

ASSOCIATE IN SCIENCE DEGREE



Mathematics

Student Transfer Achievement Reform (STAR) Act (SB1440)

Transfer Preparation * (Major Code: 01585)



Associate Degree for Transfer™

Mathematics has become essential and pervasive in the workplace. Projections indicate that its use will expand as will the need for more workers with knowledge of college-level mathematics. In today's highly technological society, the study of mathematics has become increasingly important, particularly to computer science. Mathematics is a study that provides a foundation for problem solving and logical reasoning skills. It includes arithmetic, algebra, geometry trigonometry, calculus, statistics, and computer programming, etc. Mathematics is the science of numbers and their operations, interrelations, combinations, generalizations, and abstractions. In addition to college-level mathematics courses (numbered 100 or above) that will meet the lower-division needs of college transfer students, Southwestern College offers developmental courses consisting of arithmetic through intermediate algebra.

MATH 250	Analytic Geometry and Calculus I	5
MATH 251	Analytic Geometry and Calculus II	4
MATH 252	Analytic Geometry and Calculus III	4

Choose a minimum of 6 units with at least 3 units from Group A (3 units are required from Group A, no units are required from Group B, however all 6 units can come from Group A) 6-7

Group A:

MATH 253	Introduction to Differential Equations	3
	OR	
MATH 254	Introduction to Linear Algebra	3

Group B:

MATH 119	Elementary Statistics	4
	OR	
MATH 260	Discrete Mathematics	3
	OR	
PHYS 270	Principles of Physics I	3
	AND	
PHYS 271	Principles of Physics Laboratory I	1

Total units 19-20

To earn an associate degree, additional general education and graduation requirements must be completed. See page 51.

* 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 33 for further information.**

**The Mathematics Department recommends the MATH 119 be taken as an elective if it is not chosen from Group

Medical Assistant— Administrative and Clinical

Higher Education Center at National City

Dean Christine Perri, Office 7103D, 619-216-6665, ext. 6668

Faculty Luis Osuna, M.D.

General Description

Designed to respond to the ever-increasing need for well-trained, skilled personnel to fill positions in the allied healthcare industry as medical assistants. Today's healthcare industry demands a higher level of thinking and performance skills than ever before. The medical assistant programs prepare students for careers as administrative medical or clinical assistants or as medical office managers. The administrative medical assistant provides service to patients within the front office environment. The clinical medical assistant provides some administrative services to patients with primary duties in a clinical (back office) environment.

Career Options

The U.S. Bureau of Labor and Statistics has placed medical offices and healthcare facilities among the top ten industries expected to generate the largest number of new jobs. Employment in health services is expected to grow quickly during the coming decades because of the expanding healthcare needs of an aging population. Few fields are as immune to recession as healthcare. Potential employers include, but are not limited to hospitals and doctors' offices, urgent care, outpatient surgery, industrial and sports medicine clinics; insurance companies, skilled nursing facilities, state and federal health agencies, and medical research institutions.

Career options available for the medical assistant and medical office management major. Some require a certificate of achievement and most require an associate in science degree or higher degree: medical assistant—administrative or clinical, medical, office clerk, medical secretary, medical transcriptionist, medical records clerk, medical records coder, medical records technician, registered records administrator, health insurance specialist, health information administrator, medical office manager, quality assurance specialist, and medical interpreter.



Degree/Certificate Options

Associate in Science Degree: Career/Technical

Medical Assistant: Administrative	02314
Medical Assistant: Clinical	02321
Medical Office Management	02311

Certificates of Achievement

Medical Assistant: Administrative—Basic	02315
Medical Assistant: Administrative—Intermediate	02316
Medical Assistant: Administrative Intensive Training	02327
Medical Assistant: Administrative Intensive Training—Bilingual (English/Spanish)	C2055
Medical Assistant: Clinical—Basic	02322
Medical Assistant: Clinical—Intermediate	02323
Medical Assistant: Clinical—Intensive Training	02324
Medical Assistant: Coding and Insurance—Basic	02317
Medical Assistant: Coding and Insurance—Intermediate	02318
Medical Interpreter—Basic (English/Spanish)	02325
Medical Interpreter—Intermediate (English/Spanish)	02326
Medical Office Management—Basic	02312
Medical Office Management—Advanced	02313

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

Major Code

ASSOCIATE IN SCIENCE DEGREE

Medical Assistant: Administrative

Career technical (Major Code: 02314)

Provides students with training to become administrative medical assistants with industry-required skills to work in healthcare settings. Prepares students for the California Certified Medical Assistant-Administrative examination conducted by the California Certifying Board for Medical Assistants.

BUS 182	Keyboarding for Office Professionals (2)	
OR		2–2.5
BUS 200B	Microsoft Word: Advanced (2.5)	
BUS 183	Business Mathematics	3
BUS 200A	Microsoft Word: Beginning	2.5
BUS 211	Communication in Business and Industry	
OR		3
BUS 212	Business Communication	
BUS/CIS 239	Project Management	3
BUS 290–293	Work Experience in Business I–IV (2–4)	2
CIS 92	Microsoft Office Suite (3)	
OR		3–4
CIS 101	Introduction to Computers and Information Processing (4)	
LDR 148	Business Presentation Skills—Bilingual (English/Spanish)	
OR		2
LDR 149	Business Presentation Skills	
MEDOP 21	Medical Coding I	3
MEDOP 22	Medical Coding II	2.5
MEDOP 41A	Medical Insurance I	2
MEDOP 41B	Medical Insurance II	2
MEDOP 133	Body Basics for Medical Office Personnel	3
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)	
OR		3
MEDOP 230	Medical Terminology	
MEDOP 231	Medical Office Procedures	4
Total units		40–41.5

To earn an associate degree, additional general education and graduation requirements must be completed. See page 51.

Medical Assistant: Clinical

Career technical (Major Code: 02321)

Prepares students to work in a medical office setting and other healthcare facilities. Covers instruction in medical office administrative duties and regulations, medical record management, communication skills, office finances, insurance and coding procedures, clinical practices of diagnostic equipment, routine lab tests, blood drawing techniques, immunization administration, infection control techniques, vital signs and CPR.

BUS 71	Keyboarding II (1)		
	OR		
BUS 182	Keyboarding for Office Professionals (2)	1–2	
BUS 183	Business Mathematics	3	
BUS 211	Communication in Business and Industry		
	OR		
BUS 212	Business Communication	3	
BUS/CIS 239	Project Management	3	
BUS 290–293	Work Experience in Business I–IV (2–4)	2–4	
CL 120	Computer Literacy	1	
LDR 148	Business Presentation Skills—Bilingual (English/Spanish)		
	OR		
LDR 149	Business Presentation Skills	2	
MEDOP 133	Body Basics for Medical Office Personnel	3	
MEDOP 135	Human Health and Disease for Medical Office Personnel	3	
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)		
	OR		
MEDOP 230	Medical Terminology	3	
MEDOP 231	Medical Office Procedures	4	
MEDOP 234	Medical Assistant—Clinical Procedures	4	
MEDOP 236	Pharmacology for Allied Health Professionals	3	
Total units		35–38	

To earn an associate degree, additional general education and graduation requirements must be completed. See page 51.

Medical Office Management

Career/Technical (Major Code: 02311)

Prepares students with fundamental supervisory and management skills required in various types of healthcare settings.

ACCT 7	Basic Business Bookkeeping (3)		
	OR		
ACCT 101	Principles of Accounting I (4)		3–4
BUS 140	Business Law/The Legal Environment of Business		3
BUS 150	Principles of Management		3
BUS 211	Communication in Business and Industry		
	OR		
BUS 212	Business Communication		3
BUS/CIS 239	Project Management		3
BUS 290–293			
	Work Experience in Business I–IV (2–4)		2–4
CIS 101	Introduction to Computers and Information Processing		4
Plus completion of Medical Office Management—Basic certificate			22–23
Total units			43–47

To earn an associate degree, additional general education and graduation requirements must be completed. See page 51.



Some courses within this program may require additional coursework that must be completed prior to enrollment in those courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.

CERTIFICATES

Medical Assistant: Administrative—Basic

Certificate of Achievement

Career/Technical (Major Code: 02315)

Prepares students to work in a medical office setting and other healthcare facilities. Students gain an understanding of basic medical terminology, anatomy and physiology, medical office procedures, including receptionist and telephone techniques, medical records filing, and documentation processing.

BUS 71	Keyboarding II (1)		
	OR		
BUS 182	Keyboarding for Office Professionals (2)		1–2
BUS 200A	Microsoft Word: Beginning		2.5
BUS 210	Business English		3
MEDOP 21	Medical Coding I		3
MEDOP 41A	Medical Insurance I		2
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)		
	OR		
MEDOP 230	Medical Terminology		3
MEDOP 231	Medical Office Procedures		4
Total units			18.5–19.5

Medical Assistant: Administrative—Intermediate

Certificate of Achievement

Career/Technical (Major Code: 02316)

Provides students with training to become administrative medical assistants with industry-required skills to work in various healthcare settings, and prepares them for the CCMA-Administrative examination conducted by the California Certifying Board for Medical Assistants.

BUS 182	Keyboarding for Office Professionals (2)		
	OR		
BUS 200B	Microsoft Word: Advanced (2.5)		2–2.5
BUS 211	Communication in Business and Industry		
	OR		
BUS 212	Business Communication		3
BUS/CIS 239	Project Management		3
BUS 290–293	Work Experience in Business I–IV (2–4)		2
CIS 92	Microsoft Office Suite (3)		
	OR		
CIS 101	Introduction to Computers and Information Processing (4)		3–4
MEDOP 22	Medical Coding II		2.5
MEDOP 41B	Medical Insurance II		2
MEDOP 133	Body Basics for Medical Office Personnel		3
Plus the required courses for the Medical Assistant:			
Administrative—Basic certificate			18.5–19.5
Total units			39–41.5

Medical Assistant: Administrative Intensive Training

Certificate of Achievement

Career/Technical (Major Code: 02327)

Provides training for medical front office positions at the receptionist/secretarial level, including medical office procedures, written and oral communications, appointment scheduling, medical record maintenance, medical office site audit, vital signs, cardiopulmonary resuscitation (CPR), and an introduction to medical billing. Emphasizes medical terminology as well as basic human body structures and functions.

BUS 71	Keyboarding II (1)		
	OR		
BUS 182	Keyboarding for Office Professionals (2)		1–2
MEDOP 38	Medical Assistant: Administrative Intensive Training		12
MEDOP 236	Pharmacology for Allied Health Professionals		3
MEDOP 290–293	Work Experience in Medical Assistant I–IV		2–4
Total units			18–21

Medical Assistant: Administrative Intensive Training—Bilingual (English/Spanish)

Certificate of Achievement

Career/Technical (Major Code: C2055)

Provides training in English and Spanish for medical front office positions at the receptionist/secretarial level, including medical office procedures, written and oral communications, appointment scheduling, medical record maintenance, medical office site audit, vital signs, cardiopulmonary resuscitation (CPR), and an introduction to medical billing. Emphasizes medical terminology as well as basic human body structures and functions.

Provee instrucción y entrenamiento en inglés y español para puestos a nivel de recepcionista y secretaria de consultorio médico, incluyendo procedimientos de consultorio médico, comunicación escrita y oral, programación de citas, mantenimiento de expedientes médicos, auditoría de consultorio médico, signos vitales, resucitación cardiopulmonar (RCP), e introducción en cobros médicos. Enfatiza la terminología médica bilingüe (inglés-español) así como las estructuras y funciones básicas del cuerpo humano.

BUS 71	Keyboarding II (1)		
	OR		
BUS 182	Keyboarding for Office Professionals (2)		1–2
MEDOP 40	Medical Assistant: Administrative Intensive Training—Bilingual (English/Spanish)		12
MEDOP 236	Pharmacology for Allied Health Professionals		3
MEDOP 290–293	Work Experience in Medical Assistant I–IV (2–4)		2–4
Total units			18–21

Medical Assistant: Clinical—Basic

Certificate of Achievement

Career technical (Major Code: 02322)

Prepares students to work in a medical office setting and other healthcare facilities as a medical assistant with a clinical emphasis. Covers instruction in medical office administrative duties and regulations, medical record management, communication skills, office finances, insurance and coding procedures, clinical practices of diagnostic equipment, routine lab tests, blood drawing techniques, immunization administration, infection control techniques, vital signs, and CPR.

BUS 71	Keyboarding II (1)		
	OR		1–2
BUS 182	Keyboarding for Office Professionals (2)		
BUS 210	Business English		3
CIS 92	Microsoft Office Suite		3
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)		
	OR		3
MEDOP 230	Medical Terminology		
MEDOP 231	Medical Office Procedures		4
MEDOP 234	Medical Assistant—Clinical Procedures		4
Total units			18–19

Medical Assistant: Clinical—Intermediate

Certificate of Achievement

Career technical (Major Code: 02323)

Prepares students to work in a medical office setting and other healthcare facilities. Covers instruction in medical office administrative duties and regulations, medical record management, communication skills, office finances, insurance and coding procedures, clinical practices of diagnostic equipment, routine lab tests, blood drawing techniques, immunization administration, infection control techniques, vital signs, and CPR.

BUS 183	Business Mathematics		3
BUS 211	Communication in Business and Industry		
	OR		3
BUS 212	Business Communication		
BUS/CIS 239	Project Management		3
BUS 290–293	Work Experience in Business I–IV (2–4)		2
MEDOP 133	Body Basics for Medical Office Personnel		3
MEDOP 236	Pharmacology for Allied Health Professionals		3
Plus the courses required for the Medical Assistant: Clinical—Basic certificate			18–19
Total units			35–36

Medical Assistant: Clinical—Intensive Training

Certificate of Achievement

Career technical (Major Code: 02324)

Provides training on diagnostic equipment, routine clinical lab tests, blood drawing techniques, immunization administration, infection control techniques, vital signs, and cardiopulmonary resuscitation (CPR). Covers instruction in medical office administrative duties and regulations, including records management, office finance and billing, and communication skills.

BUS 71	Keyboarding II (1)		
	OR		1–2
BUS 182	Keyboarding for Office Professionals (2)		
BUS 210	Business English		3
MEDOP 100	Medical Assistant: Clinical—Intensive		12
MEDOP 290–293			
	Work Experience in Medical Assistant I–IV (2–4)		2–4
Total units			18–21

Medical Assistant: Coding and Insurance—Basic

Certificate of Achievement

Career technical (Major Code: 02317)

Prepares students for entry-level positions in healthcare settings where they will be responsible for validating medical codes using International Classification of Diseases (ICD-9) and Current Procedural Terminology (CPT) manuals to facilitate reimbursement. The basic-level prepares students to sit for the National Certified Coding Associate (CCA) examination.

BUS 71	Keyboarding II (1)		
	OR		1–2
BUS 182	Keyboarding for Office Professionals (2)		
BUS 210	Business English		3
MEDOP 21	Medical Coding I		3
MEDOP 22	Medical Coding II		2.5
MEDOP 41A	Medical Insurance I		2
MEDOP 41B	Medical Insurance II		2
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)		
	OR		3
MEDOP 230	Medical Terminology		
MEDOP 231	Medical Office Procedures		4
Total units			20.5–21.5



Some courses within this program may require additional coursework that must be completed prior to enrollment in those courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.

🔒 Medical Assistant: Coding and Insurance—Intermediate

Certificate of Achievement

Career technical (Major Code: 02318)

Prepares students for advanced-level positions in healthcare settings where they will be responsible for validating medical codes using International Classification of Diseases (ICD-9) and Current Procedural Terminology (CPT) manuals to facilitate reimbursement. Also prepares them to sit for the National Certified Coding Associate (CCA) examination.

BUS 183	Business Mathematics	3
BUS 211	Communication in Business and Industry	
	OR	3
BUS 212	Business Communication	
BUS 290–293	Work Experience in Business I–IV (2–4)	2
MEDOP 22	Medical Coding II	2.5
MEDOP 133	Body Basics for Medical Office Personnel	3
Plus the required courses for the Medical Assistant: Coding and Insurance—Basic certificate 20.5–21.5		
Total units		34–35

🔒 Medical Interpreter—Basic (English/Spanish)

Certificate of Achievement

Career technical (Major Code: 02325)

Emphasizes English/Spanish medical interpretation skills and knowledge to facilitate communication between healthcare professionals and patients. Provides a foundation for students who desire to become certified administrative and medical interpreters for the state of California.

BUS 71	Keyboarding II (1)	
	OR	1–2
BUS 182	Keyboarding for Office Professionals (2)	
BUS 181	Spanish Computer Skills for Interpretation/Translation	3
BUS 210	Business English	3
MEDOP 21	Medical Coding I	3
MEDOP 41A	Medical Insurance I	2
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)	3
MEDOP 231	Medical Office Procedures	4
SPAN 215	Spanish for Bilinguals I (5)	
	OR	3–5
SPAN 225	Intermediate Conversation and Writing on Spanish Culture (3)	
Total units		22–25

* Students who have completed high school or a higher-level degree in a Spanish-speaking country may waive the Spanish language requirement by submitting a transcript of studies or a diploma from their foreign institution.

🔒 Medical Interpreter—Intermediate (English/Spanish)

Certificate of Achievement

Career technical (Major Code: 02326)

Emphasizes advanced English/Spanish medical interpretation skills and knowledge to facilitate communication between healthcare professionals and patients. Provides a foundation for students who desire to become certified administrative and medical interpreters for the state of California.

BUS 211	Communication in Business and Industry	
	OR	3
BUS 212	Business Communication	
BUS 227	Interpretation and Translation: Medical	3
BUS 290–293	Work Experience in Business I–IV (2–4)	2
MEDOP 22	Medical Coding II	2.5
MEDOP 41B	Medical Insurance II	2
MEDOP 133	Body Basics for Medical Office Personnel (3)	
	OR	3–4
BIOL 190	Human Anatomy and Physiology (4)	
SPAN 216	Spanish for Bilinguals II (5)	
	OR	3–5
SPAN 226	Intermediate Conversation and Writing on Latin American Culture (3)	
Plus the required courses for the Medical Interpreter— Basic certificate 22–25		
Total units		40.5–46.5

🔒 Medical Office Management—Basic

Certificate of Achievement

Career/Technical (Major Code: 02312)

Prepares students who possess experience working in a medical office for a career in medical office management in various types of healthcare settings.

BUS 71	Keyboarding II (1)	
	OR	1–2
BUS 182	Keyboarding for Office Professionals (2)	
BUS 183	Business Mathematics	3
BUS 210	Business English	3
LDR 148	Business Presentation Skills—Bilingual (English/Spanish)	
	OR	2
LDR 149	Business Presentation Skills	
LDR 151	Human Resources and Labor Relations	3
MEDOP 133	Body Basics for Medical Office Personnel	3
MEDOP 229	Medical Terminology—Bilingual (English/Spanish)	
	OR	3
MEDOP 230	Medical Terminology	
MEDOP 231	Medical Office Procedures	4
Total units		22–23

Medical Office Management—Advanced

Certificate of Achievement

Career/Technical (Major Code: 02313)

Prepares students who possess experience working in a medical office for a career in medical office management in various types of healthcare settings.

ACCT 7	Basic Business Bookkeeping (3)		
	OR		3–4
ACCT 101	Principles of Accounting I (4)		
BUS 140	Business Law/Legal Environment of Business	3	
BUS 150	Principles of Management	3	
BUS 211	Communication in Business and Industry		
	OR		3
BUS 212	Business Communication		
BUS/CIS 239	Project Management	3	
BUS 290–293	Work Experience in Business I–IV (2–4)	2–4	
CIS 101	Introduction to Computers and Information Processing		4
Plus completion of Medical Office Management—Basic certificate			22–23
Total units			43–47

Medical Laboratory Technology

Higher Education Center at National City

Dean Christine M. Perri, M.A., Office 7103D, 619-216-6665, ext. 6668

Director Luis A. Nunez, M.A.

General Description

A medical laboratory technician performs routine clinical laboratory testing procedures to provide scientific information needed in diagnosis, prognosis, and treatment of disease. Technicians use sophisticated instrumentation for these evaluations which encompass quantitative and qualitative chemical and biological analyses of body specimens. Technicians function under the supervision of a qualified practitioner.

The program prepares students for a career in Medical Laboratory Technology through the studies in humanities, social and natural sciences, and the field of Medical Laboratory Technology. Emphasis is placed on the clinical practice in the context of laboratory medicine. Graduates are eligible to take and pass a nationally recognized certification examination.

Career Options

A Medical Laboratory Technicians (MLT) responsibilities will vary according to the size of the institution for which they are employed and the extent of services it offers. This work may include:

- Performing routine tests in medical laboratory for use in prevention, diagnosis, treatment, and management of disease.
- Collecting specimens, cultivating, isolating, and identifying micro-organisms for analysis.
- Using sophisticated biomedical instruments to generate accurate and reliable test results.
- Performing medical research to further control and cure diseases.

Program Goals

- To produce graduates eligible to take and pass nationally recognized certification examination.
- To assist graduates in securing entry-level employment as a medical laboratory technician.
- To facilitate and foster the values necessary to practice laboratory medicine within the ethical and legal framework of the profession and the community.
- To produce students who exhibit professional behavior consistent with current academic and professional standards.
- To develop students who can analyze, interpret and perform laboratory tests proficiently.
- To help students acquire and strengthen problem solving and critical thinking skills.
- To assist students in performing all necessary duties in a safe environment utilizing all the latest techniques in the laboratory arena.
- To produce students who have the knowledge and respect needed to safely deal with hazardous materials.
- To develop positive student attitudes for the pursuit of lifelong professional growth and development.

Degree/Certificate Options

Associate in Science Degree: Career/Technical

Medical Laboratory Technician

Major Code

02385

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



Some courses within this program may require additional coursework that must be completed prior to enrollment in those courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.