



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**INTRODUCTION TO ORACLE
CIS1895 3 Credit Hours**

Student Level:

This course is open to students on the college level in either the freshman or sophomore year.

Catalog Description:

CIS 1895 - INTRODUCTION TO ORACLE (3 hrs)

An introductory course for students to get an overview of the Oracle database including database updates, additions, deletions, and viewing data. Programming in PL/SQL, developing Oracle applications, and managing databases is covered.

Prerequisites:

Basic Computer Skills

Controlling Purpose:

This course is designed to help the student increase their knowledge concerning database updates, additions, deletions, and viewing data. The student will learn how to write programs in PL/SQL and build Oracle applications. In addition, the student will learn how to manage databases.

Learner Outcomes:

Upon completion of the course, the student will be able to access database data with SQL, write programs in PL/SQL, build relational schema, build applications in Oracle application express, secure database access, manage database space, protect the database and tune database instances/applications.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.

- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: INTRODUCTION TO DATABASES AND ORACLE

Outcomes: After completion of this unit, the student will have a working knowledge of the basic concepts of a database, database management systems, database applications, and Oracle.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain information management with databases
						Explain the components of Oracle: databases, instances, tables, SQL, data access, database users, sessions, SQL *Plus, Oracle Application Express
						List the requirements for the database server system
						Use basic Oracle XE skills

UNIT 2: ACCESSING DATABASE DATA WITH SQL

Outcomes: After completion of this unit, the student will have a working knowledge of the basic concepts of how applications use SQL statements and encompassing transactions to interact with an Oracle database system.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the role of SQL
						Retrieve data with queries
						Insert, update, and delete rows in tables
						Commit and roll back transactions
						Explain transaction design
						Build SQL with Oracle Application Express

UNIT 3: DATABASE ACCESS PROGRAMS WITH PL/SQL

Outcomes: After completion of this unit, the student will have a working knowledge of Oracle's procedural language, PL/SQL, which can be used to program an Oracle database server and associated applications.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain what is PL/SQL
						Write PL/SQL blocks
						Write PL/SQL programs using variables, program flow, interaction with databases, subprograms, record types, cursors, %TYPE and %ROWTYPE attributes, collections, and exception handling
						Write anonymous PL/SQL blocks
						Write stored procedures and functions
						Declare and use a package
						Create and use database triggers

UNIT 4: BASIC RELATIONAL SCHEME

Outcomes: After completion of this unit, the student will have a working knowledge of Oracle database objects and the logical concepts of database objects.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Describe schemas
						Describe database tables columns and datatypes
						Describe data integrity and integrity constraints
						Create and modify tables and integrity constraints
						Create views
						Create and use sequences
						Create synonyms
						Create normal indexes
						Explain the data dictionary
						Explore other object browser features

UNIT 5: ORACLE APPLICATION EXPRESS

Outcomes: After completion of this unit, the student will have a working knowledge of how to quickly design, build, test, and deploy a simple database application from start to finish using the Oracle application express application development environment.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the application development lifecycle
						Describe software modeling and the unified modeling language
						Build the application schema
						Load schema data
						Create an application(s)
						Run and test application(s)
						Refine an application(s)
						Maintain application(s)
						Deploy application(s)
						Manage application access and application users

UNIT 6: SECURING DATABASE ACCESS

Outcomes: After completion of this unit, the student will have a working knowledge of the various security features of Oracle XE that can be used to control user access to an Oracle database and Oracle application express applications.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Perform user management
						Perform privilege management
						Monitor resources and manage limits
						Display security information

UNIT 7: MANAGE DATABASE SPACE

Outcomes: After completion of this unit, the student will have a working knowledge of the basics for managing the following storage structures in an Oracle database: tablespaces, data files, data, index, temporary, undo segments, extents, and data blocks.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain logical vs. physical storage structures
						Create and manage permanent tablespaces and data files
						Manage storage for tables and indexes
						Manage undo tablespaces and retention times
						Manage temporary tablespaces

UNIT 8: PROTECTING THE DATABASE

Outcomes: After completion of this unit, the student will have a working knowledge of the database backup and recovery mechanisms of Oracle XE that can be used to protect and repair a database.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						List database problems and solutions
						Explain Oracle database backup and recovery
						Configure Oracle XE database protection
						Back up databases with recovery manager
						List and explain database backup and recovery options
						Recover databases from problems
						Use Oracle flashback features

UNIT 9: TUNE APPLICATION AND DATABASE INSTANCE PERFORMANCE

Outcomes: After completion of this unit, the student will have a working knowledge of performance tuning for an Oracle database application system.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain Oracle tuning concepts
						Explain tuning statistics
						Tune applications and SQL
						Tune database instances

Projects Required:

Various database projects.

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

None

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Timeframe:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.