

their industry education in web design and usability. Expands their education in entrepreneurship and small business management. Contributes to the student's financial independence, career success, and the world's economy. Prepares them for business ownership and key roles in web design or maintenance positions.

#### Program Student Learning Outcome Statement:

- Students will be able to professionally communicate their business ideas and values to the appropriate business audience.
- Students will be able to examine diverse populations and understand how businesses respond to the different populations with customized business strategies.
- Students will be able to develop and implement a business plan by conducting research in the appropriate specialty area and identify the target market, competition, industry standards, and financial projections.

CIS 123	Web Publishing With Dreamweaver	6
CIS 162	Website Universal Design	2
<b>Plus the Common Core courses for Entrepreneur Education</b>		<b>9</b>
<b>Total units</b>		<b>17</b>

# CHEMISTRY

## SCHOOL OF MATHEMATICS, SCIENCE, AND ENGINEERING

**DEAN:** Michael Odu, Ph.D., Office 215A, 619-482-6344

**FACULTY:** David R. Brown, Ph.D.; David Hecht, Ph.D.;  
Tinh-Alfredo V. Khuong, Ph.D.; Joann Um, Ph.D.

**DEPARTMENT CHAIR:** Jeffrey Veal, Ph.D.

### GENERAL DESCRIPTION

Chemistry is a physical science that focuses on the composition, structural properties, reaction of substances, and the means by which matter is converted from one form to another. This discipline explores the fundamentals of organic and inorganic matter, chemical structure and reactivity, qualitative and quantitative analyses, laboratory procedures that include strong emphasis on modern instrumental methods, research methodologies, and quantum mechanics.

### CAREER OPTIONS

Below is a sample of the career options available to the chemistry major. A few require an associate in science degree, some require a bachelor's degree, and most require a graduate-level degree: high school or college teacher, analytical chemist, biochemist, polymer chemist, medical doctor, dentist, laboratory technician, and technical sales representative. Entry-level career opportunities are available in biotechnology, biomedical instrumentation, diagnostics, immunochemistry, pharmaceuticals, basic research, and environmental control agencies.

### DEGREE/CERTIFICATE OPTIONS

### MAJOR CODE

#### Associate in Science Degree: Transfer Preparation

Chemistry

01530

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

**Note:** See also *Pharmaceutical and Laboratory Science*, page 302.

#### Websites for chemistry majors:

**SDSU:** <http://www.chemistry.sdsu.edu>

**UCSD:** <http://www.chemistry.ucsd.edu>

**CSU, San Marcos:** <http://www.csusm.edu/chemistry>

**Articulation:** <http://www.assist.org>

## ASSOCIATE IN SCIENCE DEGREE

### CHEMISTRY



#### ASSOCIATE IN SCIENCE DEGREE TRANSFER PREPARATION \* (MAJOR CODE: 01530)

Chemistry is the study of the composition of matter, its structure, and the means by which it is converted from one form to another. Related to chemistry is molecular biology. Students interested in matter as it applies to life should also take courses in the life sciences. Most courses require mathematics prerequisites. Placement is determined by the Mathematics Assessment Process, which should be taken before registration. It is essential that students start with mathematics during the first semester.

Chemistry majors are advised to give priority to lower-division requirements for the major as they are prerequisites for most upper division courses. Only as many general education courses should be taken as can be included in the 70-unit transfer limitation, and these must be chosen with care to insure that they fit into the general education pattern at the transfer institution.

#### Program Student Learning Outcome Statement:

- Solve quantitative chemistry problems and demonstrate reasoning clearly and completely.

#### FIRST SEMESTER \*\*

CHEM 200	General Chemistry I	5
MATH 250	Analytic Geometry and Calculus I	5

#### SECOND SEMESTER

CHEM 210	General Chemistry II	5
MATH 251	Analytic Geometry and Calculus II	4
PHYS 270	Principles of Physics I	3
PHYS 271	Principles of Physics Laboratory I	1



**THIRD SEMESTER**

CHEM 240	Organic Chemistry I	5
MATH 252	Analytic Geometry and Calculus III	4
PHYS 272	Principles of Physics II	3
PHYS 273	Principles of Physics Laboratory II	1

**FOURTH SEMESTER**

CHEM 250	Analytical Chemistry (5)	5
	OR	
CHEM 242	Organic Chemistry II (5)	
<b>Total units</b>		<b>41</b>

Students who plan to major in Biochemistry at a four-year college or university should also enroll in BIOL 210 and 212.

- \*\* If you do not have the prerequisites for CHEM 200 and MATH 250, take CHEM 170 and MATH 101 in your first semester. This will add one semester to your program of studies.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 64.

- \* Students planning to transfer to a four-year college or university should complete courses specific to the transfer institution of choice. University requirements vary from institution to institution and are subject to change. Therefore, it is important to verify transfer major preparation and general education requirements through consultation with a counselor in either the Counseling Center or Transfer Center. See catalog TRANSFER COURSES INFORMATION section on page 45 for further information.

# COMMUNICATION

## SCHOOL OF ARTS, COMMUNICATION, AND SOCIAL SCIENCES

**ACTING DEAN:** William Kinney, M.A., Office 702B, 619-482-6372

**FACULTY:** Eric Maag, M.A.; Jordan Mills, M.A.;

Candice Taffolla-Schreiber, M.A.; Rebecca Wolniewicz, Ph.D.;  
Rachel Hastings, Ph.D.

**DEPARTMENT CHAIR:** Rebecca Wolniewicz, Ph.D.

**GENERAL DESCRIPTION**

In the broadest sense, communication is the study of all forms of human communication with a focus upon verbal behavior. This department explores the nature and method of verbalization including the development and use of language and symbolic process and theories of rhetoric and communicative behavior. A competent communicator is skilled in the critical analysis of an evaluation of messages and can manage essential factors within a verbal situation, such as idea selection, language use, and vocal or physical presentation.

**CAREER OPTIONS**

Below is a sample of the career options available for the communication major. A few of these require an associate degree, most require a bachelor's degree, and some require a graduate-level degree. Possible career options include: high school or college instructor, public relations officer, television or radio broadcaster, consultant, lawyer, public administrator, politician, speech writer, minister, sales representative, business manager, television, radio critic, or film critic. With additional coursework, a communication major can seek positions related to speech pathology, and audiology, which is a field concerned with disorders of speech, language, and hearing.

**DEGREE/CERTIFICATE OPTIONS****MAJOR CODE****Associate in Arts Degree: Transfer Preparation**

Communication	A1470
Communication Studies (SB 1440)	01475

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

## ASSOCIATE IN ARTS DEGREE

### COMMUNICATION

**ASSOCIATE IN ARTS DEGREE****TRANSFER PREPARATION \* (MAJOR CODE: A1470)**

Designed to provide students who desire a broad cultural education in the liberal arts and for the major who wishes to transfer to a four-year college or university. Coursework focuses on both theoretical principles of oral communication and practical application in public speaking in formal and informal debates. In addition, the curriculum encourages effective personal growth, citizenship, and social relations.

**Program Student Learning Outcome Statement:**

- Demonstrate the communication skills necessary to engage competently in interpersonal, small group, public speaking and mass communication contexts.

COMM 103	Oral Communication	3
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**Complete 18 units from the following electives: 18**

COMM 104	Public Speaking (3)
COMM 111	Oral Interpretation (3)
COMM 142	Oral History (3)
COMM 160	Argumentation and Debate (3)
COMM 174	Interpersonal Communication (3)
COMM 176	Intercultural Communication (3)
COMM/TELE 180	Introduction to Electronic Media (3)
COMM 185/TELE 114	Cinema as a Form of Expression and Communication (3)

