

សាកលវិទ្យាល័យភូមិន្ទនីតិសាស្ត្រ និងវិទ្យាសាស្ត្រសេដ្ឋកិច្ច
កម្មវិធីមុខវិជ្ជាលម្អិត (Course Syllabus)
Database Concepts and Microsoft Access
INF211

មុខវិជ្ជា : Database Concepts and Microsoft Access(INF211)

ស្រាវជ្រាវ : នាង ហន

បង្រៀនសម័យ: ១

១- ការពិពណ៌នាអំពីមុខវិជ្ជា (Course Description)

មុខវិជ្ជាសិក្សានេះគ្របដណ្តប់មូលដ្ឋានគ្រឹះនៃស្ថាបត្យកម្មមូលដ្ឋានទិន្នន័យ ការគ្រប់គ្រងមូលដ្ឋានទិន្នន័យ ប្រព័ន្ធនិងប្រព័ន្ធមូលដ្ឋានទិន្នន័យ។ គោលការណ៍និងវិធីសាស្ត្រនៃការរចនាមូលដ្ឋានទិន្នន័យ, និង បច្ចេកទេសសម្រាប់ការអភិវឌ្ឍកម្មវិធីមូលដ្ឋានទិន្នន័យ។

២- គោលបំណងនៃមុខវិជ្ជា (Course Objectives)

គោលបំណងសំខាន់នៃការសិក្សាមុខវិជ្ជានេះគឺ៖

- ពិពណ៌នាទ្រឹស្តី សេចក្តីផ្តើមមូលដ្ឋានទិន្នន័យ
- ពិភាក្សាការរួមបញ្ចូលមូលដ្ឋានទិន្នន័យ
- បង្កើតទំនាក់ទំនងមូលដ្ឋានទិន្នន័យ ជាមួយនឹងតារាង
- បង្កើត queries
- បង្កើតរបាយការណ៍ reports
- បង្កើត forms
- បង្កើត Macros
- និងបង្កើត Modules...

៣- មាតិកាមុខវិជ្ជា (Course Outline)

សប្តាហ៍	ចំណងជើងមេរៀន	ខ្លឹមសារមេរៀន	រយៈពេល
	ជំពូកទី១: INTRODUCTION		
១	Introduction: - Course requirements grading Syllabus - Database Concepts	- Course requirements & grading Syllabus - Fundamentals of Database • What is a database? • Defining a data store	២ម៉ោង៣០
២	FILE PROCESSING AND DATABASE SYSTEM	- File processing system - Database System - The differences between file processing system and database - The importance of database system - The architecture of database system	២ម៉ោង៣០

		<ul style="list-style-type: none"> - Database management system - Types of database - Data Redundancy 	
ជំពូកទី២: DATA MODEL AND DATABASE MODEL			
៣	DATA MODEL	<ul style="list-style-type: none"> - Business Rules - Evolution of Data Model <ul style="list-style-type: none"> o hierarchy <ul style="list-style-type: none"> • network • Relational • Entity Relationship • Object-oriented 	២ម៉ែ៣០
៤	DATA MODEL: Continued	<ul style="list-style-type: none"> - Degree Of Abstraction - Overview of external model, conceptual, physical and internal model. 	២ម៉ែ៣០
៥	DATABASE MODEL	<ul style="list-style-type: none"> - Logical View of database - Tables & their characteristic - Keys - Integrity rules - Relational Set Operator - Data Dictionary & System Catalog - Relationship within relational database 	២ម៉ែ៣០
ជំពូកទី៣: FUNDAMENTALS OF DATABASE DESIGN			
៦	CREATING TABLES AND ADDING RECORDS	<ul style="list-style-type: none"> - Creating a table using the Table Wizard - Datasheet view - Adding a record - Saving changes - Moving around the datasheet - Finding a record - Modifying and deleting records 	២ម៉ែ៣០
៧	DESIGNING TABLE STRUCTURES	<ul style="list-style-type: none"> - Table design - hints and tips - Creating tables - Saving tables - Field properties - Field size property - Format and input mask properties - Caption property - Default value property - Required property - Allow zero length property - Indexed property 	២ម៉ែ៣០
	<i>Working with Data</i>	<ul style="list-style-type: none"> - Designing Table Structures: Continued - Sorting data - Filtering data - Using advanced filters 	
ជំពូកទី៤: DATABASE QUERIES			
៨	<i>Basic Queries</i>	<ul style="list-style-type: none"> - What is a query? - Creating a query - Modifying a query - Restricting records returned by a query - Simple calculated fields - Summary queries 	២ម៉ែ៣០
ជំពូកទី៥: INTRODUCTION TO STRUCTURED QUERY LANGUAGE (SQL)			
៩	Data Definition Commands Data Manipulation Command	<ul style="list-style-type: none"> - Adding Table Rows, - Listing Table Rows, - Updating Table Rows, - Deleting Table Rows, - Inserting Table Rows 	២ម៉ែ៣០
១០	Select Queries	<ul style="list-style-type: none"> - Selecting Rows with Conditional Restrictions - Arithmetic Operator: Rules of Precedence - Logical Operators: AND, OR, NOT 	២ម៉ែ៣០

		- Special Operators	
១១	ប្រឡងពាក់កណ្តាលឆមាស		២ម៉ែត្រ
១២	Advanced Data Definition Commands	<ul style="list-style-type: none"> - Changing Column's Data Type - Changing Column's Data Characteristics - Adding and Dropping a Column - Advanced Data Updates - Copying Parts of Tables - Deleting a table from the Database. 	២ម៉ែត្រ
១៣	Advanced Select Queries Joining Database Tables	<ul style="list-style-type: none"> - Ordering a Listing - Listing Unique Values - Grouping Data - Joining Database Tables 	២ម៉ែត្រ
	ជំពូកទី៦: DATABASE FORMS		
១៤	<i>Forms</i>	<ul style="list-style-type: none"> - What is a form? - Using AutoForm to design forms - Using Wizards to design forms - Entering data using a form - Form - Subform 	២ម៉ែត្រ
	ជំពូកទី៧: REPORTS		
១៥	<i>Basic Reports</i>	<ul style="list-style-type: none"> - Reporting from Access - Printing from datasheet view - AutoReports - Designing a report Using Report Wizards - Label reports - Modifying reports 	២ម៉ែត្រ
	ជំពូកទី៨: MACROS AND MODULES		
១៦	MACROS MODULES	<ul style="list-style-type: none"> - Events and Macros - Visual Basic for Application (VBA) - Creating a Module 	២ម៉ែត្រ
១៧	MODULES	<p>Modules: Continued</p> <ul style="list-style-type: none"> - Creating a Procedure & Calling - Creating a Function & Calling - Writing Procedures With Arguments & Calling - Writing Code: <ul style="list-style-type: none"> • Code within a Form • Code within a Report • Code within a Module file • Code within a Class Module file 	២ម៉ែត្រ
១៨	ជំពូកទី៩: DATABASE MAINTENANCE		
	Access file maintenance	<ul style="list-style-type: none"> - Backing up development versions and data files - Decompiling and recompiling development copies - Simplifying the Compact and Repair process - Easy deployment of new client versions 	២ម៉ែត្រ
សរុប			៤៥ម៉ែត្រ
	ប្រឡងឆមាស		

៤- ការវាយតម្លៃការសិក្សា (Assessment)

លរ	បរិយាយ	ពិន្ទុ
1	វត្តមាន	10
2	វិន័យ	10
3	កិច្ចការស្រាវជ្រាវ	15
4	ប្រឡងពាក់កណ្តាលឆមាស	25
5	ប្រឡងឆមាស	40
	សរុប	100

៥- ឯកសារយោង (References)

- *Fundamentals of Database Systems*, Sixth Edition, ISBN-13: 978-0-136-08620-8, Ramez A. Elmasri, Shankant B. Navathe (2011).
- *Database Systems: Design, Implementation, and Management*, Eighth Edition, ISBN-13: 978-1-4239-0201-0 ISBN-10: 1-4239-0201-7, Peter Rob and Carlos Coronel (2009)
- *Database System: A Practical Approach to Design, Implementation and Management(4nd Edition)*, ISBN: 0321210255, Thomson Connolly and Carolyn Begg(2005), Addison Wesley
- *Database: Design,Application Development, & Administration (2nd. Edition)*, Michael V. Mannino (2002), McGraw Hill Publication.
- *Designing Relational Database Systems*, ISBN: 073560634X, 9780735606340, Rebecca Riordan (1999).

ROYAL UNIVERSITY OF LAW AND ECONOMICS
Course Syllabus
Database Concepts and Microsoft Access
INF211

Course : Database Concepts and Microsoft Access (INF211)

Lecturer : Mr. NEANG HON

Semester : I

1- Course Description

This course covers fundamentals of database architecture, database management systems, and database systems. Principles and methodologies of database design, and techniques for database application development.

2- Course Objectives

- Describe underlying database theories and concepts.
- Discuss database integration.
- Create relational databases with multiple tables.
- Create reports.
- Write queries.
- Create forms.
- Create Macros
- Create Modules

3- Course Outline

Week	Title	Sub-Titles	Duration
CHAPTER1: INTRODUCTION			
1	Introduction: - Course requirements grading Syllabus - Database Concepts	- Course requirements & grading Syllabus - Fundamentals of Database <ul style="list-style-type: none"> • What is a database? • Defining a data store 	2 ^h 30
2	FILE PROCESSING AND DATABASE SYSTEM	- File processing system - Database System - The differences between file processing system and database - The importance of database system - The architecture of database system - Database management system - Types of database - Data Redundancy	2 ^h 30
CHAPTER2: DATA MODEL AND DATABASE MODEL			
3	DATA MODEL	- Business Rules - Evolution of Data Model o hierarchy <ul style="list-style-type: none"> • network • Relational • Entity Relationship • Object-oriented 	2 ^h 30
4	DATA MODEL: Continued	- Degree Of Abstraction - Overview of external model, conceptual, physical and internal model.	2 ^h 30
5	DATABASE MODEL	- Logical View of database	2 ^h 30

		<ul style="list-style-type: none"> - Tables & their characteristic - Keys - Integrity rules - Relational Set Operator - Data Dictionary & System Catalog - Relationship within relational database 	
CHAPTER3: FUNDAMENTALS OF DATABASE DESIGN			
6	CREATING TABLES AND ADDING RECORDS	<ul style="list-style-type: none"> - Creating a table using the Table Wizard - Datasheet view - Adding a record - Saving changes - Moving around the datasheet - Finding a record - Modifying and deleting records 	2 ^h 30
7	DESIGNING TABLE STRUCTURES	<ul style="list-style-type: none"> - Table design - hints and tips - Creating tables - Saving tables - Field properties - Field size property - Format and input mask properties - Caption property - Default value property - Required property - Allow zero length property - Indexed property 	2 ^h 30
	<i>Working with Data</i>	<ul style="list-style-type: none"> - Designing Table Structures: Continued - Sorting data - Filtering data - Using advanced filters 	
CHAPTER4: DATABASE QUERIES			
8	<i>Basic Queries</i>	<ul style="list-style-type: none"> - What is a query? - Creating a query - Modifying a query - Restricting records returned by a query - Simple calculated fields - Summary queries 	2 ^h 30
CHAPTER5: INTRODUCTION TO STRUCTURED QUERY LANGUAGE (SQL)			
9	Data Definition Commands Data Manipulation Command	<ul style="list-style-type: none"> - Adding Table Rows, - Listing Table Rows, - Updating Table Rows, - Deleting Table Rows, - Inserting Table Rows 	2 ^h 30
10	Select Queries	<ul style="list-style-type: none"> - Selecting Rows with Conditional Restrictions - Arithmetic Operator: Rules of Precedence - Logical Operators: AND, OR, NOT - Special Operators 	2 ^h 30
11	Mid Term Exam		2 ^h 30
12	Advanced Data Definition Commands	<ul style="list-style-type: none"> - Changing Column's Data Type - Changing Column's Data Characteristics - Adding and Dropping a Column - Advanced Data Updates - Copying Parts of Tables - Deleting a table from the Database. 	2 ^h 30
13	Advanced Select Queries Joining Database Tables	<ul style="list-style-type: none"> - Ordering a Listing - Listing Unique Values - Grouping Data - Joining Database Tables 	2 ^h 30
CHAPTER6: DATABASE FORMS			
14	<i>FORMS</i>	<ul style="list-style-type: none"> - What is a form? - Using AutoForm to design forms - Using Wizards to design forms 	2 ^h 30

		<ul style="list-style-type: none"> - Entering data using a form - Form - Subform 	
CHAPTER7: REPORTS			
15	BASIC REPORTS	<ul style="list-style-type: none"> - Reporting from Access - Printing from datasheet view - AutoReports - Designing a report Using Report Wizards - Label reports - Modifying reports 	2 ^h 30
CHAPTER8: MACROS AND MODULES			
16	MACROS MODULES	<ul style="list-style-type: none"> - Events and Macros - Visual Basic for Application (VBA) - Creating a Module 	2 ^h 30
17	MODULES	Modules: Continued <ul style="list-style-type: none"> - Creating a Procedure & Calling - Creating a Function & Calling - Writing Procedures With Arguments & & Calling - Writing Code: <ul style="list-style-type: none"> • Code within a Form • Code within a Report • Code within a Module file • Code within a Class Module file 	2 ^h 30
18	CHAPTER9: DATABASE MAINTENANCE		
	ACCESS FILE MAINTENANCE	<ul style="list-style-type: none"> - Backing up development versions and data files - Decompiling and recompiling development copies - Simplifying the Compact and Repair process - Easy deployment of new client versions 	2 ^h 30
Total			45^h00
	Final Examination		

4- Assessment :

- Attendance	10%
- Discipline	10%
- Mid-Term	25%
- Assignment	15%
- Final Examination	40%
<hr style="width: 100%;"/>	
Total	100%

5- References

- *Fundamentals of Database Systems*, Sixth Edition, ISBN-13: 978-0-136-08620-8, Ramez A. Elmasri, Shankant B. Navathe (2011).
- *Database Systems: Design, Implementation, and Management*, Eighth Edition, ISBN-13: 978-1-4239-0201-0 ISBN-10: 1-4239-0201-7, Peter Rob and Carlos Coronel (2009)
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