Subject Code	CS-404	Subject Name	Database Management System
Semester	First	Course Coordinator	Daw Khaing
Credit point	3		
Hours	37.5 hours		
period	45 periods (1 period with 50 minutes) /3 periods for 15 Weeks		

Course Description

This course also provides the Security and integrity, transaction management, recovery management of Database management system and also provides the distributed databases. It exposes the student to the fundamental concepts and techniques in database management system and also provides a foundation for research in databases. The course uses a problem-based approach to learning.

Course Objectives
 ➢ To apply the security and integrity constraints of Database Management System
 ➢ To understand the concept of a database transaction and related database facilities, including concurrency control, journaling, backup and recovery, and data object locking and protocols
 ➢ To understand the distributed databases and its functions.
 ➢ To design and implement the security and integrity constraint on a small database project for real world application

Learning Outcomes
At the end of this module, the successful student will:
 ➢ Be able to write Security and integrity constraint on a relational databases and tables
 ➢ Be able to explain the database transaction, concurrency control and recovery protocols
 ➢ Be able to understand the distributed databases and its problems and benefits
 ➢ Be able to design and implement the constraint on a real world application

Prerequisite course
 ➢ Fundamental of database management System
 ➢ Basic Understanding of Structured Query Language

Major topic covered in the course
 ➢ Security
 ➢ Integrity
 ➢ Concurrency
 ➢ Recovery
 ➢ Distributed Databases

Textbook
 ➢ An Introduction to Database Management System, C.J.Date, 7th edition ,2000

References Book
 1. Database System, A practical Approach to Design ,4th Edition
 2. Database System Concepts, AviSilberschatz, HenryF.Korth, and S.Sudarshan.0-07-2958863. sixth Edition. McGraw-Hill.

3. Modern Database Management System, Jeffery A. Hoffer, V.Ramesh,Heikki Topi , 12th edition, 2016
4. Fundamantals of Database Systems, Ramez Elmasri and Shamkant B.Navathe, , sixth edition,2008
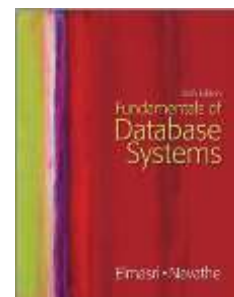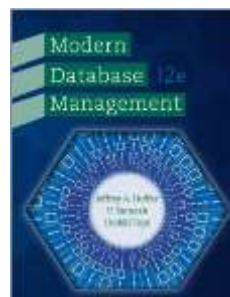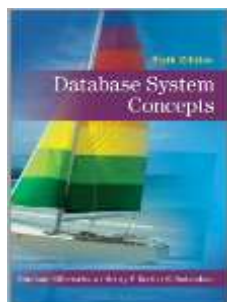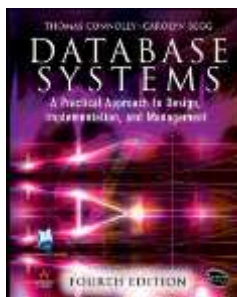
Learning Assessment

Paper Exam	:	60%
Practical Exam	:	10%
Quiz and Assignment	:	10%
Tutorial	:	10%
Project	:	10%

Course Policy

Participation

Attendance is a prerequisite, not a substitute for class participation. Participation mechanisms include: (1) responding to questions asked in class, (2) initiating discussions on new points in class and (3) discussing cases and offering solutions to problems.

Tutorial Test and Quizzes

The student is expected to complete the tutorial tests and Quizzes at the scheduled time. If a tutorial test or quiz is missed, there will be no make-ups tutorial or quiz for missing student. No make –ups test or resubmission and extra credit test are not available in this course. Tutorial tests and quizzes are based upon all learning objectives to be reached before the scheduled date.

Assignment

There will be theory and practical assignments which must be submitted. The assignment may be individual or Group. The individual assignment is individual work and tests the ability of each student. Group assignment is team work and tests the ability of collaboration of student to complete the given work.

The due dates for the given assignments are going to be declared by the instructor and there will be no make-ups or individual extensions. No make–ups assignments or resubmission and extra credit assignments are not available in this course.

In addition to the hardcopies of assignments, electronic (and certifiably virus free) copies should be e-mailed to instructor on the date they are due.

Project

The paper project will be prepared and make the presentation at the end of first semester. The project must be based on the lecture of this course and it is group assignment. The project guideline and schedule are declared by the instructor.

Lecture Plan

CS-404   **: Database Management System**   **First Semester**

Text Book   : An Introduction to Database Systems by C.J.Date (7th Edition)

Period   : 45 Periods for 15 weeks (3 period for 15 weeks)

No	Chapter	Page	Period	Remarks
	Chapter 16 Security			
1	16.1 Introduction	504-506	1	
2	16.2 Discretionary Access Control	506-512	1	
3	16.3 Mandatory Access Control	512-515	1	
4	16.4 Statistical databases	515-520	1	
5	16.5 Data Encryption	520-524	2	
6	16.6 SQL facilities	525-528	1	
7	Exercises	529-530	2	
	Chapter 8 Integrity			
8	8.1, 8.2	249-252	2	
9	8.3, 8.4	252-253	2	
10	8.5 Database Constraints	254	1	
11	8.6, 8.7	254-257	2	
12	8.8 Keys	258-266	1	
13	8.9 SQL Facilities	267-271	1	
14	Exercises	272-274	2	
	Chapter 14 Recovery			
15	14.1, 14.2 Transaction	454-457	1	
16	14.3 Transaction Recovery	457-459	1	

17	14.4 System Recovery	460-462	1	
18	14.5 Media Recovery, 14.6 Two-phase Commit	462-464	1	
19	Exercises and Review		2	
	Chapter 15 Concurrency			
20	15.1 Introduction	473-474	1	
21	15.2 Three Concurrency Problems	474-477	1	
22	15.3 Locking	477-478	1	
23	15.4 Concurrency Problems Revisited	478-481	2	
24	Exercise	491-493	1	
25	15.5	482	1	
26	15.6 Serializability	482-484	1	
27	15.7 Isolation Level	484-486	1	
28	15.8 Intent Locking	486-488	1	
29	15.9	488-490	1	
30	Exercises and Review	491-493	1	
	Chapter 20 Distributed Databases			
31	20.1, 20.2	651-656	1	
32	20.3 Twelve Objectives	656-663	2	
33	20.4 Problems of Distributed Systems	664-675	2	
34	20.5 Client/ Server Systems	675-678	1	
35	20.6 DBMS Independence	678-683	1	
36	20.7 SQL Facilities	683-684	1	
37	Exercises	685-686	1	
38	Revision & Old Question		2	
	Total		45	