SANTA MONICA COLLEGE
ACADEMIC
SENATE
1900 Pico Boulevard
Santa Monica, CA 90405
310.434.4611

CURRICULUM COMMITTEE ❙ AGENDA

Wednesday, March 20, 2013 ❙ 3:00 p.m.
Loft Conference Room – Drescher Hall 300-E

Members:

Guido Davis Del Piccolo, *Chair*	Jose-Manuel Gonzalez	Walter Meyer	Oliver Shapiro
Georgia Lorenz, *Vice Chair*	Roberto Gonzalez	Estela Narrie	Jeffery Shimizu
Ariel Alexander	Maral Hyeler	James Pacchioli	David Shirinyan
Brenda Antrim	Randal Lawson	Elaine Roque	Gary Taka
Teri Bernstein	Emily Lodmer	Josh Sanseri	Toni Trives
Ellen Cutler	Walt Louie	Deborah Schwyter	Julie Yarrish
Keith Fiddmont			

Interested Parties:

Maria Bonin	Mary Colavito	Mitra Moassessi	Linda Sinclair
Patricia Burson	Kiersten Elliott	Steven Myrow	Eleanor Singleton
Jamie Cavanaugh	Mona Martin	Katharine Muller	Chris Young
Jonathan Cohanne			

Ex-Officio Members:

Janet Harclerode	Parker Jean

A G E N D A

(Items for action are listed alphabetically; items for information are listed numerically)

I. Call to order

II. Public Comments*

III. Approval of Minutes……..……3

IV. Chair's report

V. Information items:

(Course Updates)

1. NURSNG 16 Physical Assessment
2. NURSNG 35 Advanced Medical-Surgical Nursing 2
3. NURSNG 40 Nursing Of Children I
4. NURSNG 40L Nursing Of Children Lab I
5. NURSNG 60 Multicultural Health And Healing Practices
6. RES TH 30 Adult Critical Care Monitory And Diagnostics

(Program Review)

7. COSM 10 Introduction To Cosmetology And Related Science
8. COSM 11B Hair Styling I
9. COSM 11D Permanent Wave I

**Five minutes is allotted to any member of the public who wishes to address the Curriculum Committee on a specific agenda item, for general public comments, or non-agenda items.*

10. COSM 14A Curly Hair Techniques 1
11. COSM 14B Curly Hair Techniques 2
12. COSM 16 Nail Care 1
13. COSM 20 Related Science 2
14. COSM 21A Hair Cutting 2
15. COSM 21D Permanent Waving 2
16. COSM 24 Curly Hair Techniques 2
17. COSM 26 Nail Care 2
18. COSM 31B Hair Styling 3
19. COSM 31C Hair Coloring 3
20. COSM 36 Nail Care 3
21. COSM 38 Skin Care 3
22. COSM 41B Hairstyling 4
23. COSM 46 Nail Care 4/Manicuring 4
24. COSM 48 Skin Care 4
25. COSM 64 Salon Management

VI. Action Items:

(New Course)

a. CS 87 - Python Programming……6

(Distance Education)

b. CS 87: Python Programming……..9
c. MLT 3: Blood Banking and Immunology……..20
d. MLT 4: Clinical Chemistry……29

(Degrees/Certificates)

Name Change

e. Associate in Science Degree and Certificate of Achievement: Business Administration to Business Administration – Professional (addition of the word "Professional" to distinguish it from the AS-T in Business Administration)

Addition of an elective course

f. Associate in Science Degree and Certificate of Achievement: Database Applications Developer (Addition of CS 87: Python Programming as an elective course)…….32
g. Associate in Science and Certificate of Achievement: Web Programmer (Addition of CS 87: Python Programming as an elective course)…….....33

VII. New Business:

26. Prerequisites

VIII. Adjournment

Please advise Guido Davis Del Piccolo (x. 3561), Georgia Lorenz (x. 4277) or Grace Smith (x. 4454) if you are unable to attend this meeting.

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CURRICULUM COMMITTEE | MINUTES

Wednesday, February 20, 2013 | 3:00 p.m.
Loft Conference Room – Drescher Hall 300-E

Members Present:

Guido Davis Del Piccolo, *Chair*	Keith Fiddmont	Walt Louie	David Shirinyan
Georgia Lorenz, *Vice Chair*	Maral Hyeler	James Pacchioli	Gary Taka
Brenda Antrim	Randal Lawson	Elaine Roque	Toni Trives
Teri Bernstein	Emily Lodmer	Deborah Schwyter	Julie Yarrish

Members Absent:

Ariel Alexander	Roberto Gonzalez	Estela Narrie	Oliver Shapiro
Ellen Cutler	Walter Meyer	Josh Sanseri	Jeffery Shimizu
Jose-Manuel Gonzalez			

Others Present:
Salvador Carrasco

M I N U T E S

(Items for action are listed alphabetically; items for information are listed numerically)

I. Call to order:
The meeting was called to order at 3:08 p.m.

II. Public Comments*:
None.

III. Approval of Minutes:
The minutes of December 5, 2012 were approved as presented.

IV. Chair's report:

- The Academic Senate approved the following on December 11, 2012:

(Course name change)

a. Photo 30: From "Techniques of Lighting: Introduction" to "Techniques of Artificial Lighting"
b. Photo 31: from "Introduction: Photographing People" to "Lighting for People 1"
c. Photo 32: from "Photographing People: Advanced" to "Lighting for People 2"
d. Photo 33: from "Techniques of Lighting: Product" to "Lighting for Products"

(New Course)

e. Music 79A: Jazz Improvisation

(Degrees & Certificates)

f. Solar Photovoltaic Installation: Department Certificate

**Five minutes is allotted to any member of the public who wishes to address the Curriculum Committee on a specific agenda item, for general public comments, or non-agenda items.*

- The Chair shared the AA-T and AS-T certification form/100% Goal Worksheet (Page 6 of the February 20, 2013 agenda) which was submitted to the Chancellor's office and shows that by Fall 2014, SMC will have offered 13 AA-T and AS-T degrees (the goal set forth being 12; SMC has 5 active AA-Ts and AS-Ts and 8 more planned which align with available Transfer Model Curriculum templates).

- An update on the C-ID (Course Identification Number System) was provided: the system requires institutions to adopt a C-ID number for courses which are part of a TMC-aligned degree (including previously approved degrees) and for which a descriptor exists. Several details on the C-ID system are pending. A suggestion was made that when this is implemented for the said courses, the number be displayed in the SMC catalog with the other course information.

- Teri Bernstein was welcomed to the Committee as Curriculum Representative for the Communication and Business departments: she is substituting for Pat Halliday who is on banked leave for the Spring 2013 semester.

- The Chair and Vice Chair are working with the departments to be impacted by the upcoming changes in the Title 5 section dealing with course repeatability to be implemented in Summer 2013 (limiting students to four experiences within the same activity with certain defined exceptions).

V. Information items:

(Program Review)

1. COSM 11A: Hair Cutting 1
2. COSM 11C: Hair Coloring 1
3. COSM 18: Skin Care 1
4. COSM 21B: Hair Styling 2

(Course Updates)

5. COUNS 1: Developing Learning Skills
6. COUNS 20: Student Success Seminar
7. COUNS 88A-C: Independent Studies In Mentorship
8. NURSNG 10: Nursing Skills
9. NURSNG 10L: Nursing Skills Laboratory
10. NURSNG 15: Nursing Fundamentals
11. NURSNG 15L: Nursing Fundamentals Laboratory
12. NURSNG 25: Psychiatric - Mental Health Nursing 1
13. NURSNG 25L: Psychiatric Mental Health Nursing Laboratory 1
14. NURSNG 28: Community-Based Nursing Practice
15. NURSNG 45: Women's Health Care 1
16. NURSNG 45L: Women's Health Care Lab 1
17. RES TH 1: Introduction To Respiratory Therapy
18. RES TH 60: Respiratory Physiology

(DE Course Update)

19. BUS 62: Human Relations And Ethical Issues In Business
20. ECE 46: Infant Through Toddler Studies

VI. Action Items:

New Course –

a. **FILM 40: Cinematography –** presented by Salvador Carrasco.

Film 40 was approved with minor edits to the text in the catalog course description and course content.

Motion Made by: Deborah Schwyter **Seconded by:** Randal Lawson
The motion passed unanimously.

Degrees/Certificates –

Name Change

b. Associate in Science Degree & Certificate of Achievement: Early Childhood Education Career (addition of the word "Career"):
(The Chair will provide the Committee's feedback to the department regarding reconsidering the use of the word "Career")

Motion Made by: Teri Bernstein **Seconded by:** James Pacchioli
The motion passed unanimously.

Elimination of degree and certificate of achievement

c. Associate in Arts Degree and Certificate of Achievement: Early Childhood Master Teacher (elimination)

Motion Made by: Emily Lodmer **Seconded by:** Maral Hyeler
The motion passed unanimously.

VII. Adjournment:

The meeting was adjourned at 4:06 p.m.

Santa Monica College
New SMC Course
Expanded Course Outline for CS 87 - Python Programming

Course Cover	
Discipline	CS-COMPUTER SCIENCE
Course Number	87
Full Course Title	Python Programming
Catalog Course Description	This course introduces the Python language to students with little or no programming background. Students will learn how to write programs dealing in a wide range of application domains. Topics covered include the language syntax, IDE, control flow, strings, I/O, classes and regular expressions. Students may use either a PC (Windows) or a Mac (Linux) to complete their programming assignments.
Rationale	
Rationale	Python is a fast growing language used in NASA, web development and Google as well as many UC campus like UC Santa Barbara. Its easy syntax along with its built-in classes makes it a good tool to learn programming as well as to develop complex applications.
Proposal Information	
Proposed Start	Year: 2014 Semester: Spring
Proposed for Distance Ed	Yes
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Weekly Laboratory Hours	Min: 0
Weekly Arranged Hours	Min: 0
Total Semester Instructional Hours	54.00
Load Factor	1.00
Load Factor	CS courses are load factor 1. This is a programming course.

Rationale	
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Minimum Qualification	
Minimum Qualifications:	Computer Science (Masters Required)
Program Applicability	
Designation	Credit - Degree Applicable
Proposed For	**AA Degree** -Web Developer **Certificate of Achievement** -Web Developer **Department Certificate** -Web Developer
Course Objectives	
Upon satisfactory completion of the course, students will be able to:	
1. Use logical analysis to develop the logical code model from which the code statements are developed.	
2. Demonstrate and use the basic syntax of Python.	
3. Use appropriate data structures as data containers.	
4. Debug and test programs written in Python.	
5. Model applications using Python.	
Course Content	
10%	Debug and test programs written in Python.
15%	Variables and simple Input/output
25%	Branching control structures
5%	Working with Strings
10%	Lists and Dictionaries
25%	Functions
10%	Using Files I/O
Total: 100%	
Methods of Evaluation	
Methods	• 5% - Class Participation participation in class discussions • 25% - Exams/Tests 2 Midterms • 30% - Final exam Final Exam • 20% - Homework 6 programming assignments • 20% - Quizzes 5 quizzes

	• 100% - Total
Methods of Presentation	
Methods	Critique Lab Lecture and Discussion Projects
Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	APA
Textbooks	
1. Zelle, John. *Python Programming: An Introduction to Computer Science*, Second Edition ed. Franklin, Beedle and Associates Publishing, 2010	
1. Good reference: Quality Python Development [Kindle Edition]. Frédéric Lepied. 2012. Another good reference: Python Programming for the Absolute Beginner, 3rd Edition. Michael Dawson by Course Technology, 2010.	
Assignments	
Design and write code to implement the tic-tac-toe game using while loops.	
Pre/Corequisites & Advisories	
Prerequisite CS 3	
Content Review	
CS 3 - Prerequisite (Content to Objective)	
Library	
List of suggested materials has been given to librarian?	Yes
Library has adequate materials to support course?	Yes
Student Learning Outcomes	
1. Applying logical analysis, students will design, build and debug programming projects in Python.	
2. Using the built-in functions of Python, students will be able to build data processing application.	
Transfer/General Ed	
IGETC Area:	
Does NOT satisfy any area of IGETC:	

CSU GE Area:
Does NOT satisfy any area of CSU GE:
SMC GE Area:
Does NOT satisfy any area of SMC GE:

Comparable Transfer Courses:

- **UC**
  UC Santa Barbara
  Introduction to Computer Science CS 8
- **UC**
  UC Santa Cruz
  Intro to Programming in Python COMPS5P

Distance Ed **Distance Education Application**	
Delivery Methods	Online/Web-based
Distance Education Quality	
Quality Assurance	Course objectives have not changed Course content has not changed Method of instruction meets the same standard of course quality Outside assignments meet the same standard of course quality Serves comparable number of students per section as a traditional course in the same department Required texts meet the same standard of course quality
Additional Considerations	Evaluation methods are in place to produce an annual report to the Board of Trustee on activity in offering this course or section following the guidelines to Title 5 Section 55317 (see attachment) and to review the impact of distance education on this program through the program review process specified in accreditation standard 2B.2. Determination and judgments about the equality of the distance education course were made with the full involvement of the faculty as defined by Administrative Regulation 5420 and college curriculum approval procedures. Adequate technology resources exist to support this course/section Library resources are accessible to students Specific expectations are set for students with respect to a minimum amount of time per week for student and homework assignments Adequately fulfills “effective contact between faculty member and student” required by Title 5. Will not affect existing or potential articulation with other colleges Special needs (i.e., texts, materials, etc.) are reasonable Complies with current access guidelines for students with disabilities

Guidelines and Questions for Curriculum Approval of a Distance Education Course Student Interactions	
Student-Instructor Interaction	Students have weekly threaded discussion board to ask questions and get responses. Also, students will be required to post messages in response to questions posed each week to cover the material covered that week.
Student-Student Interaction	Students may email questions to the instructor
Student-Content Interaction	Students will post weekly answers to questions in a threaded discussion. Students get feedback on their assignments.

Online class activities that promote class interaction and engagement	Brief Description	Percentage of Online Course Hours
Discussion Boards	Students post weekly answers to questions.	5%
Online Lecture	Powerpoint slides with animation and annotations to explain the topics covered.	45%
Exams	4 quizzes, 2 midterms and one final exam.	20%
Written assignments	Students submit written programming assignments, and get individual feedback as well as sample solutions and general comments for the whole class.	10%

Describe how content will be organized and delivered in the interest of achieving course outcomes/objectives (e.g. what are the methods of instruction being used, technologies used, approximate time schedule, necessary instructional materials.)
Weekly powerpoint slides with animation and annotation. Discussion board messages help further clarify topics. Individualized feedback on each assignment and overall comments for the whole class help students avoid pitfalls and adopt good programming techniques.
Describe the technical qualifications an instructor would need and the support that might be necessary for this course to be delivered at a distance (e.g. the college?s existing technology, CCCConfer certification, other specialized instructor training, support personnel, materials and resources, technical support, etc.)
eCollege will be used. Instructor needs to have proper experience with online course delivery.
Describe any student support services one might want or need to integrate into the online classroom for this course (e.g. links to counseling, financial aid, bookstore, library, etc.)
Students are referred to counseling, and tutoring services via announcements and the course syllabus - both posted in the online side.
Describe how the design of the course will ensure access for students with disabilities including compliance with the regulations of Section 508 of the Rehabilitation Act.

All materials will be 508 compliant: content will be available via reader application. All sound files will be captioned.
Using one of the course objectives, describe an online lesson/activity that might be used in the course to facilitate student learning of that objective. Be sure the sample lesson/activity includes reference to the use of online teaching tools (such as drop box or threaded discussion, or multimedia such as Articulate, Flash, Jing, etc.).
Students submit assignments in the dropbox and get individual feedback. Completing the assignments helps students solidify and practice the topics covered. A general comment about each assignment will be posted in the weekly discussion so students cover the 'lessons learned' and avoid pitfalls. Weekly postings in the discussion keeps students engaged. Quizzes keep the students on-course with their studying.
Assessment Best Practices
5%-**class participation** - Students get a question each week in the discussion board that they must answer and get feedback on 20%-**Written programming assignments** - students get individual feedback, a sample solution, and overall comments for everyone posted in the discussion so students learn from each other mistakes. 20%-**Quizzes** - Quizzes help student keep up their studying. they get answer keys and may post questions about them in the discussion. 25%-**Midterms** - Students get feedback on their coding questions
Attached Files
Updated DE application CS87_CS3 Prereq Form

Prerequisite / Corequisite Checklist and Worksheet

CS 87
Prerequisite: CS 3: Introduction to Computer Systems
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)
(If applicable, enter Discipline and Course # here) ; (Enter Course Title here)

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	X	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	X	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	X	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	X	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	X	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	X	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	X	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	X	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	X	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

___ Type 1: Standard Prerequisite (required prerequisite at UC or CSU)
Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite.
List schools here:
Complete the Prerequisite Worksheet

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

modified 09/26/2012

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(CS 87)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Define fundamental computer concepts.
B)	Trace the execution of basic programs.
C)	Write rudimentary computer programs.

EXIT SKILLS (objectives) FOR **(CS 3)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Define fundamental computer concepts.
2.	Trace the execution of basic programs.
3.	Write rudimentary computer programs.

		ENTRANCE SKILLS FOR (CS 87)							
		A	B	C	D	E	F	G	H
EXIT SKILLS FOR (CS 3)	1	X							
	2		X						
	3			X					
	4								
	5								
	6								
	7								
	8								

modified 09/26/2012

Santa Monica College
Update (NEW/MODIFIED DE)
Expanded Course Outline for MLT 3 - Blood Banking and Immunology

Course Cover	
Discipline	MLT-Medical Laboratory Technician
Course Number	3
Full Course Title	Blood Banking and Immunology
Catalog Course Description	This course introduces the theory of antigen-antibody reactions as it relates to blood grouping and typing, antibody detection and compatibility testing. Also discussed are blood donor screening and component preparations, immunologically related diseases, transplantation, and principles of antigen-antibody based tests. This course will utilize computer technology to enhance student learning.
Proposal Information	
Proposed Start	Year: 2013 Semester: Spring
Proposed for Distance Ed	Yes
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 5.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Weekly Laboratory Hours	Min: 6.00 (Sem: 108)
Weekly Arranged Hours	Min:
Total Semester Instructional Hours	162.00
Load Factor	1.00
Load Factor Rationale	This is consistent with Life Science Department courses with both a lecture and a lab component.
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Minimum Qualification	
Minimum Qualifications:	No Minimum Qualifications For this Course

Program Applicability	
Designation	Credit - Degree Applicable
Proposed For	**AS Degree** -Medical Laboratory Technician **Certificate of Achievement** -Medical Laboratory Technician

Course Objectives
Upon satisfactory completion of the course, students will be able to:
1. Relate the physical and biochemical characteristics of the immunoglobulins.
2. Discuss basic genetics and apply them to the necessary areas of blood banking.
3. Discuss the rationale behind the utilization of serological reactions in the diagnoses of disease.
4. Outline the principle behind the detection of antigen-antibody reactions in the following methodologies, antigen or antibody binding tests, fluid precipitation, gel precipitation, agglutination reactions, complement fixation and neutralization.
5. Describe the ABO, Rh and other blood group antigens, relating methods for detecting and their clinical significance.
6. Discuss the function of blood and component transfusion, the indications and contraindications for utilization and the laboratories role in preparation.
7. Describe in detail the procedures performed in a clinical blood bank and serology laboratory.
8. Discuss clinical conditions associated with Immunohematology.
9. Demonstrate general knowledge of the wide variety and far reaching consequences of diseases of the immune system.
10. Relate quality assurance regulation, safety and regulatory issues in Immunohematology.
11. Describe HLA and its nomenclature, genetics, role in paternity testing and histocompatibility typing.
12. Correctly obtain and process specimens to be used for immunohematology.
13. Prepare red cell suspensions for use in blood bank procedures.
14. Recognize and correctly grade hemagglutination, hemolysis and latex agglutination reactions. Perform serial dilution techniques. Titer positive antibody screens when necessary within one dilution of instructor.
15. Recognize importance of antigen-antibody ratios in immunological reactions.
16. Perform and interpret direct and indirect antiglobulin tests with 100% accuracy while recognizing and avoiding common pitfalls of technique. Utilize Coombs control cells and interpret correctly.
17. Perform and interpret routine ABO forward and reverse grouping and Rh(o) (D)/weak D(Du) testing with 100% accuracy.
18. Perform and antibody screen using commercially prepared cells with 80% accuracy.
19. Perform a routine cross match with 100% accuracy and determine if the unit can be safely transfused realizing when the pathologist should be consulted.

20. State the importance of quality assurance programs for blood banking and serology and perform routine procedures. Describe elements of a quality control program.
21. State the principle behind and make decisions when to use variety of elution and absorption techniques in blood banking. Evaluate elution and absorption techniques.
22. Perform and interpret routine cell panel for detection of red cell antibodies and be familiar with special techniques employed in antibody identification.
23. Perform and evaluate other (than ABO) blood group antigen typing (including additional Rh antigens).
24. Recognize discrepancies in ABO grouping and utilize basic problem solving skills to resolve these discrepancies.
25. Recognize incompatible results on cross matching procedures. Perform preliminary problem solving techniques to determine if said units could safely transfused. Follow SOP for dealing with incompatibilities.
26. Select appropriate blood group and type for a variety of blood components for transfusion therapy in routine and non-routine situations. State AABB appropriate handling and storage for the variety of blood products.
27. Determine the acceptability of blood donor, be familiar with processing of blood, appropriate testing and labelling once drawn.
28. Using DAT, ABO, Rh, and elution studies, perform cord blood workups and identify potential causes of Hemolytic Disease of the Newborn (HDN).
29. Perform and evaluate testing for administration of Rhogam.
30. Perform the functions of the clinical laboratory in the investigation transfusion complications.
31. State and follow established procedure for emergency transfusions.
32. Complete and maintain required blood banking records for accreditation, AABB inspection, federal guidelines.
33. Perform and interpret RPR testing for syphilis.
34. Describe routine procedures used in syphilis.
35. Outline procedures and given results interpret serological testing for hepatitis.
36. Perform and interpret rapid strep serological tests, be familiar with procedures for Antistreptolysin O titers, rapid cold agglutinin detection and cold agglutinin titers.
37. Be familiar with testing for Bacterial Agglutinations.
38. Perform and interpret serological tests for C-reactive protein, infectious mononucleosis, and rheumatoid arthritis.
39. Perform and interpret serological testing for pregnancy.
40. Outline procedures and given results interpret results from ANA testing.
41. Discuss antibodies detected in a variety of autoimmune diseases.
42. Perform and interpret fetal screening for fetal-maternal bleed. Calculate vials of Rhogam necessary to administer.
43. Demonstrate familiarity with serological rubella testing.
44. Articulate currently available methods for HIV testing.

Course Content	
10%	ABO Rh blood groups
10%	Antigen typing and antibody identification
10%	Serology
10%	Blood donor selection and testing
10%	Transfusion therapy and reactions
10%	Immune system overview (cells, basic functions, biochemical characteristics)
10%	Precipitation and agglutination techniques
10%	Cross matching, special tests and immunological reactions
10%	Immuno disorders and diseases
10%	Screening and testing methods (fetal specific as well as for various diseases)
Total: 100%	
Lab Content	
30%	ABO and Antibody ID
20%	Manual Methodologies in Immunohematology
20%	Specimen Acceptance and Rejection
10%	Automated Technologies
10%	Quality Control
10%	Instrument Maintenance and Repair
Total: 100%	
Methods of Evaluation	
Methods	• 30% - Final exam • 45% - Lab Reports Laboratory Assignments Lab Practical - Practicum style tests to show working knowledge of procedural tests • 5% - Other Core Abilities - lab skills/technique performance as assessed by instructor throughout course • 20% - Quizzes • 100% - Total
Methods of Presentation	
Methods	Lab Lecture and Discussion
Other Methods	Demonstration Case Studies Online modules either at http://www.medtraining.org/ or on eCompanion
Appropriate Textbooks	
Textbooks such as the following are appropriate:	

Formatting Style	APA

Textbooks

1. Kathy D. Blaney, MS, BB(ASCP)SBB and Paula R. Howard, MS, MT(ASCP)SBB. *Basic & Applied Concepts of Immunohematology*, 2nd ed. -, 2008, ISBN: 978-0-323-048.

1. Online MTS (Medical Training Solutions) modules at http://www.medtraining.org/ Provided by Medical Training Solutions, Inc., PO Box 17349, Seattle, WA 98127, site licenses will be purchased for students to be utilized either via eCompanion or on-campus in the Biology computer lab

Assignments

Sample Assignment

1. Online module: "Ordering and Administering" Student will access module content which includes images, video and text through http://www.medtraining.org/ and then complete the online module quizzes. Scores will then be recorded and transmitted to instructor. Upon successful completion of "Ordering and Administering" module, the student will be able to:
    1. List the steps required to correctly order blood products for transfusion.
    2. Identify basic blood products and explain indications for use
    3. Define Zero Tolerance Policy of patient identification during transfusion administration
    4. List the steps required to complete a bedside check of a patient receiving a blood transfusion
    5. Identify the steps to perform an evaluation of a blood product before transfusion.
    6. Recognize signs and symptoms of an adverse event during and following blood product administration
    7. Describe actions to perform if a transfusion reaction occurs
2. Case Study

Working in groups of 3 to 4, students will be presented with a case study that describes a brief medical scenario. Following the scenario will be related questions that the students will answer and then present the case study to the class. The following is an example of a possible case study.

A 22-year-old man with a history of allergic reactions to peanuts was admitted to our hospital in a coma. After inadvertently ingesting satay sauce, which contains peanuts, during a Chinese meal, he had become unwell and had had a cardiorespiratory arrest that resulted in cerebral anoxia, coma, and brain death. A high level of peanut-specific IgE was detected in his serum ... multiple organs were subsequently procured. The donor's HLA phenotype was A1,24;B8,44;DRB1*03,13.

...the donor's liver and right kidney were given in transplantation to a 35-year-old man, and the left kidney and pancreas were given to a 27-year-old woman. The man (HLA phenotype, A2,19;B12,- ;DRB1*07,13) had end-stage renal failure.... The woman (HLA phenotype, A1,24;B8,44;DRB1*03,04) had chronic renal failure....

Both transplant recipients received immunosuppressive induction therapy with muromonab-CD3 (OKT3) and corticosteroids, azathioprine, and cyclosporine. Neither had ever had any allergy to peanuts. Three months after transplantation, the recipient of the liver-kidney transplant reported a skin rash and laryngeal dyspnea after eating peanuts. Allergy to peanuts was diagnosed on the basis of the clinical findings; the absence of specific IgE antibodies before transplantation, their presence at the time the symptoms appeared, and their decline thereafter; and a positive basophil degranulation test.
Questions

1. What does HLA stand for? What is an HLA phenotype?
2. How does HLA relate to MHC in immune physiology?
3. Why is it important to understand the "HLA phenotypes" of the individuals in this case?
4. From what you know about the structure of an antibody, explain how an IgE can be "peanutspecific."
5. One way to test for an allergy is to mix a specific allergen with basophils and mast cells from a patient and look for "degranulation." What is occurring when these cells degranulate? How does this become a positive test for a specific allergy?
6. Why were the patients put on an immunosuppressive therapy after their transplantations?

Pre/Corequisites & Advisories

Prerequisite
MLT 1

Library

List of suggested materials has been given to librarian?	Yes
Library has adequate materials to support course?	Yes

Additional Comments/Information

Librarian Approval:
Carol Womack
Date:
10/25/2010

Student Learning Outcomes

1. State the principles of the common immunology/ serology assays performed in the immunology department of a clinical laboratory
2. Correlate an abnormal immunology/ serology test result with the appropriate disease or sets of common diseases
3. Evaluate the suitability of specimens submitted to the immunology department according to a specific criteria of specimen acceptance and rejection
Transfer/General Ed
IGETC Area:
Does NOT satisfy any area of IGETC:
CSU GE Area:
Does NOT satisfy any area of CSU GE:
SMC GE Area:
Does NOT satisfy any area of SMC GE:

Distance Ed **Distance Education Application**	
Delivery Methods	Online Hybrid (51% or more of course is held on-campus)
Distance Education Quality	
Quality Assurance	Course objectives have not changed Course content has not changed Method of instruction meets the same standard of course quality Outside assignments meet the same standard of course quality Serves comparable number of students per section as a traditional course in the same department Required texts meet the same standard of course quality
Additional Considerations	Evaluation methods are in place to produce an annual report to the Board of Trustee on activity in offering this course or section following the guidelines to Title 5 Section 55317 (see attachment) and to review the impact of distance education on this program through the program review process specified in accreditation standard 2B.2. Adequate technology resources exist to support this course/section Library resources are accessible to students Specific expectations are set for students with respect to a minimum amount of time per week for student and homework assignments Adequately fulfills ?effective contact between faculty member and student? required by Title 5. Will not affect existing or potential articulation with other colleges Special needs (i.e., texts, materials, etc.) are reasonable Complies with current access guidelines for students with disabilities
Guidelines and Questions for Curriculum Approval of a Distance Education Course	

Student Interactions	
Student-Instructor Interaction	The interaction between students and instructor online will be via email, discussion threads, and powerpoint lectures with designated assignments and objectives will be available on e-companion. The instructor will be available at specific block times during the week (3 days per week, 2 hours per session) for the students to interact and discuss concerns and questions with the instructor. The instructor will be available by email at all times.
Student-Student Interaction	Students will be required to interact online via discussion thread and facilitated group email discussions during the scheduled 3 times a week, 2 hour blocks of online class sessions. They will be required to attend these sessions and report their participation via submission of question and answer materials via email and/or discussion threads
Student-Content Interaction	The students will be able to access their powerpoint lecture materials as well as objectives and assignments for the course. They will also be required to access the socrative website via www.socrative.com to take their online quizzes for which immediate feedback is available. Access to the website is by instructor permission only and quizzes are timed. There will be weekly quizzes for this course. All exams will be administered on ground

Online class activities that promote class interaction and engagement	Brief Description	Percentage of Online Course Hours
Study and/or Review Sessions	Students will be given an online module for lectures and an accompanying study guide or assignment questions for which they can use their online lecture modules and/or textbook to answer the questions. These will be submitted to the instructor online via email for evaluation. In addition, students will be required to submit questions to the discussion thread at least 3 times a week and submit answers to questions posted by the instructor at least three times a week.	40%
Project Presentation	Students will be given group case studies for which they will be required to work in assigned groups. They will submit progress reports for their online group activities to discuss answers to the case study questions as well as the final diagnosis. They will be required to submit reports of their online interactions as well as an evaluation of each member of their team. There will be criteria on peer evaluation such as attendance of all live and/or	20%

	online meetings, and etc. Students will present their case studies on ground.	

Describe how content will be organized and delivered in the interest of achieving course outcomes/objectives (e.g. what are the methods of instruction being used, technologies used, approximate time schedule, necessary instructional materials.)
The content will be organized according to the textbook chapter presentation and references. The delivery of the content will be by the following methods: online lecture and assignment modules. Lectures will be presented by powerpoint and assignments will be posted per lecture module. In addition, students will also take a short online quiz following the lecture module. These will take approximately 45 minutes per chapter module. There will be a minimum of at least 2 such exercises per week. Technologies required would be student access to e-companion.
Describe the technical qualifications an instructor would need and the support that might be necessary for this course to be delivered at a distance (e.g. the college?s existing technology, CCCConfer certification, other specialized instructor training, support personnel, materials and resources, technical support, etc.)
The instructor would need to be trained to use and be supported by the college?s existing technology such as e-companion.
Describe any student support services one might want or need to integrate into the online classroom for this course (e.g. links to counseling, financial aid, bookstore, library, etc.)
Students will need to have access to online resources provided by the main textbook that we will be using and this needs to be integrated in the online materials used by the students.
Describe how the design of the course will ensure access for students with disabilities including compliance with the regulations of Section 508 of the Rehabilitation Act.
For any videos and demonstrations used online, captions will be provided to ensure access for all students
Using one of the course objectives, describe an online lesson/activity that might be used in the course to facilitate student learning of that objective. Be sure the sample lesson/activity includes reference to the use of online teaching tools (such as drop box or threaded discussion, or multimedia such as Articulate, Flash, Jing, etc.).
Course objective: Describe the ABO, Rh and other blood group antigens, relating methods for detecting and their clinical significance. Online lesson/activity used in the course: We will use a threaded discussion to facilitate learning and mastery of this objective. Students will be given problems so that they can identify various pairings and permutations of ABO, Rh, and other blood group antigens and discuss how they solved the problems online. They will be given the opportunity to ask questions, discuss, and check their answers after the discussion period.
Assessment Best Practices
30%-**Online lectures, assignments, and quizzes** - Students will be given regular assignments (at least twice per week) and they will be submitted to the instructor online. The instructors will then submit feedback within 24 hours of homework submission. Students will be given online quizzes for which the answers to the questions will be immediately available. This can be done through, for example, the Socrative website ?

www. socrative.com where the instructor can post quizzes, record quizzes that students have taken, and give students immediate feedback to the quizzes. The instructor will post daily questions/ topics relevant to the lecture material and students are required to participate via discussion threads posted on e-companion. They may also be required to post their own relevant questions and/topics that will require feedback from their classmates. Timed online quizzes bi-weekly quizzes will be given to students and immediate feedback will be available. These online quizzes are designed so that students are given access to the site by the instructor at specific times during the week. In addition, immediate feedback is available and quiz scores are recorded on the website for the instructor. Students may only take the quizzes once. We will be using the student learning outcomes as a guide to assess student learning via online interactions. Quiz questions will cover specific SLO topics to determine whether or not students are able to retain and apply the required information needed to be successful in the course.

Attached Files

No Files attached

Santa Monica College
Update (NEW/MODIFIED DE)
Expanded Course Outline for MLT 4 - Clinical Chemistry

Course Cover	
Discipline	MLT-Medical Laboratory Technician
Course Number	4
Full Course Title	Clinical Chemistry
Catalog Course Description	This course will discuss basic interpretations of biochemistry and the concentration of enzymes, carbohydrates, lipids, proteins, electrolytes, and blood gases. The need for drug testing and evaluation will also be a part of this curriculum. The student will perform routine clinical tests on biological fluids, maintain quality assurance records, and perform preventative maintenance on instrumentation. This course will utilize computer technology to enhance student learning.
Proposal Information	
Proposed Start	Year: 2013 Semester: Fall
Proposed for Distance Ed	Yes
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 5.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Weekly Laboratory Hours	Min: 6.00 (Sem: 108)
Weekly Arranged Hours	Min:
Total Semester Instructional Hours	162.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Minimum Qualification	
Minimum Qualifications:	No Minimum Qualifications For this Course

Program Applicability	
Designation	Credit - Degree Applicable
Proposed For	**AS Degree** -Medical Laboratory Technician

Course Objectives
Upon satisfactory completion of the course, students will be able to:
Regarding Clinical Chemistry, upon completion of the lecture portion of this course the student shall be able to:
1. Relate the proper specimen collection and handling, type of quality control used, reference ranges, principle of analysis currently available, and sources of analytical errors for each of the analytes discussed or approached in the course.
2. Outline the normal digestion, anabolism and catabolism of carbohydrates, proteins, and lipids within the body.
3. Discuss the basic principles of laboratory instrumentation and state how they relate to the measurement of serum or body fluid analytes.
4. Demonstrate an understanding of the mechanism by which the body regulates water and pH homeostasis.
5. Discuss the anatomy and physiology of the following organs or systems. State some of the common pathological states and what analyte measurements would be utilize to monitor the function of each: Renal, Cardiovascular, Hepatic, Thyroid, Bone, and Pancreatic.
6. List the reasons that therapeutic drugs are monitored and state the current drugs most often monitored and the procedure most often used.
Regarding Clinical Chemistry, upon completion of the laboratory portion of this course the student shall be able to:
1. Demonstrate the following skills as pertaining to each individual test that is listed. i. Relate the proper specimen collection and handling techniques. ii. Perform acceptable quality control measures iii. State if results are within reference range iv. State principle of analysis of method available v. State sources of error and methods to minimize or eliminate these errors. vi. Perform the analysis within +/- 2SD of the recognized mean for a control serum; Proteins, enzymes, electrolytes, carbohydrates, lipids, nonprotein nitrogen; Perform & Calculate: creatinine clearance, anion gap, osmolarity, dilutions, VLDL, LDL, Beers Law.
2. Explain the basic principles of laboratory instrumentation available in the clinical labs.
3. Perform routine preventative maintenance and troubleshooting procedures on the instruments available.
4. Determine if the results on different analytes are consistent as far as determining the status of the following organs or systems: Renal, cardiovascular, hepatic, pancreatic.

Course Content	
25%	Carbohydrates, Acid Base and Electrolytes
25%	Proteins and Other Nitrogen-Containing Compounds
25%	Enzymes, Lipids and Lipoproteins
25%	Special Chemistry (Endocrinology, Tumor Markers, TDM,

	Toxicology)
Total: 100%	
Lab Content	
10%	Laboratory Safety
30%	Pipetting Skills and Reagent Preparatin
20%	Quality Control
30%	Automated Instrumentation and Methodologies
10%	Computer Use for Instrumentation
Total: 100%	
Methods of Evaluation	
Methods	• 30% - Final exam • 45% - Lab Reports Laboratory Assignments Lab Practical - Practicum style tests to show working knowledge of procedural tests • 5% - Other Core Abilities - lab skills/technique performance as assessed by instructor throughout course • 20% - Quizzes • 100% - Total
Methods of Presentation	
Methods	Lab Lecture and Discussion
Other Methods	Demonstration Case Studies Online modules either at http://www.medtraining.org/ or on eCompanion
Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	APA
Textbooks	
1. Michael L. Bishop, Edward P. Fody, and Larry Schoeff. Baltimore, MD. *Clinical Chemistry: Principles, Procedures, Correlations*, 5th ed. Lippincott Williams & Wilkins, 2005, ISBN: 0-7817-4611-6.	
1. Online MTS (Medical Training Solutions) modules at http://www.medtraining.org/ Provided by Medical Training Solutions, Inc., PO Box 17349, Seattle, WA 98127, site licenses will be purchased for students to be utilized either via eCompanion or on-campus in the Biology computer lab	
Assignments	
Sample Assignment	
1. Online module: " Protein Electrophoresis" Student will access module content which includes images, video and text through	

http://www.medtraining.org/ and then complete the online module quizzes. Scores will then be recorded and transmitted to instructor. Upon successful completion of "Protein Electrophoresis" module, the student will be able to:

1. Describe the methods of agarose gel electrophoresis, immunofixation, CSF isoelectric focusing and densitometry.
2. Name the clinical conditions most commonly associated with monoclonal gammopathy, and some key clinical features of each condition.
3. View an agarose gel, an immunofixation, a densitometry, and determine if a monoclonal gammopathy is present. If it is present, the user will be able to identify the immunoglobulin type.
4. View an agarose gel of serum, urine, or an isoelectric focusing gel of cerebrospinal fluid and identify the electrophoresis pattern (e.g., inflammation, liver disease, hemolysis, alpha-1 antitrypsin deficiency, tubular proteinuria, CSF oligoclonal banding, etc). Online exercise has an Exam following the content.

2. Online module: "Cardiac Markers" Student will access module content which includes images, video and text through http://www.medtraining.org/ and then complete the online module quizzes. Scores will then be recorded and transmitted to instructor. Upon successful completion of "Cardiac Markers" module, the student will be able to:
    1. Describe basic cardiac anatomy, physiology, and direction of coronary blood flow
    2. Correlate the electrical activity of the heart with coronary blood flow
    3. Define the terms: angina, ischemia, cardiovascular disease, and coronary artery disease
    4. List the symptoms of ischemia
    5. Describe the pathophysiology of coronary artery disease, acute coronary syndrome, acute myocardial infarction, and heart failure
    6. List the criteria for diagnosing an acute myocardial infarction
    7. List the causes and symptoms of heart failure
    8. Identify the current biomarkers of acute myocardial infarction
    9. Identify the current biomarker for heart failure
    10. Discuss the Framingham Score, including risk factors used in the calculation
    11. Identify biomarkers of coronary risk assessment
3. Case Study

Working in groups of 3 to 4, students will be presented with a case study that describes a brief medical scenario. Following the scenario will be related questions that the students will answer and then present the case study to the class. The following is an example of a possible case study.

A 31-year-old woman was admitted into a regional hospital for abdominal pain, decreased appetite, malaise, confusion, and tea-colored urine. Investigations showed acute liver failure with a markedly decreased liver function characterized by greatly

increased aminotransferases, bilirubin concentration, prothrombin time and international normalized ratio. There was no history of liver disease or intake of herbal medicines or over-the-counter medications. Her condition worsened 2 days later, and she was transferred to our hospital for further management and the possibility of liver transplantation. A physical examination revealed a jaundiced woman in a fair general condition and with a soft but tender right upper quadrant with no guarding or rebound tenderness of the abdomen. She went into a semicomatose state 1 day later. Routine laboratory testing of a blood sample obtained on her arrival in the hospital revealed the following results: bilirubin, 1210 μmol/L (reference interval, 7–19 μmol/L); alanine aminotransferase, 6170 U/L (reference interval, 5–31 U/L); aspartate aminotransferase, 5080 U/L (reference interval, 12–28 U/L); alkaline phosphatase, 150 U/L (reference interval, 34–104 U/L); ammonia, 171 μmol/L (reference interval, 0–33 μmol/L); lactate dehydrogenase, 6830 U/L (reference interval, 200–360 U/L); prothrombin time, 39.7 s (reference interval, 11.3–13.2 s); international normalized ratio, 3.3; acetaminophen, 121 μmol/L (therapeutic up to 100 μmol/L). Other results were unremarkable. A serologic evaluation was negative for hepatitis A and B. The plasma acetaminophen concentration prompted the clinical suspicion of drug overdose, but she denied taking acetaminophen. The patient's liver enzymes, prothrombin time, international normalized ratio, and acetaminophen concentrations were monitored on subsequent days. Her general condition and liver function gradually improved, but her plasma acetaminophen concentration remained >100 μmol/L. Failure of the liver to metabolize the drug was suspected, and liver transplantation was contemplated at that juncture.

1. What are the common causes of acute liver failure?
2. What is the usual pharmacokinetic pattern of acetaminophen after ingestion, and how does overdose cause liver injury?
3. What methods are available to measure acetaminophen concentrations?
4. What factors interfere with acetaminophen measurement?

Pre/Corequisites & Advisories

Prerequisite
MLT 1

Library

List of suggested materials has been given to librarian?	Yes
Library has adequate materials to support course?	Yes
Additional Comments/Information	
Librarian Approval: Carol Womack	

Date: 10/25/2010
Student Learning Outcomes
1. Evaluate suitability of clinical chemistry specimens according to the criteria of acceptance and rejection.
2. Prepare chemistry specimens for analysis.
3. Recognize normal chemistry test results and correlate abnormal results with the correct disease.
Transfer/General Ed
IGETC Area:
Does NOT satisfy any area of IGETC:
CSU GE Area:
Does NOT satisfy any area of CSU GE:
SMC GE Area:
Does NOT satisfy any area of SMC GE:
Distance Ed **Distance Education Application**

Delivery Methods	Online Hybrid (51% or more of course is held on-campus)
Distance Education Quality	
Quality Assurance	Course objectives have not changed Course content has not changed Method of instruction meets the same standard of course quality Outside assignments meet the same standard of course quality Serves comparable number of students per section as a traditional course in the same department Required texts meet the same standard of course quality
Additional Considerations	Evaluation methods are in place to produce an annual report to the Board of Trustee on activity in offering this course or section following the guidelines to Title 5 Section 55317 (see attachment) and to review the impact of distance education on this program through the program review process specified in accreditation standard 2B.2. Adequate technology resources exist to support this course/section Library resources are accessible to students Specific expectations are set for students with respect to a minimum amount of time per week for student and homework assignments Adequately fulfills “effective contact between faculty member and student” required by Title 5. Will not affect existing or potential articulation with other colleges Special needs (i.e., texts, materials, etc.) are reasonable Complies with current access guidelines for students with disabilities
Guidelines and Questions for Curriculum Approval of a Distance Education Course	

Student Interactions	
Student-Instructor Interaction	The interaction between students and instructor online will be via email, discussion threads, and powerpoint lectures with designated assignments and objectives will be available on e-companion. The instructor will be available at specific block times during the week (3 days per week, 1 hour per session) for the students to interact and discuss concerns and questions with the instructor. The instructor will be available by email at all times and have additional office hours for in-person/ on-campus meetings.
Student-Student Interaction	Students will be required to interact online via discussion thread and facilitated group email discussions at least 3 times per week at their own time. They will be required to submit questions, respond to relevant questions posted by the instructor and/or other students, and comment on topics and ideas presented. These interactions will be tracked by the instructor to document their online participation in the discussions.
Student-Content Interaction	The students will be able to access their powerpoint lecture materials as well as objectives and assignments for the course. They will also be required to access the socrative website via www.socrative.com to take their online quizzes for which immediate feedback is available. Access to the website is by instructor permission only and quizzes are timed. There will be weekly quizzes for this course. All exams will be administered on ground. Each chapter lecture module will have a homework assessment included that has an estimated time of 45 minutes to an hour to complete. They will have at least 4 such modules during the week.

Online class activities that promote class interaction and engagement	Brief Description	Percentage of Online Course Hours
Study and/or Review Sessions	Course component: Powerpoint lectures/ Study and/ or Review Sessions Students will be given an online module for lectures and an accompanying study guide or assignment questions for which they can use their online lecture modules and/or textbook to answer the questions. These will be submitted to the instructor online via email for evaluation. In addition, students will be required to submit questions to the discussion thread at least 3 times a week and submit answers to questions posted by the instructor at least three times a week	20%

Describe how content will be organized and delivered in the interest of achieving course outcomes/objectives (e.g. what are the methods of instruction being used, technologies

used, approximate time schedule, necessary instructional materials.)
The content will be organized according to the textbook chapter presentation and references. The delivery of the content will be by the following methods: online lecture and assignment modules. Lectures will be presented by powerpoint and assignments will be posted per lecture module. In addition, students will also take a short online quiz following the lecture module. These will take approximately 45 minutes per chapter module. There will be a minimum of at least 4 such exercises per week. Technologies required would be student access to e-companion.
Describe the technical qualifications an instructor would need and the support that might be necessary for this course to be delivered at a distance (e.g. the college's existing technology, CCCConfer certification, other specialized instructor training, support personnel, materials and resources, technical support, etc.)
The instructor would need to be trained to use and be supported by the college's existing technology such as e-companion.
Describe any student support services one might want or need to integrate into the online classroom for this course (e.g. links to counseling, financial aid, bookstore, library, etc.)
Students will need to have access to online resources provided by the main textbook that we will be using and this needs to be integrated in the online materials used by the students.
Describe how the design of the course will ensure access for students with disabilities including compliance with the regulations of Section 508 of the Rehabilitation Act.
For any videos and demonstrations used online, captions will be provided to ensure access for all students.
Using one of the course objectives, describe an online lesson/activity that might be used in the course to facilitate student learning of that objective. Be sure the sample lesson/activity includes reference to the use of online teaching tools (such as drop box or threaded discussion, or multimedia such as Articulate, Flash, Jing, etc.).
Course Objective: Fill in the appropriate chemical reaction, anatomical location, and/ or the appropriate by-product of a chemical reaction relevant to the conjugation of bilirubin in events of intravascular or extravascular hemolysis. Online/ lesson activity in the course: We would be using Flash multimedia technology to aid the students in understanding the sequential process of bilirubin conjugation. There is an online module that allows the students to practice memorizing the sequence as well as specific chemical reactions and anatomical locations and byproducts of reactions.

PROGRAM OF STUDY

DATABASE APPLICATIONS DEVELOPER Associate in Science (AS)

A Database Applications Developer develops user-friendly interfaces to database applications. A database application is made of data, a database engine to store the data, and an interface to extract and display the data. The skills needed to build a database application range from database theory and design, using a database engine such as SQL server, or Oracle, to programming in ADO technologies to extract the data, as well as programming in Windows and Web applications on a client and server-side basis to present the data. In addition, with increasing concerns over security, a database developer must also be able to write secure code that runs with minimum risk of attacks.

Required Courses (27 units):

CS 3	Introduction To Computer Systems	3
CS 9A	Technology Project Management I	3
CS 15	Visual Basic Programming	3
CS 19	Advanced Visual Basic Programming	3
CS 32	Database Programming In Visual BasicNet	3
CS 37	Web Programming In Vb Net	3
CS 60	Database Concepts And Applications	3
CS 61	Microsoft Sql Server Database	3
CS 65	Oracle Programming	3

Select two of the following courses (6 units):		**Units**
CS 8	Systems Analysis And Design	3
CS 9B	Technology Project Management Ii	3
CS 84	Programming With Xml	3
CS 85	Cs 85 Php Programming	3
CS 86	Android Development	3
CS 87	Python Programming	3

Total Units **33**

PID 162

PROGRAM OF STUDY (Updated 3/14/14)

WEB PROGRAMMER Associate in Science (AS)

Web Programmer designs and develops applications and scripts for the World Wide Web (WWW). Web programmers need to be knowledgeable on a variety of Internet technologies (HTML, CSS, XML, JavaScript, Perl/CGI, Java, JSP,PHP, and the Microsoft .Net platform), networking, and database management. They are chiefly responsible for providing the programming which makes Web pages interactive or allows users to interact with back-end applications and databases. Web programmers are instrumental in making electronic commerce on the Internet possible.

Required Courses (18 units):

CS 3	Introduction To Computer Systems	3
CS 60	Database Concepts And Applications	3
CS 70	Network Fundamentals And Architecture	3
CS 80	Internet Programming	3
CS 81	Javascript And Dynamic HTML	3
CS 84	Programming With Xml	3

Select one of the following pairs (series) of courses (6 units):		**Units**
Course Series 1:		
CS 15	Visual Basic Programming **and**	3
CS 19	Advanced Visual Basic Programming	3
	or	
Course Series 2:		
CS 55	Java Programming **and**	3
CS 56	Advanced Java Programming	3
	or	
Course Series 3:		
CS 87	Python Programming **and**	3
CS 15	Visual Basic Programming **or**	3
CS 19	Advanced Visual Basic Programming **or**	3
CS 55	Java Programming **or**	3
CS 56	Advanced Java Programming	3

Select one of the following courses (3 units):		**Units**
CS 32	Database Programming In Visual BasicNet	3
CS 61	Microsoft Sql Server Database	3
CS 65	Oracle Programming	3

Select one of the following courses (3 units):

CS 37	Web Programming In Vb Net	3
CS 82	AspNet Programming In C	3
CS 83	Server-Side Java Web Programming	3
CS 85	Cs 85 Php Programming	3

Total Units **30**

PID 163