

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM COURSE TITLE: PROFESSIONAL PRACTICES USING DATABASE (COURSE Code: 3360702)

Diploma Program in which this course is offered	Semester in which offered
COMPUTER ENGINEERING	SIXTH

1. RATIONALE

The course is associated with database administration and with those developers who want to use maximum functionalities of the MySQL database. The pass out of this course will be able to implement user privileges, set resource limitations, and access controls. In addition, students will learn to apply new features such as creating and using stored procedures, triggers and views of MySQL database, applying backup and security features of MySQL database management. Thus this course would help students in administration of database in a more professional way.

2. COMPETENCY

The course content should be taught and implemented with the aim to develop different types of skills so that students are able to acquire following competencies:

- **Apply MySQL GUI Tools (SQLyog) as MySQL manager and admin tool, along with various database techniques such as triggers, event handling, user management, backup, recovery and security features of MySQL for database management and administration.**

3. COURSE OUTCOMES

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning out comes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- i. Perform various database operations using MySQL GUI tools
- ii. Implement triggers, and stored routines of MySQL
- iii. Implement event handling
- iv. Perform User Management in MySQL
- v. Apply database backup and recovery techniques

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	PA	ESE	PA	100
0	0	4	4	0	0	40	60	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit; ESE - End Semester Examination; PA - Progressive Assessment

5. COURSE CONTENT DETAILS

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Unit – I: Introduction to MySQL	1a. Describe basic steps of installation, and command line operations of MySQL 1b. Utilize enlisted MySQL GUI tools for various database operations	1.1 Introduction to MySQL 1.2 Install MySQL on Windows 1.3 Start and stop MySQL from command line 1.4 Brief Introduction to MySQL GUI tools <ul style="list-style-type: none"> • SQLyog MySQL GUI manager and admin tool • phpmyAdmin • MySQL Query Browser • MySQL Administrator
Unit – II: MySQL Triggers & Routines	2a. Describe MySQL Trigger	2.1 Basics of Trigger 2.2 Create and drop a trigger 2.3 Find all triggers in database
	2b. Define and operate MySQL Stored Routine	2.4 Stored Routine 2.5 Create and invoke a stored routine 2.6 Alter a stored routine 2.7 Drop a stored routine
Unit – III : MySQL Cursor and Event Scheduler	3a. Utilize functionalities of MySQL Cursor	3.1 Basics of Cursor 3.2 Defining the cursor 3.3 Retrieve values from cursor 3.4 Close the cursor
	3b. Use MySQL Events	3.5 Events 3.6 Turning event scheduler on 3.7 Create the event 3.8 Find all events in database 3.9 Change the event and Drop the event
Unit – IV: User Management	4a. Perform User Management in MySQL	4.1 Basics of MySQL User 4.2 Access Control List 4.3 Manage User Accounts 4.4 GRANT and REVOKE Command 4.5 Reset Root Password
Unit - V Backup and Recovery	5a. Use Database for Taking Backup and Recovery	5.1 Back up MySQL 5.2 Uses for backup 5.3 Backup Frequency 5.4 Copy database into another machine 5.5 Recovery from crashes

6. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (Theory)

Note: There is no end of the term exam in this course and hence specification table is not applicable.

7. SUGGESTED LIST OF PRACTICAL EXERCISES

The practical should be properly designed and implemented with an attempt to develop different types of skills (**outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies/programme outcomes. Following is the list of practical exercises for guidance.

*Note: Here only outcomes in psychomotor domain are listed as practical. However, if these practical are completed appropriately, they would also lead to development of certain outcomes in affective domain which would in turn lead to development of **Course Outcomes** related to affective domain. Thus over all development of **Programme Outcomes** (as given in a common list at the beginning of curriculum document for this programme) would be assured.*

Faculty should refer to that common list and should ensure that students also acquire outcomes in affective domain which are required for overall achievement of Programme Outcomes/Course Outcomes.

Sr. No.	Unit No.	Practical/ Exercises	Approx Hrs. Required
1	I	Install and configure MySQL database	4
2	I	Install and use of SQLyog	4
3	I	Install and use of phpmyadmin	4
4	I	Install and Use of MySQL Browser	4
5	I	Install and use of MySQL Administration	4
6	II	Create table and perform various task such as Create a product and product_price_history table. The price of product change constantly. Write a trigger for updating product_price_history table when product price change in product table and such other database can be explored	4
7	II	Implement and manipulate trigger such as Create a trigger for deleting all the products of particular product type when that product type is deleted and similar for other databases.	2
8	II	Write stored routines such as write a routine for counting all product types and other such routines can be performed	4
9	II	Manipulate on routines such as write a routine for updating price of all product by 5% and other such routines can be performed	2
10	III	Create cursors such as create a cursor for selecting all product whose price is more than 1000 and other such cursors can be implemented	4
11	III	Perform various event handling operations such as create an event that checks the product types having quantity less than 20 in stock at every ten minutes and such other procedure can be done	4
12	III	Implement precise events such as create an event that checks the product which has been sold maximum in a day and same exercises can be performed	4
13	IV	Create and manage user accounts in MySQL	4
14	IV	Practice with GRANT and Revoke Command	4
15	V	Practice with database backup and recovery operations as well security operations	4
Total Hours			56

8. SUGGESTED STUDENT ACTIVITIES

Following is the list of proposed student activities such as:

- i. Presentation on different database comparison
- ii. Seminar on Database installation and applications

9. SPECIAL INSTRUCTIONAL STRATEGIES (if any)

- i. Faculty should demonstrate an Open source database technology for clear understanding of the students
- ii. Concepts should be introduced in input sessions in labs by giving demonstration through projector so that theory and practice can go hand in hand.
- iii. Group Discussion and presentation of database systems.
- iv. Faculty should allow students to use their creativity and let them struggle to learn on their own during practical sessions. However, faculty should remain around the students and should help them when they are stuck.

10. SUGGESTED LEARNING RESOURCES

A). List of Books

Sr. No.	Title of Book	Author	Publication
1	MySQL Administrator	Sheeri Cabral	Wiley
2	Oracle And Mysql	B. Mohamed Ibrahim	Firewall Media 2013
	MySQL 5	Michael Kofler	Apress
3	MySQL Admin Cookbook	Daniel Schneller, Udo Schwedt	Packt
4	The Power of Oracle 10g	Rajeev A Parida	Firewall Media

B). List of Major Equipment/ Instrument with Broad Specifications

- i. **Hardware:** Latest server system with fourth generation multi core processors, 16 GB RAM, Minimum two 1Tb hard disk, High end networking support, RAID backup support, Power backup, Nodes available in market with latest configuration
- ii. **Software:** MySQL (open source), SQLyog, MySQL Query Browser and other Administrative tools.
- iii. **Equipment:** Multimedia Projector

C). Additional Resources of MIS that can be used for conducting Practical as well as case studies

- i. <http://www.mysqltutorial.org/mysql-administration.aspx>
- ii. <http://www.tutorialspoint.com/mysql/mysql-administration.htm>
- iii. <http://www.washington.edu/itconnect/connect/web-publishing/shared-hosting/using-mysql-on-shared-uw-hosting/basic-mysql-administration/>
- iv. <http://www.vtc.com/products/MySQL-5-Administration-Part1-Tutorials.htm>

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE**Faculty Members from Polytechnics**

- **Prof. P. P. Kotak**, H. O. D Computer Department, A. V. P. T. I., Rajkot
- **Prof. R. M. Shaikh**, H.O.D Computer Department, K. D. Polytechnic, Patan
- **Prof. K. N. Raval**, H.O.D Computer Department, R. C. Technical Institute, Ahmedabad
- **Prof. (Ms.) Manisha. P. Mehta**, Lectuer Computer, K. D. Polytechnic, Patan
- **Prof. R. B. Pancholi**, Lectuer Computer, L. J. Polytechnic, Ahmedabad.
- **Prof. A. J. Shah**, Lectuer Computer, L. J. Polytechnic, Ahmedabad.

Coordinator and Faculty Members from NITTTR Bhopal

- **Dr.K.James Mathai**, Associate Professor, Department of Computer Engineering and Applications.
- **Dr. Shailendra Singh**, Professor & Head, Department of Computer Engineering and Applications.