Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

SYLLABUS OF FISC417

Semester and Year	2019 Spring (March 1, 2019 - March 29, 2019)
Course Name	Oracle System Basic
Course Code	FISC417
Course Credits	4
Prerequisite Course	SQL Language
Instructor	Prof. Mei Han
Time/Place	Class 2016FISC (Y01) 8:00-17:30 Friday, Room B208 (Week 1-5)

Course Description

- This course introduces core features of Oracle database architecture
- Help the students on how create an Oracle database using DBCA
- Manage the database instance and the ASM instance
- Manage database storage structures, data concurrency, and undo data
- Implement Oracle database auditing
- Database maintenance
- Performance management
- Perform database backups and recovery
- Perform data moving

Student Learning Objectives

By the end of the course the students should have the ability to work with Oracle database from installing Oracle Software to creating an Oracle database using DBCA. The students should manage database storage structures, data concurrency, and undo data, and perform database backups, recovery and moving.

Library Source

Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

The course contents are not limited to the text book, a variety of Oracle database books would strengthen the fundamental knowledge of the SQL database as well as Oracle database books should be read in order to practice.

Teaching Methods

This course consists of lectures, discussions, and hands-on projects. Students must be prepared to discuss the assigned chapters during class.

Grade Criterion

Component	Weight	Description
Final Exam	40%	A cumulative final examination will be given based on all of the contents of the class
Quizzes and Homework	40%	There will be a number of ad-hoc/pop quizzes or tests during the semester. The purpose of the quizzes and tests is to ensure that students keep up with the contents. Homework problems will be assigned throughout the term, including but not limited to: terminologies, practice exercises, and project assignments
Participation	10%	Individuals will be asked to participate individually in a question and answer 10 times during the semester. Students are required to meet with their teachers every other week. Their performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	After Midterm
Attendance	10%
Participation	10%
Quizzes and Homework	40%
Final exam	40%
Total	100%

Grading Policy

A+ 97-100 A 93-96 A- 90–92 B+ 87-89 B 83-86 B- 80–82

C+ 75-79 C 70-74 C- 67–69 D+ 63–66 D 60-62 F 0-59

Exam Schedule

- Final Exam: March 29, 2018

Assessment of Student Performance

- ***Homework***
  - Students should finish their homework (except for group projects) by themselves. Copying from others will be treated as cheating. Students' homework scored will be lowered. Students should hand in all assignments promptly and on time. Late assignment will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Assignment turned in late without proof of illness or had an excused absence will be reduced in score by 50%.
  - Assignment should be printed out. Anything that cannot be read will be marked wrong. Printing requirements are as followed: single space between lines, double space between paragraphs, font size is 12 (maximum). Grammar error can reduce 20% of your score.

- ***Attendance***

Attendance in class is required for all students taking courses at the Capital University of Economics and Business Overseas Chinese College.

  - Being late for 15 minutes or more is considered an absence.
  - Five hours or above of unexcused absences will result in the lowering of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.
  - **30% class hours** of any kind of absences will result in a failing grade (F), you have to withdraw from this class and re-enroll in the future semester.
  - An incomplete grade (I) will be considered in case of medical or family emergencies.

- ***Participation***
  - Students should participate in classes actively**.** Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.
  - Students are recommended to build study group, which can be helpful for group project and presentations.
  - Students should also use office hour to ask questions or talk with the instructor for good communication and effective learning. Any misbehavior and non-class related activities in class will result in the lowering of the participation grade, including ringing beepers and **cell phones.**
  - All above behaviors will be solely evaluated by the instructor for scoring.

Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Course Content

Modular Name	Course Contents
Oracle database Architecture	1. List the major architectural components of Oracle Database 2. Explain the memory structures 3. Describe the background processes 4. Correlate the logical and physical storage structures 5. Describe ASM storage components
Installing your Oracle Software	1. Describe your role as a database administrator (DBA) and explain typical tasks and tools 2. Plan an Oracle software installation 3. Install Oracle Grid Infrastructure for a standalone server 4. Install the Oracle database software
Creating an Oracle Database Using DBCA	1. Create a database by using the Database Configuration Assistant (DBCA) 2. Generate database creation scripts with the DBCA 3. Manage database design templates with the DBCA 4. Perform additional tasks with the DBCA
Managing the Database Instance	1. Start and stop the Oracle database and components 2. Use Oracle Enterprise Manager 3. Access a database with SQL*Plus 4. Modify database initialization parameters 5. Describe the stages of database startup 6. Describe database shutdown options 7. View the alert log 8. Access dynamic performance views
Managing the ASM Instance	1. Describe the benefits of using ASM 2. Manage the ASM instance 3. Create and drop ASM disk groups 4. Extend ASM disk groups 5. Retrieve ASM metadata by using various utilities
Configuring the Oracle Network Environment	1. Use Enterprise Manager to: Create additional listeners Create Oracle Net Service aliases Configure connect-time failover 2. Control the Oracle Net Listener 3. Use tnsping to test Oracle Net connectivity 4. Identify when to use shared servers and when to use dedicated servers
Managing Database Storage Structures	1. Describe the storage of table row data in blocks 2. Create and manage tablespaces 3. Obtain tablespace information
Administering User Security	1. Create and manage database user accounts: Authenticate users Assign default storage areas (tablespaces) 2. Grant and revoke privileges 3. Create and manage roles

Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Modular Name	Course Contents
	4. Create and manage profiles: Implement standard password security features Control resource usage by users
Managing Data Concurrency	1. Describe the locking mechanism and how Oracle manages data concurrency 2. Monitor and resolve locking conflicts
Managing Undo Data	1. Explain DML and undo data generation 2. Monitor and administer undo data 3. Describe the difference between undo data and redo data 4. Configure undo retention 5. Guarantee undo retention 6. Use the Undo Advisor
Implementing Oracle Database Auditing	1. Describe DBA responsibilities for security and auditing 2. Enable standard database auditing 3. Specify audit options 4. Review audit information 5. Maintain the audit trail
Database Maintenance	1. Manage optimizer statistics 2. Manage the Automatic Workload Repository (AWR) 3. Use the Automatic Database Diagnostic Monitor (ADDM) 4. Describe and use the advisory framework 5. Set alert thresholds 6. Use server-generated alerts 7. Use automated tasks
Performance Management	1. Use Enterprise Manager to monitor performance 2. Use Automatic Memory Management (AMM) 3. Use the Memory Advisor to size memory buffers 4. View performance-related dynamic views 5. Troubleshoot invalid and unusable objects
Backup and Recovery Concepts	1. Identify the types of failure that can occur in an Oracle database 2. Describe ways to tune instance recovery 3. Identify the importance of checkpoints, redo log files, and archive log files 4. Configure the fast recovery area 5. Configure ARCHIVELOG mode
Performing Database Backups	1. Create consistent database backups 2. Back up your database without shutting it down 3. Create incremental backups 4. Automate database backups 5. Manage backups and view backup reports 6. Monitor the fast recovery area
Performing Database Recovery	1. Determine the need for performing recovery 2. Access different interfaces (such as Enterprise Manager and command line)

Modular Name	Course Contents
	3. Describe and use available options, such as Recovery Manager (RMAN) and the Data Recovery Advisor 4. Perform recovery: Control file Redo log file Data file
Moving Data	1. Describe ways to move data 2. Create and use directory objects 3. Use SQL*Loader to load data from a non-Oracle database (or user files) 4. Use external tables to move data via platform-independent files 5. Explain the general architecture of Oracle Data Pump 6. Use Data Pump Export and Import to move data between Oracle databases

*** denotes self-study**

Topical Course Outline

Week	Date	Topics
1	0225-0301	Course Introduction Oracle database Architecture Installing your Oracle Software Creating an Oracle Database Using DBCA
2	0304-0308	Managing the Database Instance Managing the ASM Instance Configuring the Oracle Network Environment Managing Database Storage Structures
3	0311-0315	Administering User Security Managing Data Concurrency Managing Undo Data
4	0318-0322	Implementing Oracle Database Auditing Database Maintenance Performance Management
5	0325-0329	**Qingming Festival** Backup and Recovery Concepts Performing Database Backups Performing Database Recovery Moving Data **Final Exam**

Note: The chapters or sections marked with * above may leave for your self –study, this is your duty to learn and understand, they are also may be included in the quizzes or exams.

Cheating and Plagiarism

- **Cheating is not tolerated**. Any student caught cheating on a quiz; test or exam will be given a mark of zero (0) for the particular work.
- At the beginning of the semester the definition of plagiarism will be carefully explained, when any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source notes.

Important Dates

Spring Semester, 2019	February 25, 2019— July 14, 2019
Feb. 24	Registration
Feb. 25	Classes Begin
Apr. 5	Qingming Festival (tentative)
Apr. 19	Spring Sports (tentative)
May 1	Labor Day Holiday (tentative)
Jun. 7	Duanwu Festival (tentative)
Jun. 17-21	Sophomore and Junior students' Final Exam
Jun. 24- Jul. 14	Sophomore and Junior students' Social Practice
Jun. 29-Jul. 7	Revision and Final Exam Period
Jul. 8-Jul. 12	Freshmen's Final Exam
Jul. 15	Summer Vacation Begins

Note: *This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified and a new syllabus will be given.*