SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

PROFESSIONAL COMMUNICATION SKILLS - MCA-1108

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : NA

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
2	0	0	2.00	60	40	0	0	100

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
Total Hours			

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	Understand	Apply	Analyze	Evaluate	Create

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application

N : Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

9 . LIST OF EXPERIMENTS :

SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

HUMAN VALUES & PROFESSIONAL EITHICS - MCA-1107

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : NA

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
2	0	0	2.00	0	0	40	60	100

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
Total Hours			

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	Understand	Apply	Analyze	Evaluate	Create

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application

N : Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

9 . LIST OF EXPERIMENTS :

SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

E-COMMERCE/M-COMMERCE - MCA-1106

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : The purpose of this elective course is to introduce students about the isues that a modern day manager need to address while doing business in a digital world.

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
2	0	0	2.00	0	0	40	60	100

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
1	**Introduction to E-business and E-commerce** Introduction to E-business and E-commerce	6	
2	**Case 1: A short history of Facebook Case 2: Betfair profits with C2C online gambling service Case 3: North West Supplies extends its reach online (caselets are available in chapter-1 of text book** Case 1: A short history of Facebook Case 2: Betfair profits with C2C online gambling service Case 3: North West Supplies extends its reach online (caselets are available in chapter-1 of text book	8	
3	**E-Marketplace and Enviornment Case 4: eBay – the world's largest e-business- discussion Case 5: The impact of B2B reverse auctions Case 6: Zopa launches a new lending model** Case 4: eBay – the world's largest e-business- discussion Case 5: The impact of B2B reverse auctions Case 6: Zopa launches a new lending model	8	
4	**E-business infrastructure Case:7 Innovation at Google** E-business infrastructure Case:7 Innovation at Google	8	
5	**E-business strategy Case:8 Capital One creates value through e-business** E-business strategy Case:8 Capital One creates value through e-business	8	

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
6	**E-Marketing Case: 9 The new Napster changes the music marketing mix** E-Marketing Case: 9 The new Napster changes the music marketing mix	8	
Total Hours		**46**	

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
10.00	15.00	15.00	20.00		

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application **N :** Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

8 . REFERENCES BOOKS :

1 E-Business and E-Commerce Management: Strategy Implementation and Practice, E-Business and E-Commerce Management: Strategy Implementation and Practice, David Chaffey, David Chaffey, 0

10. LIST OF OPEN-SOURCE SOFTWARE/LEARNING WEBSITE :

1 https://geeksforgeeks.org/difference-between-e-commerce-and-m-commerce/?ref=header_search

SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

ADVANCE DATABASE MANAGEMENT SYSTEM - MCA-1105

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : Understand the relational database design principles. Familiar with the basic issues of transaction processing and concurrency control. Familiar with database storage structures and access techniques.

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
3	0	4	5.00	60	40	30	20	150

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
1	**INTRODUCTION:** • An example; Characteristics of Database approach; • Actors on the screen; Workers behind the scene; • Advantages of using DBMS approach; A brief history of database applications; when not to use a DBMS. • Data models, schemas and instances; Three-schema architecture and data independence; Database languages and interfaces; • The database system environment; Centralized and client-server architectures; • Classification of Database Management systems.	6	
2	**ENTITY-RELATIONSHIP MODEL** • Using High-Level Conceptual Data Models for Database Design; • An Example Database Application; • Entity Types, Entity Sets, Attributes and Keys; • Relationship types, Relationship Sets, Roles and Structural Constraints; Weak Entity Types; Refining the ER Design; • ER Diagrams, Naming Conventions and Design Issues; • Relationship types of degree higher than two.	6	
3	**RELATIONAL MODEL AND RELATIONAL ALGEBRA** • Relational Model Concepts; Relational Model Constraints and Relational Database Schemas; • Update Operations, Transactions and dealing with constraint violations; • Unary Relational Operations: SELECT and PROJECT; Relational Algebra Operations from Set Theory; • Binary Relational Operations : JOIN and DIVISION; • Additional Relational Operations; Examples of Queries in Relational Algebra; Relational Database Design Using ER- to-Relational Mapping.	8	

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
4	**SQL** • SQL Data Definition and Data Types; • Specifying basic constraints in SQL; • Schema change statements in SQL; • Basic queries in SQL; More complex SQL Queries. • Insert, Delete and Update statements in SQL; Specifying constraints as Assertion and Trigger; Views (Virtual Tables) in SQL; • Additional features of SQL; Database programming issues and techniques; Embedded SQL, Dynamic SQL; • Database stored procedures and SQL /PSM	16	
5	**DATABASE DESIGN** • Informal Design Guidelines for Relation Schemas; • Functional Dependencies; Normal Forms Based on Primary Keys; • General Definitions of Second and Third Normal Forms; • Boyce-Cod Normal Form	6	
6	**TRANSACTION MANAGEMENT** • The ACID Properties; • Transactions and Schedules; • Concurrent Execution of Transactions; • Lock- Based Concurrency Control; • Performance of locking; Transaction support in SQL; • Introduction to crash recovery.	6	
Total Hours		**48**	

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
15.00	15.00	20.00	10.00		

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application **N :** Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

10. LIST OF OPEN-SOURCE SOFTWARE/LEARNING WEBSITE :

1 https://www.oracle.com/database/technologies/database-11g-express-edition.html

SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

SOFTWARE ENGINEERING - MCA-1103

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : To provide the idea of decomposing the given problem into Analysis, Design, Implementation, Testing and Maintenance phases.

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
2	0	0	2.00	60	40	0	0	100

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
1	**INTRODUCTION:** • introduction to software engineering, • defining software, changing nature of software, • attributes of a good software, software product, • software development life cycle, • software processes, software engineering practices, • software myths	4	
2	**SOFTWARE PROCESS MODELS:** • generic process model (defining framework activity, identifying task set), process assessment & improvement, waterfall process model, • incremental process model, spiral process model, prototyping software process model, evolutionary process model, component based process model, • introduction to basic concepts of agile software development	4	
3	**PROJECT MANAGEMENT CONCEPTS** • management activities, project planning, • project scheduling, risk analysis and management, • reactive vs. Proactive risk strategies, • software metrics and measurement, software risks, risk identification, risk projection, risk refinement risk mitigation, monitoring and management.	4	
4	**SOFTWARE REQUIREMENT ENGINEERING:** • software requirements, • requirement engineering, • extraction and specification, • feasibility study, • requirements modeling, • object oriented Analysis.	4	
5	**DESIGN CONCEPTS** • object oriented design, architectural design, component level design, • user interface design, distributed systems architecture, • real time software design, user interface design, pattern based design	6	

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
6	**SOFTWARE PROCESS AND METRICS** • metrics in the process and project domains: process • metrics, project metrics, software measurement metrics for software quality	4	
7	**SOFTWARE TESTING** • unit testing, integration testing, black box and white box testing, • Regression testing, performance testing, object-oriented testing.	6	
8	**TRENDS IN SOFTWARE ENGINEERING** • software release management, • overview of reverse engineering and re-engineering, • design patterns, case tools, • Dev Ops tools, service Oriented software engineering, • aspect oriented software engineering., formal methods.	4	
Total Hours		**36**	

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
10.00	20.00	15.00	15.00		

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application **N :** Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

8 . REFERENCES BOOKS :

1 Software Engineering A Practitioners Approach, Software Engineering A Practitioners Approach, Roger Pressman, McGraw Hill Publication, 0

10. LIST OF OPEN-SOURCE SOFTWARE/LEARNING WEBSITE :

1 https://www.geeksforgeeks.org/software-engineering-introduction-to-software-engineering/

SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

OBJECT ORIENTED PROGRAMMING - MCA-1102

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : NA

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
2	0	4	4.00	60	40	30	20	150

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
Total Hours			

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	Understand	Apply	Analyze	Evaluate	Create

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application **N :** Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

8 . REFERENCES BOOKS :

1 Energy Economics: Concepts, Issues, Market and governance, Energy Economics: Concepts, Issues, Market and governance, S. C. Bhattacharya, Market and governance, Springer, 2011

2 Energy Management Handbook, Energy Management Handbook, W. C. Turner, S. Doty, Fairmont Press & CRC Press,, 2012

3 Guide to Energy Management, Guide to Energy Management, B. L. Capehart, W. C. Turner, W. J. Kennedy, Guide to Energy Management, 2011

4 Handbook of Energy Engineering, Handbook of Energy Engineering, A. Thumann, D. P. Mehta, Fairmont Press & CRC Press, 2013

5 International Handbook on the Economics of Energy, International Handbook on the Economics of Energy, J. Evans, L. C. Hunt, Edward Elgar Publishing Limited, 2011

8 . REFERENCES BOOKS :

6 Books of Energy Management & Auditors, Books of Energy Management & Auditors, Bureau of Energy Efficiency, Bureau of Energy Efficiency, N.A.

9 . LIST OF EXPERIMENTS :

SWAMINARAYAN UNIVERSITY

FACULTY OF IT AND COMPUTER SCIENCE

Syllabus for 1 Semester

WEB TECHNOLOGY - MCA-1101

Name of Department in which this course is offered	Semester in Which offered
MCA	1

1. Type of Course :

2. Prerequisite : NA

3. RATIONALE :

4. COURSE OUTCOME :

Sr. No	CO Statement

5. TEACHING AND EXAMINATION SCHEME :

Teaching Schemes			Credit	Examination Scheme				
				Theory		Practical		Total
L	T	P	C	E-ESE	M-PA	V-ESE	I-PA	
3	0	4	5.00	60	40	30	20	150

6. CONTENT

Sr. No.	Content	Total Hrs	% Weightage
Total Hours			

7. SUGGESTED SPECIFICATION TABLE WITH MARK (THEORY)

Distribution of Theory Marks					
Remember	Understand	Apply	Analyze	Evaluate	Create

Legends : **R :** Remembrance **U :** Umderstamding **A :** Application

N : Analyze and **E :** Evaluate **C :** Create and Above Levels

Note : This Specification table shall be treated as a general guideline for student and teacher.The actual distribution of marks in question paper may very slightly from above table.

9 . LIST OF EXPERIMENTS :