



Biology Program Review 2008-2009

Fall 2008

Prepared by

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Biology Program Review Committee Members

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June Han	Faculty
Greg Johansen	Faculty
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1. Faculty

Full-Time Faculty

Robert Goodman
Glenn Gorelick
June Han
Dana Hester
Greg Johansen
Arnold Kondo
Scott Mondrala
Eric Rabbitoy

Adjunct Faculty

Algie Au
Bruce Burkemper
Patricia Chapman
Desiree Crow
Stephanie Dingwall
Jonathan Fowler
June Han
Monica Lee
Dale McCabe
Scott Mondrala
Valerie Narey
Vicky Ng
Raymond Oropeza
Marcello Pires
Diane Purves
Eric Rabbitoy
Jeronimo Ribaya
Eleanor Tsark

2. List of Certificates/Awards Offered

none

3. List of Degrees

A.S. - Biological and Physical Sciences (and Mathematics)
1 pending approval (A.S. - Biological Science)

4. List of Industry-Based Standard Certificates

none

5. Advisory Committee

none

6. Sequence of Courses

Subject & Course No.	Title	Units
Biol 100	Introductory Biology	3
Biol 104	Biology: Contemporary Topics	3
Biol 105	General Biology	4
Biol 109	Biology for Educators	4
Biol 116	HIV/AIDS: Insights and Implications	3
Biol 124	Principles of Biology I	5
Biol 125	Principles of Biology II	5
Biol 145	Environmental Science	3
Biol 200	Human Anatomy	4
Biol 201	Physiology	4
Biol 210	Nutrition	3
Biol 220	Microbiology	5

Classes not offered in the last two years:

Subject & Course No.	Title	Units
Biol 095	Pre-Collegiate Science Methodology	3
Biol 105H	General Biology Honors	4

7. Institutional Competencies

The Biology Program has adopted the Institutional General Education Competencies of Citrus College. The General Education Competencies (as set forth in the Academic Senate minutes dated August 25th 2004) are as follows:

Institutional General Education Competencies- Part of Institutional Mission

General education competencies serve as a common set of core curricular components identified and defined by faculty. Student learning outcomes are behaviors based on these competencies.

Any student transferring, completing a degree or certificates from Citrus College, must demonstrate effectively assessed awareness, understanding, knowledge, skills, and abilities in the selected competencies.

1. Communication (personal expression and information acquisition)
Examples
Reading analytically and critically
Writing with clarity and fluency
Speaking articulately
Listening actively

2. Computation
Examples
Technology
Math proficiency
Analyzing and using numerical data
Application of mathematical concepts and reasoning
Computer proficiency
Decision analysis
(Synthesis and evaluation)

3. Creative, Critical, and Analytical Thinking
Examples
Curiosity
Analysis
Synthesis
Evaluation
Creativity
Research
Learning Strategies
Problem Solving
Decision making
Aesthetic awareness

4. Community, Critical, and Analytical Thinking
Examples
Respect for others beings
Cultural awareness
Ethics
Community service
Integrity
Citizenship
Interpersonal skills
Lifelong learning
Self esteem
Empathy

5. Technology/information competency
Examples
Basic computing and word processing

6. Discipline/Subject area specific content material - Project Plan
Course outlines of record detail specific outcome objectives for each content area.

8. Program Description / Mission

The mission of the Biology Program is to provide general, lower division coursework leading to an associate degree; to prepare students to transfer to four-year institutions and allied health programs and; to develop a better understanding of the natural processes that occur on the earth.

The program offers twelve courses covering natural and life sciences; seven courses have a lab component. Many of these courses are directed at students who need a general education life science course for transfer and/or associates degrees, allied health preparation, teacher preparation, and biology major's preparation.

Class offerings are available in the evenings and online for students who cannot attend classes during the day. Some courses are offered in a hybrid format with labs and discussion sections administered on campus. Additional lecture-based courses are offered in an online format. In addition, traditional sections of all courses are offered in late afternoons and/or evenings.

The department has a commitment to outreach in the local community by encouraging elementary and secondary students to participate and appreciate scientific inquiry.

9. Program Goals

The goals of the Biology Program are to:

- a) Provide general education science courses for transfer credit to four-year institutions.
- b) Provide science courses that prepare students for allied health programs.
- c) Provide science courses that prepare students for majors in Biology.
- d) Provide science courses that prepare students for careers in teaching.
- e) Meet the student learning outcomes and core competencies institutionalized by Citrus College.
- f) Provide general natural science knowledge and skills for students.
- g) Provide general education science courses required for students to complete an associate's degree.
- h) Participate in outreach in the local community by encouraging elementary and secondary students to participate and appreciate scientific inquiry.

10. Program Student Learning Outcomes

General education competencies serve as a common set of core curricular components identified and defined by faculty. Student learning outcomes are behaviors based on these competencies.

Any student transferring, completing a degree or certificate from Citrus College, must demonstrate effectively assessed awareness, understanding, knowledge, skills, and abilities in the selected competencies.

Students completing courses in the Biology Program will have acquired the following competencies:

1) Communication (personal expression and information acquisition)

- a) Demonstrate an understanding of biological concepts through written and/or oral assignments and activities.
- b) Acquire scientific information from multiple sources including textbooks, the Internet, personal communication with professionals in the field, educational computer software assessed through papers, homework, and/or oral assignments and activities.

2) Computation

- a) Estimate and/or calculate the characteristics of biological systems and demonstrate an understanding of these calculations in order to better understand the natural processes that produce these characteristics assessed through quizzes, exams, and other related assignments.

3) Creative, Critical, and Analytical Thinking

- a) Develop an understanding of relevant biological processes as well as processes from related sciences (e.g. physics, geology, chemistry) and apply these processes to predict the properties of biological systems.

4) Community/Global Consciousness and Responsibility

- a) Examine how human activity has contributed to positive and negative changes in the environment to better understand and discuss past, current, and future environmental issues through group discussions and examinations.

5) Technology

- a) none

6) Discipline / (Subject Area Specific Content Material)

- a) none

7) Information Competency

- a) none

8) Other

- a) none

11. Course Student Learning Outcomes & Assessment Timeline

The Biology Program is building student learning outcomes (SLOs) for all biology courses offered at Citrus College according to an on-going review and progress schedule. All new classes offered will have SLOs developed when the class is first offered. The

department will work with the SLO and Curriculum committees to ensure course outlines are being created according to the standards established by the committees.

Subject & Course	Title	Completion date
Biol 100	Introductory Biology	SLOs complete
Biol 104	Biology: Contemporary Topics	SLOs complete
Biol 105	General Biology	3 rd cycle in progress
Biol 109	Biology for Educators	1 st cycle complete
Biol 116	HIV/AIDS: Insights and Implications	SLOs complete
Biol 124	Principles of Biology I	1 st cycle complete
Biol 125	Principles of Biology II	1 st cycle in progress
Biol 145	Environmental Science	1 st cycle complete
Biol 200	Human Anatomy	1 st cycle in progress
Biol 201	Physiology	1 st cycle in progress
Biol 210	Nutrition	SLOs complete
Biol 220	Microbiology	1 st cycle complete

12. Evaluation Criteria – Mission

Commendations

- a) This program conforms with the District mission to provide transfer and associate degree courses.
- b) Distance Education offerings have been expanded to include four courses.
- c) In light of the recent increased student demand for allied-health related courses, enrollment opportunities have been increased in pre-requisite preparation courses such as Human Anatomy, Physiology, and Microbiology.
- d) Promotional material for the division website has been completed.
- e) The general education transfer Biology 105 course is the first to fill. The department has recently expanded enrollment opportunities in this course based on student need.
- f) Given the implementation of new accreditation standards for learning outcomes, the Biology faculty have met and developed outcomes and assessments in each course within the department's offerings.
- g) The department has developed a teacher preparation course to help students prepare for the CSET and multiple-subject teaching credential.
- h) The department has designed and implemented outreach programs for local school districts that include science fair organization, a summer GATE program, open house for potential incoming freshman, and a science co-op between Duarte high school students and Human Anatomy and Physiology courses on campus.
- i) The program faculty participated in writing two STEM (Science, Technology, Engineering, and Math) grants. Funding from these grants will help to enhance the pathway between high school, community college, and four-year institutions in STEM-related fields. Both grants were recently approved and funded for the first year.
- j) The program has identified and submitted an Associate's Degree in Biology to the Curriculum Committee.

Previous Recommendations Completed

- a) Biology 105 enrollment patterns were evaluated by faculty and recommendations about expanding the lecture and lab course offerings were made.
- b) The biology majors sequence was evaluated and a recent recommendation to change the pre-requisite to Math 150 was adopted to increase accessibility to Biology 124 and Biology 125.
- c) The biology faculty decided against the employment of standardized exit assessment tools in Biology 104 and Biology 105.

Recommendations

- a) Faculty should continue to evaluate enrollment patterns in Biology 105 to determine if adequate numbers of students are being served.
- b) Faculty should continue to evaluate the majors' program to insure adequate access to the student population.
- c) Faculty should continue to evaluate the allied health pre-requisite program to insure adequate access to the student population.

- d) Faculty should continue to evaluate the teacher preparation program to insure adequate access to the student population.
- e) Given the implementation of new accreditation standards for learning outcomes, faculty in the department should meet and discuss outcomes assessment data in each course within the program's offerings.
- f) Faculty should pursue employment of multi-media instruction in laboratory sections.

13. Evaluation Criteria – Need

Commendations

- a) This program currently provides courses that meet the needs of students as stated in the mission statement.
- b) The department has continually revised departmental curriculum to assure that it meets the needs of students.
- c) Many instructors in the department maintain Blackboard as a support to their traditional lectures.
- d) The department is working to create a department webpage that will include links to all instructors' courses and personal webpages.
- e) Many program faculty have participated in outreach to our local elementary, middle, and high schools through open house, co-op experiences, a GATE science program, and science fairs.

Previous Recommendations Completed

- a) Biology faculty evaluated the need for weekend course offerings and did not find the need to be significant.

Recommendations

- a) The Biology Department should continue to develop instructor webpages to enhance the instructional program's webpage.
- b) Faculty should continue to evaluate the effectiveness of the instructional program via comparative data on student success in traditional and distance education courses.
- c) Faculty should discuss and respond to assessment data for all courses.
- d) Faculty should continue to meet and discuss the development of our STEM programs.
- e) Faculty should continue to develop and/or enhance our outreach programs.

14. Evaluation Criteria – Quality

Commendations

- a) Transfer credits for courses in this program are accepted by UCs, CSUs, and private four-year institutions.

- b) The faculty in this program have worked together establishing student learning outcomes and assessments, grading standards, electronic support for lecture and laboratory courses, and critical thinking components for all biology classes.
- c) Biology faculty are actively involved in campus and statewide dialogues regarding transfer, student success (basic skills), student learning outcomes, and assessment strategies. Biology faculty meet with other faculty from across campus to provide support as they develop assessments.
- d) The program strives to promote transfer of students in the allied health and biology majors tracks.
- e) The program faculty actively meet with local four-year institution (Azusa Pacific University and University of LaVerne) faculty to discuss 2+2+2 articulation agreements.
- f) The program faculty recently participated in a successful application for a STEM grant. Funds from the grant will allow the department to procure cutting edge equipment and technology which will facilitate the success of our students.
- g) Active involvement of program faculty within the discipline enhances the quality of instruction.
- h) According to program indicator data, success and retention rates in program courses have increased dramatically in recent years.

Previous Recommendations Completed

- a) An additional full-time faculty member was hired after the last statewide budget crisis was averted and funding was restored. This position replaced a retirement.
- b) Courses that were heavily affected by budget cuts in laboratory class sections were expanded to pre-budget crisis levels.

Recommendations

- a) Statewide budget cuts will have a dramatic impact on all campus activities. As funds are restored, additional full-time faculty positions should be filled (one of our full-time faculty has assumed the position of Dean, and this position needs to be filled). The department has also seen a significant growth in course offerings. According to the most recent FTEF number (8.65 - Fall, 2007 and 10.73 - Spring, 2008), the program should be increased by at least two faculty (the program currently has six full-time faculty).
- b) The program has significantly expanded course offerings and lab technical support has not grown at the same rate. The program currently has one full-time and one 49% lab technician positions. In order to maintain our current offerings or to grow, the program needs to have an additional full-time lab technician.
- c) The program will monitor additional lab technician needs on an annual basis.
- d) The program is interested in pursuing the pairing of a non-majors biology course with a student success (basic skills) course; this partnership is called a learning community. The program needs to determine through research which partnership is most applicable.

15. Evaluation Criteria – Feasibility

Commendations

- a) Biology faculty members continue to incorporate technology into the instructional program.
- b) Faculty conduct necessary group study sessions for major assessment events.
- c) Funds from the STEM grant will be used to develop several programs aimed at enhancing the pathway from entry to transfer for all science students.
- d) The Biology Department wrote and published their own Biology 105 laboratory manual used by over 1,000 students a year. The manual is updated and edited approximately once every 3 years.

Previous Recommendations Completed

- a) The faculty in the program have developed a plan for increased use of media in the laboratory environment. Hardware needs ranged from a high-cost full AV/Smart panel installation in each of the five lab rooms to two, much lower cost, portable projection video systems on carts with support computers and access ports to the network in each lab room. Four lab rooms have been fully outfitted with the AV smart panels and one lab is fully equipped with eight internet accessible Physiology work stations.
- b) Updated tutorial software was purchased and installed in the computer labs.

Recommendations

- a) New laboratory space must be added to allow growth of biology programs. Some of the space will be used for the storage of laboratory equipment and specimens including human cadavers.
- b) Continued upgrade of laboratory equipment to facilitate participation of students in all laboratory activities.
- c) Continued upgrade of laboratory equipment to allow preparation of labs.

16. Evaluation Criteria – Compliance

Commendations

- a) With the help of Lynn Olson, lab technician for the program, a safety guideline contract is distributed to all students at the beginning of every laboratory course.
- b) Students are required to wear appropriate safety equipment during every laboratory exercise.
- c) The program evaluated preserved specimens for compliance with OSHA standards and properly disposed of specimens that posed a safety hazard.
- d) Program faculty and staff have been trained in the proper use of fire extinguishers by the local fire department.

Previous Recommendations Completed

- a) no previous recommendations

Recommendations

- a) no recommendations

17. Appendix A: Program Performance Indicators

Key Performance Indicator	FA 02	FA 03	FA 04	FA 05	FA 06	FA 07
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Program Access						
Majors (total)						
New Majors						
Courses Offered (total # of courses)	11	7	7	8	8	8
Classes Offered (total # of sections)	49	44	44	47	55	62
Morning (Prior to 11:59AM)	21	21	21	21	24	32
Afternoon (12:00 to 4:29PM)	10	13	13	14	18	14
Evening (4:30PM or Later)	14	8	8	10	12	13
Arranged Hour	4	2	2	2	1	3
Weekend						
Short term	1		1	1	7	1
Distance Education (full term)	3	3	3	3		3
Distance Education (short term)	2				1	
Enrollment	930	921	945	965	1,086	1,895
Weekly Student Contact Hours (WSCH)	4,159.7	4,935.0	5,000.4	5,250.4	5,931.4	6,274.3
Full-Time Equivalent Students (FTES)	142.3	169.2	171.4	180.0	203.4	189.0
Program Resources						
Full-Time Equivalent Faculty (FTEF)	15.93	14.96	14.91	15.99	18.69	10.09
Credit Reimbursement Rate	\$2,850.73	\$2,790.53	\$2,922.30	\$3,259.71	\$3,476.34	\$4,367.00
Program Operation						
WSCH/FTEF	261.1	329.9	335.4	328.4	317.4	621.8
FTES/FTEF	8.9	11.3	11.5	11.3	10.9	18.7
Fill rate at Census	39.9	47.4	47.4	48.0	43.2	88.7
Program Success						
Error! Hyperlink reference not valid.	53%	55%	58%	56%	60%	61%
Retention Rate	84%	88%	88%	87%	87%	93%

Key Performance Indicator	FA 02		FA 03		FA 04		FA 05		FA 06		FA 07	
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
Student Demographic Data												
	#	%	#	%	#	%	#	%	#	%	#	%
Gender												
Female	578	62%	564	63%	562	60%	576	63%	646	61%	728	61%
Male	349	38%	332	37%	374	40%	336	37%	410	39%	470	39%
Missing											3	0%
Total	927	100%	896	100%	936	100%	912	100%	1056	100%	1201	100%
Age												
19 or younger	232	25%	208	23%	241	26%	224	25%	265	25%	305	25%
20-24	434	47%	481	54%	473	51%	470	52%	549	52%	611	51%
25-29	117	13%	87	10%	106	11%	107	12%	118	11%	129	11%
30-34	68	7%	48	5%	43	5%	34	4%	45	4%	68	6%
35-39	32	3%	27	3%	23	2%	38	4%	34	3%	36	3%
40-49	26	3%	31	3%	41	4%	32	4%	33	3%	35	3%
50 and above	17	2%	14	2%	9	1%	7	1%	12	1%	17	1%
Missing	1	0%										
Total	927	100%	896	100%	936	100%	912	100%	1056	100%	1201	100%
Ethnicity												
Asian	151	16%	128	14%	159	17%	184	20%	166	16%	184	15%
African American	40	4%	49	5%	44	5%	39	4%	48	5%	54	4%
Hispanic	340	37%	326	36%	365	39%	347	38%	421	40%	463	39%
Native American/Alaskan Native	8	1%	13	1%	5	1%	7	1%	4	0%	12	1%
Other	19	2%	19	2%	14	1%	21	2%	24	2%	23	2%
Caucasian	331	36%	322	36%	305	33%	276	30%	352	33%	378	31%
Decline to State	33	4%	30	3%	40	4%	34	4%	34	3%	53	4%
Missing	5	1%	9	1%	4	0%	4	0%	7	1%	34	3%
Total	927	100%	896	100%	936	100%	912	100%	1056	100%	1201	100%
Educational Goal												
Degree/Cert/Transfer	865	93%	838	94%	854	91%	846	93%	990	94%	218	18%
Career/Ed Development	20	2%	18	2%	21	2%	19	2%	9	1%	30	2%
Improve Basic Skills											1	0%
Undecided											27	2%
Unknown	42	5%	40	4%	61	7%	47	5%	57	5%	925	77%
Total	927	100%	896	100%	936	100%	912	100%	1056	100%	1201	100%

Key Performance Indicator	SP 03	SP 04	SP 05	SP 06	SP 07	SP 08
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Program Access						
Majors (total)						
New Majors						
Courses Offered (total # of courses)	8	8	8	9	10	10
Classes Offered (total # of sections)	50	45	38	53	59	67
Morning (Prior to 11:59AM)	21	21	18	21	25	36
Afternoon (12:00 to 4:29PM)	14	12	11	19	19	15
Evening (4:30PM or Later)	13	10	9	11	14	13
Arranged Hour	2	2		2	1	3
Weekend						
Short term	10	1		1	1	1
Distance Education (full term)	3	3	2	1	4	
Distance Education (short term)				1		
Enrollment	1,015	881	840	1,030	1,181	2,041
Weekly Student Contact Hours (WSCH)	4,950.2	4,541.0	4,431.9	5,348.9	6,345.2	7,292.0
Full-Time Equivalent Students (FTES)	178.4	164.3	160.4	193.6	227.2	224.5
Program Resources						
Full-Time Equivalent Faculty (FTEF)	16.15	15.23	13.5	17.99	19.77	12.19
Credit Reimbursement Rate	\$2,850.73	\$2,790.53	\$2,922.30	\$3,259.71	\$3,476.34	\$4,367.00
Program Operation						
WSCH/FTEF	306.5	298.2	328.3	297.3	320.9	598.2
FTES/FTEF	11.0	10.8	11.9	10.8	11.5	18.4
Fill rate at Census	47.9	46.2	50.7	42.8	44.4	84.8
Program Success						
Error! Hyperlink reference not valid.	56%	52%	59%	60%	58%	60%
Retention Rate	87%	84%	88%	88%	87%	92%

Key Performance Indicator	Sp 03		Sp 04		Sp 05		Sp 06		Sp 07		Sp 08	
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
Student Demographic Data												
	#	%	#	%	#	%	#	%	#	%	#	%
Gender												
Female	631	63%	522	58%	476	59%	641	64%	704	61%	739	60%
Male	364	37%	373	42%	333	41%	361	36%	441	39%	483	39%
Missing											10	1%
Total	995	100%	895	100%	809	100%	1002	100%	1145	100%	1232	100%
Age												
19 or younger	234	24%	205	23%	196	24%	269	27%	289	25%	317	26%
20-24	485	49%	459	51%	415	51%	488	49%	583	51%	620	50%
25-29	104	10%	108	12%	89	11%	119	12%	133	12%	151	12%
30-34	79	8%	47	5%	31	4%	32	3%	62	5%	60	5%
35-39	37	4%	30	3%	28	3%	36	4%	20	2%	46	4%
40-49	41	4%	39	4%	35	4%	48	5%	46	4%	26	2%
50 and above	15	2%	7	1%	15	2%	10	1%	12	1%	12	1%
Total	995	100%	895	100%	809	100%	1002	100%	1145	100%	1232	100%
Ethnicity												
Asian	167	17%	139	16%	135	17%	184	18%	200	17%	215	17%
African American	53	5%	43	5%	47	6%	49	5%	45	4%	54	4%
Hispanic	381	38%	331	37%	313	39%	375	37%	434	38%	479	39%
Native American/Alaskan Native	7	1%	4	0%	4	0%	3	0%	4	0%	6	0%
Other	20	2%	16	2%	22	3%	27	3%	27	2%	29	2%
Caucasian	313	31%	312	35%	245	30%	324	32%	371	32%	346	28%
Decline to State	46	5%	40	4%	37	5%	37	4%	58	5%	44	4%
Missing	8	1%	10	1%	6	1%	3	0%	6	1%	59	5%
Total	995	100%	895	100%	809	100%	1002	100%	1145	100%	1232	100%
Educational Goal												
Degree/Cert/Transfer	925	93%	825	92%	748	92%	927	93%	1062	93%	356	29%
Career/Ed Development	16	2%	18	2%	16	2%	18	2%	17	1%	67	5%
Improve Basic Skills											5	0%
Undecided											32	3%
Unknown	54	5%	52	6%	45	6%	57	6%	66	6%	772	63%
Total	995	100%	895	100%	809	100%	1002	100%	1145	100%	1232	100%

Key Performance Indicator	SU 02	SU 03	SU 04	SU 05	SU 06	SU 07
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Program Access						
Majors (total)						
New Majors						
Courses Offered (total # of courses)	2	2	2	3	3	3
Classes Offered (total # of sections)	6	4	9	10	12	12
Morning (Prior to 11:59AM)	1	3	3	3	4	6
Afternoon (12:00 to 4:29PM)	1		1	1	3	1
Evening (4:30PM or Later)	3		4	5	4	4
Arranged Hour	1	1	1	1	1	1
Weekend						
Short term	2			1	3	
Distance Education (full term)	1	1	1	1		1
Distance Education (short term)					1	
Enrollment	89	136	238	144	113	312
Weekly Student Contact Hours (WSCH)	2,122.5	1,351.0	2,769.0	2,869.9	2,800.1	2,089.7
Full-Time Equivalent Students (FTES)	17.7	21.4	41.2	40.8	38.9	32.1
Program Resources						
Full-Time Equivalent Faculty (FTEF)	2.75	1.3	2.97	3.13	3.89	1.96
Credit Reimbursement Rate	\$2,850.73	\$2,790.53	\$2,922.30	\$3,259.71	\$3,476.34	\$4,367.00
Program Operation						
WSCH/FTEF	771.8	1,039.2	932.3	916.9	719.8	1,066.2
FTES/FTEF	6.4	16.5	13.9	13.0	10.0	16.4
Fill rate at Census	89.8	79.3	37.6	107.0	94.8	70.9
Program Success						
Error! Hyperlink reference not valid.	55%	44%	52%	55%	75%	58%
Retention Rate	81%	81%	88%	86%	92%	84%

Key Performance Indicator	Su 03		Su 04		Su 05		Su 06		Su 07		Su 08	
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
Student Demographic Data												
	#	%	#	%	#	%	#	%	#	%	#	%
Gender												
Female	128	70%	94	69%	151	63%	196	72%	135	56%	143	57%
Male	56	30%	43	31%	90	37%	75	28%	107	44%	105	42%
Missing											2	1%
Total	184	100%	137	100%	241	100%	271	100%	242	100%	250	100%
Age												
19 or younger	37	20%	26	19%	53	22%	69	25%	63	26%	64	26%
20-24	87	47%	70	51%	118	49%	119	44%	114	47%	120	48%
25-29	22	12%	18	13%	30	12%	36	13%	29	12%	32	13%
30-34	20	11%	10	7%	11	5%	16	6%	15	6%	15	6%
35-39	8	4%	3	2%	13	5%	11	4%	11	5%	5	2%
40-49	9	5%	9	7%	14	6%	17	6%	7	3%	11	4%
50 and above	1	1%	1	1%	2	1%	3	1%	3	1%	3	1%
Total	184	100%	137	100%	241	100%	271	100%	242	100%	250	100%
Ethnicity												
Asian	25	14%	22	16%	36	15%	43	16%	45	19%	30	12%
African American	11	6%	8	6%	14	6%	17	6%	10	4%	13	5%
Hispanic	57	31%	58	42%	93	39%	98	36%	78	32%	92	37%
Native American/Alaskan Native	1	1%	1	1%	3	1%	1	0%	2	1%	3	1%
Other	11	6%	2	1%	8	3%	6	2%	4	2%	8	3%
Caucasian	74	40%	38	28%	68	28%	91	34%	90	37%	85	34%
Decline to State	4	2%	5	4%	18	7%	13	5%	11	5%	16	6%
Missing	1	1%	3	2%	1	0%	2	1%	2	1%	3	1%
Total	184	100%	137	100%	241	100%	271	100%	242	100%	250	100%
Educational Goal												
Degree/Cert/Transfer	154	84%	120	88%	214	89%	244	90%	224	93%	24	10%
Career/Ed Development	6	3%	7	5%	6	2%	4	1%	1	0%	9	4%
Undecided											7	3%
Unknown	24	13%	10	7%	21	9%	23	8%	17	7%	210	84%
Total	184	100%	137	100%	241	100%	271	100%	242	100%	250	100%

Key Performance Indicator						WN 08
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Program Access						
Majors (total)						
New Majors						
Courses Offered (total # of courses)						4
Classes Offered (total # of sections)						9
Morning (Prior to 11:59AM)						2
Afternoon (12:00 to 4:29PM)						3
Evening (4:30PM or Later)						2
Arranged Hour						2
Weekend						
Short term						4
Distance Education (full term)						2
Distance Education (short term)						2
Enrollment						269
Weekly Student Contact Hours (WSCH)						2,905.2
Full-Time Equivalent Students (FTES)						27.7
Program Resources						
Full-Time Equivalent Faculty (FTEF)						1.5
Credit Reimbursement Rate						\$4,367.00
Program Operation						
WSCH/FTEF						1,936.8
FTES/FTEF						18.4
Fill rate at Census						86.0
Program Success						
Error! Hyperlink reference not valid.						74%
Retention Rate						93%

Key Performance Indicator	Year 1		Year 2		Year 3		Year 4		Year 5		WN 08 Year 6	
	#	%	#	%	#	%	#	%	#	%	#	%
Student Demographic Data												
Gender												
Female											176	64%
Male											100	36%
Missing											1	0%
Total											277	100%
Age												
19 or younger											63	23%
20-24											122	44%
25-29											35	13%
30-34											30	11%
35-39											14	5%
40-49											9	3%
50 and above											4	1%
Total											277	100%
Ethnicity												
Asian											42	15%
African American											17	6%
Hispanic											107	39%
Native American/Alaskan Native											3	1%
Other											11	4%
Caucasian											73	26%
Decline to State											10	4%
Missing											14	5%
Total											277	100%
Educational Goal												
Degree/Cert/Transfer											72	26%
Career/Ed Development											17	6%
Improve Basic Skills											1	0%
Undecided											9	3%
Unknown											178	64%
Total											277	100%

Key Performance Indicator	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Program Resources						
Revenue: FTES* Reimbursement Rate	964,658.5	990,526.5	1,090,105.6	1,350,921.6	1,632,141.6	2,067,032.1
Total District Adopted Program Budget	n/a	no data	no data	no data	no data	no data
Support Personnel (wage without benefit, 2200 and 2400 in budget)	n/a	no data	no data	no data	no data	no data
Supplies (4300 in budget)	n/a	no data	no data	no data	no data	no data
Cost (district funds only)	n/a	no data	no data	no data	no data	no data
Total FTES for the year	338.39	354.96	373.03	414.43	469.5	473.33
Cost per FTES (district funds only)	n/a	no data	no data	no data	no data	no data
Program Success						
Degrees Awarded	99	127	104	107	91	
Certificates Awarded						
Skill Awards						
Licenses						
Career Technical Education Programs						
VTEA Grant						
Industry Contributions to Program Resources						
Available Jobs						
Attach one copy of the three most recent College Core Indicator Information forms for each of the appropriate TOP codes						
Please include "Student Satisfaction" and "Employer Satisfaction" in the program review write-up.						

18. Appendix B

LIBRARY ACTIVITY:

Library Research Orientations 0

Circulation of materials in Biology: > 3% of total library circulation

LIBRARY RESOURCES:

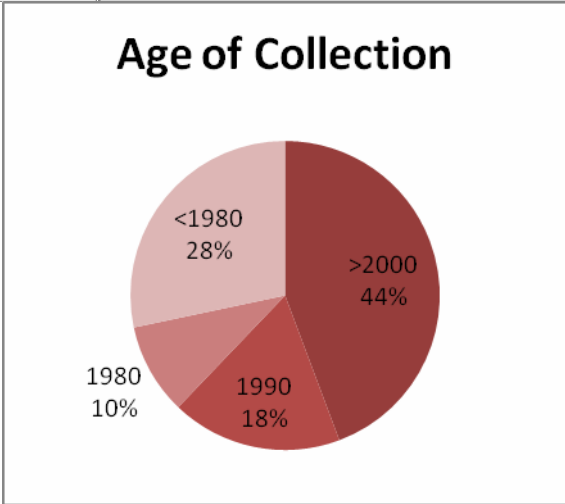
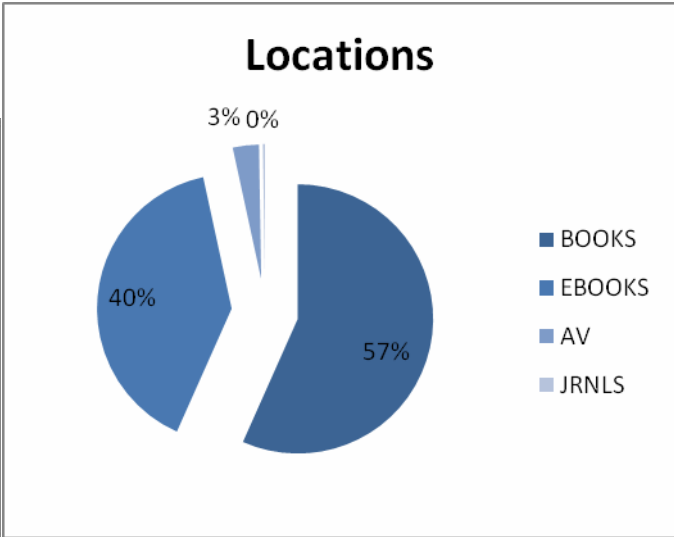
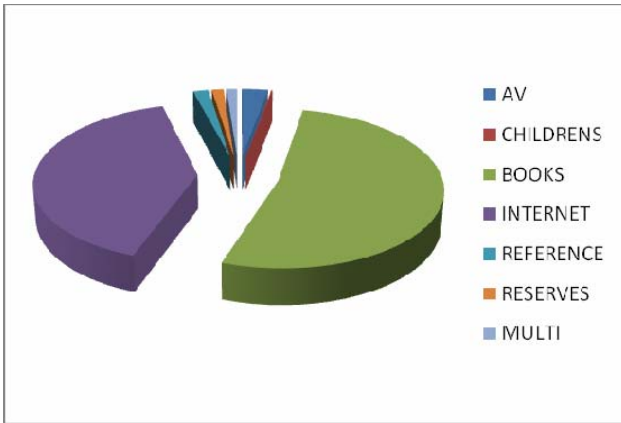
Dewey Call No. Range: 570-579

Collection size:

BOOKS	433
EBOOKS	305
JOURNALS	2 PRINT (see eJournals below)
AV	24

EJOURNALS:

- Biology
 - [Biology - General \(180\)](#)
 - [Biophysics \(39\)](#)
 - [Cytology \(64\)](#)
 - [Evolution \(15\)](#)
 - [Genetics \(82\)](#)
 - [Microbiology & Immunology \(95\)](#)
 - [Microscopy \(7\)](#)
- [Biomedical Engineering \(22\)](#)
- Human Anatomy & Physiology
 - [Anatomy \(10\)](#)
 - [Animal Biochemistry \(47\)](#)
 - [Neuroscience \(52\)](#)
 - [Physiology \(111\)](#)
- Zoology
 - [Animal Anatomy & Embryology \(11\)](#)
 - [Animal Behavior \(9\)](#)
 - [Animal Geography \(12\)](#)
 - [Invertebrates & Protozoa \(51\)](#)
 - [Vertebrates \(57\)](#)
 - [Zoology - General \(67\)](#)



ONLINE DATABASES AVAILABLE AT CITRUS LIBRARY:

Electronic books: netLibrary access to more than 18,000 electronic books is available
 Journal Articles and reference databases:

ALL ONLINE DATABASES

Academic Search Premier (1975-)

Alldata Online

Alt HealthWatch(1990-)
 Annals of American History Online
 Auto Repair Reference Center
 Biography Resource Center

Biology Journals

Book Index with Reviews
 Books in Print with Reviews
 Business Source Premier(1965-; some 1922-)
 CountryWatch
 CQ Researcher 1991- .

EBSCO Animals

Encyclopaedia Britannica Online
 ERIC(1983-)
 Funk & Wagnalls New World Encyclopedia

[Gale Virtual Reference Library / Science, Environment](#)

Green File

Grove Art Online
 Health Source
 Health Source: Nursing

Historical Los Angeles Times 1881-1966
 Learning Express Test Prep
LEXIS-NEXIS Academic
 Literature Resource Center
 Literary Reference Center
 MagillOnLiterature Plus
 Magill's Medical Guide
MasterFILE Premier(1975-)
 MEDLINE
 Military & Government(current)
 MLA International Bibliography
 Newspaper Source (1997-)
 Oxford English Dictionary
 Professional Development(1965-)
 Psychology & Behavioral Science(1965-)
 Regional Business News(1995-)
 Religion & Philosophy (1975-)
 SIRS Researcher Full text articles (1989-)
 Tuition Funding Sources
 Twayne's Author Series
 Vocational & Career(1985-)
 Webster's 3rd New International Dictionary, Unabr.