscopy
iv. AV shunts and bypass - aortofemoral bypass, arteriovenous fistula and shunt, and femoropopliteal bypass
v. Carotid endarterectomy
vi. Emboloectomy
vii. Vena cava device
viii. Vein ligation and stripping
ix. Venous access device

Student Learning Outcomes:

1. Demonstrate the preparation of the operating room for general, gastrointestinal, biliary, gynecological, ear, nose & throat, urological surgery.
2. Identify and secure the supplies and equipment needed for procedures in the basic specialties.
3. Set up basic operative procedures in the specified surgical specialties.
4. Demonstrate the preoperative preparation as defined by the Surgical Technologist's role; i.e. positioning equipment, skin prep equipment and draping supplies.
5. Describe the surgical procedures of passing instruments, sutures and supplies to the surgeon and assistants for the basic specialties.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

SUTE 240 Credit Hours 4

Course Title: Surgical Practicum III

Abbreviated Title: Surg Practicum III

Contact hours per week: Lecture Lab 4 Field Studio Other

Type of Instructional Activity: Laboratory: Academic/Clinical

Academic engagement minutes: 6000 Student preparation minutes: 3000

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☐ Summer ☑

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☑ No ☐

SUTE 210, SUTE 212, SUTE 214, SUTE 218

Prerequisite for other course(s): Yes ☑ No ☐

Co-requisites: Yes ☑ No ☐

SUTE 220, SUTE 230

Requirement or listed choice for any program of study: Yes ☑ No ☐

Health Sciences New Program - AAS, Surgical Technology

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☑ No ☐

One new FTE will be needed; Part time budget can supplement the start the program; in partnership with St. Mary's Hospital and Western Health Alliance

Additional equipment required: Yes ☑ No ☐

Surgical equipment that is located at St. Mary's Hospital. Additional equipment will be purchaged with 5000.00 from the Health Alliance

Additional lab facilities required: Yes ☑ No ☐

Surgical Lab that will be located at St. Mary's Hospital

Course description for catalog:

Development of the student's individualized experience via practice in the field. Emphasis is placed on demonstrating proficiency in skills necessary for participation in basic surgical procedures in specialty areas learned in Specialty Surgical Procedures. The student will prepare for the final competencies and prepare for transition to the work environment.

Justification:

See justification for the Surgical Technology Program AAS.

Topical course outline:

1. Plastic and Hand Surgery
2. Pediatric Surgery
3. Ophthalmic Surgery
4. Neurosurgery
5. Orthopedic Surgery
6. Vascular Surgery
7. Thoracic Surgery
8. Cardiac Surgery
9. Trauma Surgery
10. Transplant Surgery
11. Emergency Procedures

Student Learning Outcomes:

1. Demonstrate the preparation of the operating room for plastic, pediatric, ophthalmic, vascular, orthopedic, neurosurgery, thoracic, cardiac, trauma and transplant surgery.
2. Identify and secure the supplies and equipment needed for procedures in the basic specialties.
3. Describe the basic operative procedures in the plastic, pediatric, ophthalmic, vascular, orthopedic, neurosurgery, thoracic, cardiac, trauma and transplant specialties.
4. Describe the preoperative preparation as defined by the Surgical Technologist's role; i.e. positioning equipment, skin prep equipment and draping supplies.
5. Demonstrate the surgical procedures used in surgeries ie. passing instruments, sutures and supplies to the surgeon and assistants for the advanced specialties.

Proposed by: Debra Bailey Expected Implementation: Fall 2016

Department: Kinesiology

Course Addition: KINA 181R Credit Hours 1

Course Title: Varsity Women's Sand Volleyball

Abbreviated Title: Varsity Women's Sand VB

Contact hours per week: Lecture Lab Field Studio Other 1.5

Type of Instructional Activity: Physical Education: Recreation Courses

Academic engagement minutes: 1125 Student preparation minutes: 1125

Intended semesters for offering this course: Fall ☐ J-Term ☐ Spring ☑ Summer ☐

Essential Learning Course: Yes ☐ No ☑

Prerequisites: Yes ☐ No ☑

Prerequisite for other course(s): Yes ☐ No ☑

Co-requisites: Yes ☐ No ☑

Requirement or listed choice for any program of study: Yes ☐ No ☑

Overlapping content with present courses offered on campus: Yes ☐ No ☑

Additional faculty FTE required: Yes ☐ No ☑

Additional equipment required: Yes ☐ No ☑

Additional lab facilities required: Yes ☐ No ☑

Course description for catalog:

NA - Catalog descriptions are not needed for activity courses.

Justification:

The Department of Athletics has added women's sand volleyball as a varsity sport. The addition of this course makes it possible for the athletes participating in that sport to receive academic credit.

Topical course outline:

Not applicable.

Student Learning Outcomes:

Not applicable.

Discussions with affected departments:

Department of Athletics - 31 March 2015. They were in support of the course addition.

Proposed by: Jeremy Hawkins Expected Implementation: Spring 2016

Course Modifications

KINE 320

	Current	Proposed
Course Prefix:	KINE	
Course No.:	320	
Credit Hours	3	
Course Title:	Methods of Teaching Physical Education in Elementary Schools	

Prerequisites:

Current: KINE 256 or consent of instructor.

Proposed: EDUC 115, EDUC 215, and KINE 256.

Requirement or listed choice for any program of study: Yes ☑ No ☐

Kinesiology BA, Kinesiology-K-12 Education: 3137

Justification:

EDUC 211 was deleted as a course and replaced by EDUC 115 and EDUC 215. EDUC 211 had previously been a prerequisite for KINE 320. This change reflects the need for the two courses that replaced EDUC 211 to continue as prerequisites for KINE 320 and to update the catalog to read the same as the program sheet with regards to this.

Proposed by: Jeremy Hawkins Expected Implemention: Fall 2016

KINE 408

	Current	Proposed
Course Prefix:	KINE	
Course No.:	408	
Credit Hours	3	
Course Title:	Methods of Teaching Physical Education in Secondary Schools	

Prerequisites:

Current: KINE 256 or consent of instructor.

Proposed: EDUC 115, EDUC 215, and KINE 214.

Requirement or listed choice for any program of study: Yes ☑ No ☐

Kinesiology BA, Kinesiology-K-12 Education: 3137

Justification:

EDUC 211 was deleted as a course and replaced by EDUC 115 and EDUC 215. EDUC 211 had previously been a prerequisite for KINE 408. This change reflects the need for the two courses that replaced EDUC 211 to continue as prerequisites for KINE 408 and to update the catalog to read the same as the program sheet with regards to this. KINE 214 replaced KINE 256 because it is a more appropriate prerequisite.

Proposed by: Jeremy Hawkins Expected Implemention: Fall 2016

Department: Physical and Environmental Sciences
Program Modification

Degree Type: BS Physics: 3471

Revision to program sheet: Yes ☑ No ☐

Description of modification:

We propose to require that our students take CSCI 111. We also propose to remove the requirement that our students take PHYS 422 - Quantum Physics II and PHYS 473 - Modern Optics. These courses will be replaced by any 2 of a number of restricted, upper-level physics electives. We are also allowing students to take MATH 236 in place of MATH 260.

Justification:

After conducting a survey of jobs or graduate programs our alumni are in we find that we need to require a basic fluency in computer skills to better prepare our students for their post baccalaureate careers. We also find that the two courses we are removing from the required list are generally only suitable for students on a graduate school track. By allowing more flexibility in our upper level degree requirements we are able to allow students to more appropriately prepare themselves for either a terminal bachelors degree employment seeking track OR a graduate school seeking track.

The addition of an alternate course in differential equations is to allow those students who have taken MATH 236 (which has suitable content to replace MATH 260) to become physics majors without the need for them to repeat a similar course.

Revision to SLOs: Yes ☐ No ☑

Other changes: Yes ☑ No ☐

As described above, the inclusion of a required computer course will make our students better prepared for both employment and graduate school The added flexibility in creating a pool of (already offered) upper level electives will allow the students to tailor their own education to pursue whatever path is most suitable for them.

Discussions with affected departments:

Computer Science will be effected as we will be requiring our students to take CSCI 111. I spoke with Lori Payne last May and she amenable to the idea.

Proposed by: Jared Workman

Director of Teacher Education Signature: N/A

Expected Implementation: Fall 2016

~~2015-2016~~2016-2017 **PETITION/PROGRAM SHEET**
Degree: Bachelor of Science
Major: Physics

About This Major . . .

Physics is the study of the universe: what it is made of and how it works, ranging from stars and galaxies to atoms and nuclei and everything in between. Physics forms the foundation of many technical fields including electronics and optics. Physics also features prominently in many of the hottest areas of current research and innovation, such as the multidisciplinary fields of nanotechnology and biophysics.

The physics program serves as a foundation for a wide array of careers. Physics majors from Colorado Mesa University have gone on to graduate programs in physics, astrophysics, chemistry, materials science, aerospace engineering, electrical engineering, and to medical school. They have also gone directly into jobs in engineering, business, and research. Over the last ten years Colorado Mesa physics majors have gone to graduate schools at the University of Colorado Boulder, University of Utah, Purdue University, and Washington State University. For more information on what you can do with this major, go to http://www.coloradomesa.edu/career/whatmajor.html.

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Show fluency with the major fields of physics (classical mechanics, electromagnetism, statistical physics, and quantum theory). (Specialized Knowledge)
2. Use mathematical representations to analyze physical scenarios. (Quantitative Fluency)
3. Use laboratory techniques to investigate experimentally physical phenomena. (Applied Learning)
4. Communicate effectively about topics in physics. (Communication Fluency)
5. Execute a project which addresses a significant and complex issue in physics. This project will integrate knowledge and techniques from different areas of physics. (Specialized Knowledge/Applied Learning)

NAME: _____ **STUDENT ID #:** _____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ **( )** _____

I, (Signature)_____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

_____ _____ 20_____
Signature of Advisor Date

_____ _____ 20_____
Signature of Department Head Date

_____ _____ 20_____
Signature of Registrar Date

DEGREE REQUIREMENTS:

- 120 semester hours total (Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher).
- 40 upper division credits (A minimum of 15 taken at the 300-400 course levels within the major at CMU).
- 2.00 cumulative GPA or higher in all CMU coursework.
- 2.00 cumulative GPA or higher in coursework toward the major content area. A "C" or higher is required in all major courses.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- When filling out the program sheet a course can be used only once.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- See the "Undergraduate Graduation Requirements" in the for additional graduation information.
- Essential Learning Capstone should be completed between 45 and 75 hours.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.

ESSENTIAL LEARNING REQUIREMENTS (31 semester hours)
See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Course No	Title	Sem.hrs	Grade	Term/Trns
English (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)				
ENGL 111	English Composition	3		
ENGL 112	English Composition	3		
Math (3 semester hours, must receive a grade of "C" or better, must be completed by the time the student has 60 semester hours.)				
MATH 151	Calculus I	5*		
*3 credits apply to the Essential Learning requirements and 2 credits apply to elective credit				
Humanities (3 semester hours)				
Social and Behavioral Sciences (6 semester hours)				
Natural Sciences (7 semester hours, one course must include a lab)				
L				
History (3 semester hours)				
HIST				
Fine Arts (3 semester hours)				

Course No	Title	Sem.hrs	Grade	Term/Trns
WELLNESS REQUIREMENT (2 semester hours)				
KINE 100	Health and Wellness	1		
KINA 1		1		
ESSENTIAL LEARNING CAPSTONE (4 semester hours)				
ESSL 290	Maverick Milestone (see English & math pre-reqs)	3		
ESSL 200	Essential Speech (co-requisite)	1		
FOUNDATION COURSES (14 semester hours) A "C" or higher is required in all foundation courses.				
CSCI 111	Foundations of Computer Science	4		
PHYS 131	Fundamental Mechanics	4		
PHYS 131L	Fundamental Mechanics Lab	1		
PHYS 132	Electromagnetism & Optics	4		
PHYS 132L	Electromagnetism & Optics Lab	1		
PHYSICS MAJOR REQUIREMENTS (50/5160 semester hours) Must pass all courses with a grade of "C" or higher.				
~~PHYS 131~~	~~Fundamental Mechanics~~	~~4~~		
~~PHYS 131L~~	~~Fundamental Mechanics Lab~~	~~1~~		
~~PHYS 132~~	~~Electromagnetism and Optics~~	~~4~~		
~~PHYS 132L~~	~~Electromagnetism and Optics Lab~~	~~1~~		
PHYS 230	Intermediate Dynamics	3		
PHYS 231	Modern Physics	3		
PHYS 251	Electronics for Scientists	3		
PHYS 252	Intermediate Lab	2		
PHYS 311	Electromagnetic Theory I	3		
PHYS 321	Quantum Theory	3		
PHYS 331	Advanced Laboratory I	2		
PHYS 342	Advanced Dynamics	3		
PHYS 362	Statistical & Thermal Physics	3		
~~PHYS 422~~	~~Quantum Theory II~~	~~3~~		
~~PHYS 473~~	~~Modern Optics~~	~~3~~		
PHYS 482	Senior Research	1		
PHYS 482	Senior Research	1		
PHYS 494	Seminar	1		
PHYS 494	Seminar	1		
(PHYS 482 and 494 are taken twice)				
MATH 152	Calculus II	5		
MATH 253	Calculus III	4		
MATH 260	Differential Equations	3		
OR				
MATH 236	Differential Equations and Linear Algebra	4		
MATH 360	Methods of Applied Mathematics	3		
Restricted Electives (6 semester hours) Courses are to be chosen from the list on page 3				
ELECTIVES (All college level courses appearing on your final transcript, **not listed above** that will bring your total semester hours to 120 hours.) (18/1923 semester hours; 12/13 hours upper division may be needed.)				
*MATH 151	Calculus I	2		

RESTRICTED ELECTIVES:

PHYS 312 Electromagnetic Theory II (3)
PHYS 396 Topics (3) May be taken more than once so long as the same topic is not repeated
PHYS 422 Quantum Theory II (3)
PHYS 441 Solid State Physics (3)
PHYS 471 Computational Physics I (3)
PHYS 472 Computational Physics II (3)
PHYS 473 Modern Optics (3)
PHYS 496 Topics (3)

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN PHYSICS

This is a suggested sequence of course work. Certain courses may have prerequisites or are only offered during the Fall or Spring semesters. It is the student's responsibility to meet with the assigned advisor and check the 2 year course matrix on the Colorado Mesa website for course availability.

FRESHMAN YEAR

Fall Semester		Hours
PHYS 131	Fundamental Mechanics	4
PHYS 131L	Fundamental Mechanics Lab	1
MATH 151	Calculus I	5
ENGL 111	English Composition	3
ESSL	Humanities	3
~~ESSL~~	~~Humanities~~	~~3~~
		16~~6~~

Spring Semester		Hours
PHYS 132	Electromagnetism and Optics	4
PHYS 132L	Electromagnetism and Optics Lab	1
MATH 152	Calculus II	5
ENGL 112	English Composition	3
ESSL	History	3
		16

SOPHOMORE YEAR

Fall Semester		Hours
PHYS 230	Intermediate Dynamics	3
PHYS 251	Electronics for Scientists	3
MATH 253	Calculus III	4
~~ESSL~~	~~Natural Science~~	~~3~~
~~KINE 100~~	~~Health and Wellness~~	~~1~~
KINA	Activity	1
CSCI 111		4
		15

Spring Semester		Hours
PHYS 231	Modern Physics	3
PHYS 252	Intermediate Lab	2
MATH 260/236	Differential Equations	3/4
ESSL	Social/Behavioral Science	3
ESSL 200	Essential Speech	1
ESSL 290	Maverick Milestone	3
		15/16

JUNIOR YEAR

Fall Semester		Hours
PHYS 311	Electromagnetic Theory I	3
PHYS 3~~42~~21	Advanced Dynamics~~Quantum Theory I~~	3
PHYS 331	Advanced Laboratory	2
MATH 360	Methods of Applied Mathematics	3
ESSL	Social/Behavioral Science~~Fine Arts~~	3
		14

Spring Semester		Hours
PHYS 32142	~~Advanced Dynamics~~Quantum Theory 1	3
PHYS 362	Statistical and Thermal Physics	3
ESSL	Fine Arts	3
~~ESSL~~	~~Social/Behavioral Science~~	~~3~~
ESSL	Natural Science with lab	4
Electives (unrestricted)		3
		16

SENIOR YEAR

Fall Semester		Hours
Restricted Elective		3
~~PHYS 473~~	~~Modern Optics~~	~~3~~
PHYS 482	Senior Research	1
PHYS 494	Seminar	1
Electives (unrestricted)		~~9~~9
		14

Spring Semester		Hours
Restricted Elective		3
~~PHYS 422~~	~~Quantum Theory II~~	~~3~~
PHYS 482	Senior Research	1
PHYS 494	Seminar	1
ESSL	Natural Science	3
KINE 100	Health and Wellness	1
Electives (unrestricted)		4/5~~9~~

13/14~~4~~

POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.** You must turn in your "Intent to

Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December**.

3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
5. NOTE: During your senior year, you will be required to take a capstone exit assessment/project (e.g,, Major Field Achievement Test).

Department: Social and Behavioral Sciences

Course Deletions

SOWK 330

Credit Hours 3

Type of Change: Deletion

Course Title: Social Work for Diverse Populations

Essential Learning Course: Yes ☐ No ☑

Requirement or listed choice for any program of study: Yes ☐ No ☑

Prerequisite for other course(s): Yes ☐ No ☑

Co-requisite for other course(s): Yes ☐ No ☑

Justification:

This course was approved by Curriculum Committee to be changed to its current course numbering of SOWK 210 Social Work for Diverse Populations, at its September 2013 meeting. An addition form and narrative for the new SOWK 210 Social Work for Diverse Populations was completed and approved by CC; however, a deletion form for the old course, SOWK 330, was never completed or approved by CC. This course needs to be officially deleted so it can be removed from the CMU catalog.

Proposed by: Kymberly Owens

Expected Implementation: Fall 2016