MATHEMATICS

LONG BEACH CITY COLLEGE
Curriculum Guide for Academic Year of 2009-2010
Associate in Science

ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE.

For possible updates to this guide please refer to the following website: http://osca.lbcc.edu

CAREER OPPORTUNITIES

This field of concentration is designed to recognize competency in mathematics at a postsecondary level. It partially fulfills the requirements for transfer with junior standing for students majoring in mathematics and related fields having significant mathematical content.

This Associate Degree will facilitate transfer for a four-year degree.

DEPARTMENTAL ADMISSION REQUIREMENTS

None. For more departmental information call (562) 938-4168 or 938-4428.

REQUIRED COURSES		UNITS	In Progress	Completed Grade
†* ENGL 1	Reading and Composition	4		
† MATH 60	First Calculus Course	5		
† MATH 70	Second Calculus Course	5		
† MATH 80	Third Calculus Course	5		
† MATH 84	Intro Differential Eqns. and Linear Alg. (SP)	4		
† PHYS 3A	Physics for Sci. & Engr. - Mechanics	5		
Subtotal Units		**28**		

Select *TWO* of the following:

		UNITS	In Progress	Completed Grade
† BIO 1A	Biology for Science Majors	5		
† BIO 1B	Biology for Science Majors	5		
† CHEM 1A	General Chemistry	5		
† CHEM 1B	General Chemistry	5		
ECON 1A	Macro Economic Analysis	3		
ECON 1B	Micro Economic Analysis	3		
GEOL 2	General Geology, Physical	3		
GEOL 3	Historical Geology	3		
GEOL 5	Environmental Geology	3		
† PHYS 3B	Physics for Sci. & Engr. – E & M	4		
† PHYS 3C	Physics for Sci. & Engr. – Modern Physics	4		
Subtotal Units		**6-10**		

Select *ONE* of the following:

		UNITS	In Progress	Completed Grade
† CS 11	Computer Programming/C++I	3.5		
† ENGR 54	Computer Methods /C++	3		
Subtotal Units		**3-3.5**		
TOTAL UNITS		**37-41.5**		

LEGEND

† This course has a prerequisite; prerequisite courses must be completed with at least a "C" or "P" grade (see catalog or schedule of classes).
*This course is an exception to the "double-counting" rule; it _may_ be double-counted.
(SP = Spring) (S = Summer) (F = Fall) (INF = Infrequently) = Represents general frequency of course offering

NOTE: A student must meet all prerequisites that make one eligible for a sequence of courses. Prerequisites are evaluated in the Admissions Office.

GRADUATION REQUIREMENTS

For **ASSOCIATE IN SCIENCE DEGREE**:
Complete the required units listed above with a minimum grade of "C" in each course. In addition, complete the A.S. degree requirements specified in the Catalog. The requirements for general education/proficiency and the field of concentration need to be from the same catalog year. This catalog year may be any year between the year of initial enrollment to the present, provided continuous enrollment is maintained throughout (see the catalog for definition of "continuous enrollment"). 12 units (per Community College) or more of the unit requirements for this field of concentration must be completed in residence (credit earned by exam, where applicable, may be included).

NOTE: To receive a degree you must submit completed application forms in the Admissions and Records Office during your final semester of course work.

In general, "double-counting" is not allowed. That is, one course may not be used to fulfill both a field of concentration requirement and to fulfill a general education requirement.

SUGGESTED SEQUENCE OF COURSES

This is not an educational plan, as course offerings, student schedules, and circumstances vary. Students must meet all the prerequisites in order to be eligible for the sequence of courses.

A suggested full-time sample sequence of courses for the required 60 units to reach an Associate Degree includes:

Summer Before First Semester
If necessary, prerequisite courses in math and/or English.

First Semester		Second Semester	
† MATH 60	5 Units	† MATH 70	5 Units
† ENGR 54	3	† PHYSICS 3A	5
†*ENGL 1	4	G.E. Course	3
G.E. Course	3		
Semester Total	**15 Units**	**Semester Total**	**13 Units**

Third Semester		Fourth Semester	
† MATH 80	5 Units	† MATH 84	4 Units
† PHYSICS 3B or CHEM 1A or BIO 1A	4-5	† PHYS 3C or CHEM 1B or BIO 1B	4-5
G.E. Course	3	G.E. Course	3
G.E. Course	3	G.E. Course	3
Semester Total	**15-16 Units**	**Semester Total**	**14-15 Units**

LEGEND
† **This course has a prerequisite; prerequisite courses must be completed with at least a "C" or "P" grade (see catalog or schedule of classes).**
***This course is an exception to the "double-counting" rule; it <u>may</u> be double-counted.**

Students interested in transferring to a university to continue their study in this field of concentration or other majors are strongly advised to consult an LBCC academic counselor and refer to the ASSIST website (www.assist.org) for major preparation information. Counselors can clarify the different major and admissions requirements at a university. Students may visit the Student Success/Transfer Services Center to access further educational resources. If you need to set up an appointment to see a counselor or schedule the SOAR Test, call LAC (562)938-4561 or PCC (562)938-3920.