Academic Year

2021 - 2022

Computer Information Systems

Database Development Practitioner

Please visit your counselor to apply for certificates or degrees and for academic planning assistance.

Certificate of Achievement Requirements
- Completion of all major courses with a C grade or higher.

Note: A maximum of six quarter units may be transferred from other academic institutions.

Certificate of Achievement-Advanced Requirements
- Completion of all major courses with a C grade or higher.
- Demonstrated proficiency in English and mathematics as evidenced by eligibility for EWRT 1A, EWRT 1AH, EWRT 1AS with EWRT 1AT, or ESL 5 and eligibility for MATH 114.

Note: A maximum of 18 quarter units may be transferred from other academic institutions.

A.A./A.S. Degree Requirements
1. Completion of all General Education (GE) requirements (32-43 quarter units) for the A.A./A.S. degree. GE units must be completed with a minimum 2.0 GPA (C average).
2. Completion of all major courses with a C grade or higher. Major courses can also be used to satisfy GE requirements (except for Liberal Arts degrees).

   Note: A maximum of 22 quarter units from other academic institutions may be applied toward the major.
3. Completion of a minimum of 90 degree-applicable quarter units (GE and major units included). All De Anza courses must be completed with a minimum 2.0 GPA (C average). All De Anza courses combined with courses transferred from other academic institutions must be completed with a minimum 2.0 GPA (C average).

Note: A minimum of 24 quarter units must be earned at De Anza College.

Database Development Practitioner
Certificate of Achievement

The Database Development Practitioner Certificate of Achievement includes database management system fundamentals, SQL, PL/SQL, large scale data processing and big data and analytics. Students become proficient in organizing essential information and abstract relationships into a database. They also learn to update, maintain and repair databases. Database skills are applied by software engineers, business analysts, database architects, database administrators, database designers and reporting analysts.

Program Learning Outcomes: Upon completion, students will be able to
- Prepare and review a database design that includes logical and system representations
- Design, code and debug SQL and PL/SQL programs
- Apply performance tuning techniques to large-scale database applications
- Create, design and debug intermediate level programs with basic C programming language
- Create a database that is optimized to meet defined technical requirements

1. Meet the requirements for this certificate level.
2. Complete the following.

CIS 22A	Beginning Programming Methodologies in C++	4.5
CIS 22B	Intermediate Programming Methodologies in C++	4.5
or CIS 22BH	Intermediate Programming Methodologies in C++ - HONORS	

Complete four courses:	**17-17.5**
CIS 64A	Database Management Systems (4.5)
CIS 64B	Introduction to SQL (4.5)
CIS 64C	Introduction to PL/SQL (4.5)
CIS 64E	Fundamentals of Large Scale Cloud Computing (4)
CIS 64F	Introduction to Big Data and Analytics (4)
	Total Units Required 26-26.5

Database Development Practitioner

Certificate of Achievement-Advanced

A.A. Degree

The Certificate of Achievement-Advanced and A.A. degree prepare students for an entry-level position in the database field to work as a data analyst, business analyst, database project coordinator or database engineer.

Program Learning Outcomes: Upon completion, students will be able to
- Demonstrate requirement analysis, design and coding skills in languages commonly used in data management with large scale databases
- Apply skills for business analysis to convert data into information in real time, allowing business owners to make effective just-in-time decisions

Certificate of Achievement-Advanced
1. Meet the requirements for this certificate level.
2. Complete the following.

Complete one option:		**9**
Option 1:		
CIS 22A	Beginning Programming Methodologies in C++ (4.5)	
CIS 22B	Intermediate Programming Methodologies in C++ (4.5)	
or CIS 22BH	Intermediate Programming Methodologies in C++ - HONORS (4.5)	

Option 2:		
CIS 36A	Introduction to Computer Programming Using Java (4.5)	
CIS 36B	Intermediate Problem Solving in Java (4.5)	

Option 3:		
CIS 41A	Python Programming (4.5)	
CIS 41B	Advanced Python Programming (4.5)	

Complete four courses:		**17-17.5**
CIS 64A	Database Management Systems (4.5)	
CIS 64B	Introduction to SQL (4.5)	
CIS 64C	Introduction to PL/SQL (4.5)	
CIS 64E	Fundamentals of Large Scale Cloud Computing (4)	
CIS 64F	Introduction to Big Data and Analytics (4)	

Complete two courses:		**9**
CIS 9	Introduction to Data Science (4.5)	
CIS 64G	Data Visualization Methodology and Tools (4.5)	
CIS 64H	R Programming (4.5)	

Complete two courses:		**9**
CIS 18A	Introduction to Unix/Linux (4.5)	
CIS 18B	Advanced Unix/Linux (4.5)	
	Total Units Required 44-44.5	

A.A. Degree

Major	*Database Development Practitioner*	*44-44.5*
GE	*General Education (32-43 units)*	
Electives	*Elective courses required when major units plus GE units total is less than 90*	
	Total Units Required 90	