

MCA 206P DATA BASE MANAGEMENT SYSTEM

Introduction to MySQL Database

Installation of MySQL

- Table Design- Using foreign key and Normalization
- Practice SQL Data Definition Language(DDL) commands
- Table creation and alteration(include integrity constraints such as primary key, referential integrity constraints, check, unique and null constraints both column and table level
- Other database objects such as view, index, cluster, sequence, synonym etc.
- Practice SQL Data Manipulation Language (DML) commands
- Row insertion, deletion and updating
- Retrieval of data
- Simple select query
- Select with where options (include all relational and logical operators)
- Functions: Numeric, Data, Character, Conversion and Group functions with having clause.
- Set operators
- Sorting data
- Sub query (returning single row, multiple rows, more than one column, correlated sub query)
- Joining tables(single join, self join, outer join)
- Data manipulations using date functions
- User defined functions in a query
- Hints in queries to optimize performance
- Manage ODBC/JDBC connections
- Practice Transaction Control Language (TCL) commands (Grant, revoke, commit and save point options)
- Usage of triggers, functions and procedures using PL/SQL constructs
- 10 PL/SQL Programs to be developed demonstrating PL/SQL Concepts

- Development of a Databases using MySQL that could be used with one of the following application:
 - Payroll Information
 - Student Information System
 - Library Information System etc.

- Backup and restore databases;
- Query optimization in a database



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LEARNING-MCA 2018-2021(Regular)**

Sl.No	Reg.No	Name of the Student
1	950041	Akhil Krishnan U M
2	950042	Anjali Mary Philip
3	950043	Anjitha S Pillai
4	950044	Aravind A S
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18	950058	Syam kumar S



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MCA 506P ADVANCED JAVA PROGRAMMING PRACTICALS

Students are directed to develop programs on demonstrating the theoretical concepts on Advanced Java. A minimum of 20 programs is required in this practical course.

Some tentative programs that can be experimented are as follows:

1. Development of dynamic website of an online Departmental Store. The website should be user friendly and should have the following pages: Home page Registration and user login User profile page Items catalog Shopping cart Payment by credit card Order confirmation
2. Add validations to the above site for registration, user login, user profile and payment by credit card using Java Script.
3. Creation of a JavaBean which gives the converted value of Temperature (in degree celcius) into equivalent Fahrenheit
4. Creation of a simple Bean with a label – which is a “count” of number of clicks. Then create a BeanInfo class such that only the “count” is visible in the Property Window.
5. Creation of two Beans a) Keypad b) Display pad. After that integrate the two beans to make it work as a calculator.
6. Do the assignment 2 using JSP by converting the static web pages of assignment 2 into dynamic web pages. Create database with User Information and Item information. The Item catalog should be dynamically loaded from the database.
7. Implementation of currency converter program using JSP Struts Framework.



A handwritten signature in blue ink, consisting of stylized loops and a horizontal line at the end.

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LIST OF STUDENTS STUDIED COURSES ON EXPERIENTIAL
LEARNING-MCA 2017-2019 (L.E)

Sl.No	Reg.No:	Name of the Student
1	804071	Abhijith G Abhilash
2	804072	Abhinand V
3	804073	Achsa N Sam
4	804074	Aevin K Wilson
5	804075	Aisha Muhamed
6	804076	Akhil Murali
7	804077	Akhil Kumar A
8	804078	Akhil P R
9	804079	Anjali N
10	804080	Anjana Bose
11	804081	Ann Anie Reji
12	804082	Anoop C Mathew
13	804083	Archana Aravind
14	804084	Ashwin Issac Shaji
15	804085	Athira Rajeev
16	804086	Athria Ravi
17	804087	Bency Baby
18	804088	Bincy Susan Thomas
19	804089	Blessy Varghese
20	804090	Chanjitha Babu
21	804091	Dyson Thomas
22	804092	Gayathri Gopan
23	804093	Gopu G Nair
24	804094	Harikrishnan R
25	804095	Haritha Hari
26	804096	Jesnamol James
27	804097	Jibin Prasannan
28	804098	Jossy Mary varghese
29	804099	Kannan Shaji



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30	804100	Kripa Thankachen
31	804101	Maqsooda A M
32	804102	Merin M Thomas
33	804103	Nandagovind M
34	804104	Neenu Rose Varghese
35	804105	Nibin John
36	804106	Niji
37	804107	Nithin Antony
38	804108	Noble Philip
39	804109	Noufia S
40	804110	Nowfal Nazar
41	804111	Parvathy Prasannan
42	804112	Reeba Varghese
43	804113	Remya R
44	804114	Revathy R Nair
45	804115	Rohini Sreekumar
46	804116	Roshan Jose T.
47	804117	Roshin Mariam Abraham
48	804118	Seba P george
49	804119	Shilpa Anand
50	804120	Shyju varghese
51	804121	Sini Varghese L
52	804122	Smrithi S Lal
53	804123	Sofiya Varghese
54	804124	Sojan Somarajan
55	804125	Unni Shaji
56	804126	Veena Upendran
57	804127	Vidhya Thulasi
58	804128	Vipin Dev
59	804129	Vishnu



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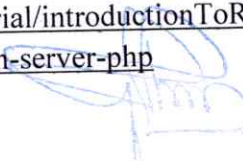
	Application Development - (PHP)
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Module No.	Title & Contents	No. of Sessions
1	PHP: Introduction, Variables, echo / print , Data types , Strings , Constants , Operators , Control structures: Functions, Arrays, Super-global variables Implementing .object-oriented programs using PHP: Creating classes and accessing class members in different php pages, inheritance.	10
2	PHP Forms: Form handling, form validation, form required, Form Complete, Date and time, Cookies, Sessions. File Handling in PHP, File Upload, Sending Email.	12
3	PHPMyAdmin : db management in PHPMyadmin (create, drop, rename), table management (create, drop, rename, setting primary key, auto increment, default values, null),import data to the db (CSV/SQL), export data from db(CSV/SQL). Connecting MySql from PHP: mysqli_Connect, mysqli_query(create, insert, update, delete, limit data) ,mysqli_close,	8
4	JavaScript- Variables, Operators, Functions, Event Handling, Form Validation using JavaScript. AJAX- submitting a section of a page using AJAX	6
5	Introduction to PHP frameworks- Introduction to MVC architecture, Laravel, Basic features, Creating projects using Laravel, Mini Project. Introduction to Semantic Webs:- What is semantic web?, RAP: RDF API for PHP. Introduction to Web Hosting: Demonstration of how to host a php project on a server	12

Text Books & References

1. Web Programming, Chris Bates, 3 rd Edition; Pub: John Wiley & Sons
2. The complete reference PHP, Holzner; 1st Edition McGraw Hill Education,
3. <https://github.com/PHPMailer/PHPMailer>
4. Official Laravel Documentation <https://laravel.com/docs/7.x>
5. <https://www.phptpoint.com/laravel-tutorial/>
6. <https://www.tutorialandexample.com/creating-first-laravel-project/>
7. <http://wifo5-03.informatik.uni-mannheim.de/bizer/rdfapi/tutorial/introductionToRAP.htm>
8. <https://o7services.com/blog/2019/12/21/upload-php-project-on-server-php>




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Sl No	Register No	Name of the Student
1	900061	Abhirami S Babu
2	900062	Aiswaryalakshmi S.
3	900063	Aleesha Shamsudeen
4	900064	Binisha Susan Biju
5	900065	Blesson K Chandy
6	900066	Blessy Benny
7	900068	Jaina Jacob
8	900069	Jisha M Varghese
9	900071	Keziya Susan John
10	900072	Manisha Elizabeth Philip
11	900073	Manjumol
12	900074	Nikila Ajayan
13	900075	Nikitha Ajayan
14	900076	Parvathy K
15	900078	Rean Sosa Varghese
16	900079	Reshma R
17	900080	Shilpa S Mohan
18	900081	Sinu Manoj
19	900082	Stennia Thomas
20	900083	Swathy Sajeev
21	900084	Yugma S



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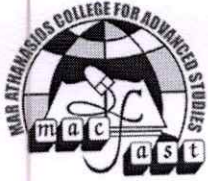
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2	902052	Abi A
3	902053	Abin Thomas Mathew
4	902054	Adheena A
5	902055	Akhil Kizhakevila
6	902056	Anandu S Kumar
7	902057	Anaswara P Mohan
8	902058	Anisha Varghese
9	902059	Anjana P Nair
10	902060	Anjana S Nair
11	902061	Anjitha P Kuriakose
12	902062	Anju B
13	902063	Ann Mary Anto
14	902064	Anseena A
15	902065	Anu Prasannan
16	902066	Archa M S
17	902067	Arjun B Ajith
18	902068	Aswathy M Nair
19	902069	Aswathy P
20	902070	Aswin P
21	902071	Athira B.S
22	902072	Balu R Kumar
23	902073	Bharath Kumar
24	902074	Binimol Sibi
25	902075	Blesson Shaji
26	902076	C D Prannov
27	902077	Chippy Jacob
28	902078	Geni Susan Skaria



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29	902079	Gison Tom Mathew
30	902080	Gopika M Chandran
31	902081	Jaimon James
32	902082	Jito J Thomas Vaidyan
33	902083	Lakshmi P Raju
34	902084	Lakshmi Sivan
35	902085	Lithiya K Babu
36	902086	Malavika Raj
37	902087	Meenu Krishna B
38	902088	Melbi Biju
39	902089	Melvin C Thomas
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44	902094	Renjitha P.R
45	902095	Renju R
46	902096	Reshma S Raju
47	902097	Riya Ealiyas
48	902098	Riya Mariam George
49	902099	S Seethalakshmi
50	902100	Sajishna K
51	902101	Shari Raju
52	902102	Sharon P Joseph
53	902103	Sheeba Kuriakose
54	902104	Sheethu Shaji
55	902105	Shibin Oommen Varghese
56	902106	Shibu T P
57	902107	Shilpa P
58	902108	Shincy Mariam Savier
59	902109	Sibin Thomas
60	902110	Sini Mathew
61	902111	Soorya Das k.S
62	902112	Sreelakshmy S Nair



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63	902113	Sruthi S Pillai
64	902114	Sruthi Xavier
65	902115	Sruthy C Krishnan
66	902116	Subi Maria Antony
67	902117	Tabashu M T
68	902118	Tiji Thomas
69	902119	Vijil George
70	902120	Vineesh V
71	902121	Vini Anie Thomas
72	902122	Vyshakh B



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Application Development in C

- Implementation of the various Data Types in C.
- Demonstration of Data type conversion (Hint: Usage of type casting).
- Implementation of various Storage Types.
- Demonstration of for loop.
- Demonstration of do...while loop.
- Demonstration of while loop.
- Demonstration of nested if (Hint: Use logical operators).
- Demonstration of switch... case structure.
- Implementation of arrays.
- Implementation of multidimensional arrays (Hint: implement matrix operation).
- Implementation of functions (Hint: Demonstrate call by value, call by schemes, passing of arrays).
- Demonstration of various string operations (Hint: Usage of user defined functions only allowed). Demonstration of pointer operations.
- Demonstration of recursion (Hint: GCD, factorial, Fibonacci series).
- Demonstration of Debugging a C program.

Section B (Min 20 Programs)

- Implementation of structures (Hint: simple structure operations, array of structures).
- Implementation of Union.
- Implementation of pointers to structures and unions.
- Demonstration of dynamic allocation of memory (Hint: malloc, calloc, realloc, free).
- Demonstration of sorting techniques (Hint: selection sort, bubble sort).
- Demonstration of searching techniques (Hint: linear search, binary search).
- Demonstration of bitwise operations.
- Demonstration of macro processing.
- Demonstration of various file operations. (Hint: Text file)
- Implementation of character counting, line counting and word counting for a file.
- Program to find the lengthiest line in a text file.



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31	180431	Brijith Abraham
32	180432	Chinthu Vinayak S
33	180433	Christeena Moses Ali
34	180434	Devika B





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		Dona Rachel
36	180436	Achankunju
37	180437	Emmanuel Francis
38	180438	Feba Ann C Chacko
39	180439	Febin Abraham
40	180440	Gokul S Das
41	180441	Gopika Nair S
42	180442	Harisankar P
43	180443	Jack Antony
44	180444	Jain James
45	180445	Jaisa Monachen
46	180446	Jaison Joboy
47	180447	Jenson Jim
48	180448	Jibu Sunny
49	180449	Jiby John
50	180450	Jikson Thomas
51	180451	Jins Joseph
52	180452	Jinto Shaji
53	180453	Jisha Raj
54	180454	Jishin M Josy
55	180455	Jishnu J
56	180456	Jitheesh J B
57	180457	Jithin Easow George
58	180458	Joel Mathew Thomas
59	180459	Karthika Aniyan
60	180460	Keerthi Rajan
61	180461	Kiran Das
62	180462	Libin George
63	180463	Liji Joyson
64	180464	Liji Mathew
65	180465	Manu K Raju
66	180466	Mathew Jose
67	180467	Midhun Mathew
68	180468	Mithin Madhu
69	180469	Mohammed Roshan
		Mohammedajmal T
70	180470	R
71	180471	Nandu Gopal G
72	180472	Neethu George
73	180473	Nidhin Babu
74	180474	Nikhil Thomas
75	180475	Nikhil Varghese





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77	180477	Prince Philip
78	180478	Prince Saji
79	180479	Prinson K Prince
80	180480	Riya Mariet Mathew
81	180481	Rohin V Mathew
82	180483	Rohith Abraham
83	180484	Rosin Cherian
84	180485	Rosin Francis
85	180486	S.R. Aravind Reghunath
86	180487	Sachin S Kumar
87	180488	Sampath M Philip
88	180489	Serena Sangeeth
89	180490	Serin Mariam Baby
90	180491	Shanla Ann Shibu
91	180492	Shekha Shaji
92	180493	Sherin Ann Oommen
93	180494	Sherin Mariam Philip
94	180495	Shibin Zacharia
95	180496	Shilpa Rachal Varghese
96	180497	Shine Modeyil Sunny
97	180498	Siby Paul Varghese
98	180499	Siji Maria Sebastian
99	180500	Sijo Daniel
100	180501	Sinu Saji
101	180502	Sneha Sebastian
102	180503	Sruthi Mohan
103	180504	Sruthi Sara Babu
104	180505	Sudheesh K S
105	180506	Sukanya Sabu
106	180507	Surabhi R Udayakumar
107	180508	Swathy S
108	180509	Teny Tomy
109	180510	Tom K Thomas
110	180511	V A Sulfa Shukoor
111	180512	Veena R Nair
112	180513	Vijo Vinu Cherian
113	180514	Yemeema Sabu



Delhi.

3. Mizra S. Saiyadain, *Human Resources Management*, 4th Ed, Tata McGraw Hill.

4. Raymond Noe, *Employee Training and Development*, Tata McGraw Hill.

5. K . Aswathappa, *Human Resource Management- Text & Cases*, Tata McGraw Hill.

6. Wayne Mondy, *Human Resource Management*, Pearson, India.

7. Joe Martocchio, *Strategic Compensation: A Human Resource Management Approach*, Pearson, India.

CC12- OPERATIONS MANAGEMENT

Module I

Introduction to Production and Operations Functions, Interaction of Operations Management with other functional areas of Management – Manufacturing and Non Manufacturing operations and their Classifications – Operations Strategy as a part of Corporate Strategy – Operations Planning and Control – Operations Forecasting: Forecasting methods.

Module II

Facility Locations – Cost competition and Hidden factors – Steps in location selection – Types of Manufacturing Systems and Layout – Facility Layouts – Layouts by Products and Process – Life balancing – Design of Operations Systems : Aggregate planning and Master Scheduling, MRP, CRP. Material Handling: Principles, Equipments for Materials Handling.

Module III

22

Work study, Time and Method study: Definition – Importance – Aims and Procedures – Implications on Productivity – Work measurement – Work sampling – Work environment – Industrial safety – Value analysis.

Module IV

Materials Management – Functions – Material planning and Budgeting – Value Analysis - Purchase functions and Procedure - Inventory control – Types of Inventory – Safety stock – Inventory Control Systems – Perpetual – Periodic – JIT – KANBAN.

Managing Vendors; Vendor Analysis, Rating and Selection – Procedure and Criteria.





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36	180436	Dona Rachel Achankunju
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52	180452	Jinto Shaji
53	180453	Jisha Raj
54	180454	Jishin M Josy
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66	180466	Mathew Jose
67	180467	Midhun Mathew
68	180468	Mithin Madhu
69	180469	Mohammed Roshan
70	180470	Mohammedajmal T R
71	180471	Nandu Gopal G
72	180472	Neethu George
73	180473	Nidhin Babu
74	180474	Nikhil Thomas
75	180475	Nikhil Varghese





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA

(MACFAST)

76	180476	Parvathy Jose Prakash
77	180477	Prince Philip
78	180478	Prince Saji
79	180479	Prinson K Prince
80	180480	Riya Mariet Mathew
81	180481	Rohin V Mathew
82	180483	Rohith Abraham
83	180484	Rosin Cherian
84	180485	Rosin Francis
85	180486	S.R. Aravind Reghunath
86	180487	Sachin S Kumar
87	180488	Sampath M Philip
88	180489	Serena Sangeeth
89	180490	Serin Mariam Baby
90	180491	Shanla Ann Shibu
91	180492	Shekha Shaji
92	180493	Sherin Ann Oommen
93	180494	Sherin Mariam Philip
94	180495	Shibin Zacharia
95	180496	Shilpa Rachal Varghese
96	180497	Shine Modeyil Sunny
97	180498	Siby Paul Varghese
98	180499	Siji Maria Sebastian
99	180500	Sijo Daniel
100	180501	Sinu Saji
101	180502	Sneha Sebastian
102	180503	Sruthi Mohan
103	180504	Sruthi Sara Babu
104	180505	Sudheesh K S
105	180506	Sukanya Sabu
106	180507	Surabhi R Udayakumar
107	180508	Swathy S
108	180509	Teny Tomy
109	180510	Tom K Thomas
110	180511	V A Sulfa Shukoor
111	180512	Veena R Nair
112	180513	Vijo Vinu Cherian
113	180514	Yemeema Sabu



CCOI PRINCIPLES OF MANAGEMENT

MODULE 1 : Introduction to Management Definitions - Managerial Effectiveness & Efficiency - Levels of Management and Skills – Managerial roles – Evolution of Management Thought – Functional Areas of Management – Management Process – Management and administration, Pedigree of Management, Management as a Profession.

MODULE II: Planning and Decision Making Nature & Importance of planning – Types of Planning – Steps in Planning with Illustration – Prerequisites of Planning - Limitations - MBO – Process, Hierarchy of Plans, Principles of Planning. Decision Making – Programmed & Non – Programmed Decisions – Decision Making Process, Techniques, forecasting, Conditions of Risk, Uncertainty – Group Decision Making.

MODULE III: Organising Organizing – Formal and Informal Organisation, Organising Process – Bases of Departmentation, Decentralisation – Span of management – Authority and Power – Delegation of Authority – Line and Staff Relationships, functional, Project and Matrix Structures – Centralization Vs Decentralization, Modern Organisations; Learning, Net working and Virtual Organisations – Principles in Organising.

MODULE IV: Staffing, Motivation, Leading & Communication An overview of Staffing Function – Staffing Process. Motivation – motives, motivators, Motivational Theories. Leadership – Elements of Leadership, Leadership Styles, Traditional and Modern theories. Communication – Communication process and barriers in Communication. Principles of Motivation, Leadership and Communication

MODULE V: Controlling, Co-ordination and Emerging Trends in Management

Controlling – Importance – Levels of Control – Control Process – Different types of Control – Effective Controlling – Control techniques – Co-ordination – Principles of Control and Co-ordination, Management





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA
(MACFAST)

Name of the students studied courses on experiential learning

MBA 2017-19 BATCH

SL.NO	NAME
1	Abhishek Purushothaman
2	Abiya Babu
3	Achu C Thampi
4	Ajo Varghese Rajan
5	Akash Mathew
6	Akhila O V
7	Akhilesh Kumar C A
8	Akhilmon V Thomas
9	Akshaya E S
10	Albin Baby
11	Aleena Jacob
12	Alma Mariam Abraham
13	Ameer Ismail
14	Amitha Rajesh R
15	Ananthu A Kochumon
16	Ananthu Santhan
17	Ancy Monachan
18	Anita Ann Alex
19	Anjali B Joseph
20	Anju Vijay
21	Anu Abraham
22	Anu Joseph
23	Anuja Elizabeth Joseph
24	Arya M M
25	Ashik S Antony
26	Ashma C Das
27	Aswani S Kumar
28	Athira Babu
29	Athira R
30	Athira V M
31	Bibin John Babu
32	Bijina Beegam
33	Brian Binu Thomas
34	C S Chitra
35	Chinnu Maria Thankachan
36	Christopher George





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA

(MACFAST)

37	Cyriac Stephen George
38	Divya Ann Varghese
39	Gibin Babu
40	Harikrishnan V M
41	Haripriya J
42	Heera Maria Vilson
43	Jayasree J
44	Jerin George
45	Jibi Joseph
46	Jiby Varghese
47	Jikku George John
48	Jikku Mathew Thomas
49	Jikku Varughese Koruth
50	Jilbi Susan James
51	Job Justin
52	Jojo John Varughese
53	Joshni Mary Thomas
54	Ligitha Anu Ninan
55	Megha A P Panicker
56	Melbin Francies
57	Merin Anna Mathew
58	Merin Chacko
59	Midhun S Abraham
60	Nidhi Elizabeth Philip
61	Nimmy Francis
62	Praveen P Nair
63	Preethy Mariam Kacheriparambil
64	Riya Eliz Biju
65	Robin George Kurian
66	Rohan Alex Mathew
67	Rony K J
68	Sandra Biju
69	Sanju Mariam Thomas
70	Sebin Sebastian
71	Senu C Mathew
72	Shanu Eappen
73	Shany Thomas
74	Shijin Babu
75	Sijin Saji
76	Simi Chacko
77	Smrithi Viswanath
78	Sneha Cathrine James





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA
(MACFAST)

79	Sneha Sara Thomas
80	Sreejesh S
81	Sruthi Raj
82	Steffi Philip
83	Sudheesh S Nair
84	Swathy Harikuttan
85	Swathy Sathyavan
86	Teenamol Antony
87	Tom Abraham
88	Vandana V
89	Veena Mol V
90	Veena Vinayan
91	Vijitha M Nair
92	Vishakh T Devan
93	Vivek Vijayan



FOURTH SEMESTER

Course No	Title	Internal Evaluation Marks	External Evaluation Marks	Total Marks
CC21	Strategic Management	40	60	100
EC 1	ELECTIVE 7 (Major Specialization)	40	60	100
EC 2	ELECTIVE 8 (Major Specialization)	40	60	100
EC 3	ELECTIVE 9 (Minor Specialization)	40	60	100
CC22	Project & Comprehensive Viva Voce	-	200	200
	Total	160	440	600

CC21-STRATEGIC MANAGEMENT

Module I

Introduction to Strategic Management – Concept of Strategy, Process of Strategy, Strategic Framework; Vision, Mission, Objectives and Goals. Strategic Analysis – Environmental Analysis, Competitive forces, Internal analysis SWOT Analysis.

Module II

Business level strategies – Cost leadership, Differentiation, Focus. Corporate level strategies- Stability strategies, Expansion strategies – Intensification, Integration,

International expansion, Diversification strategies, Merger, Acquisitions, Strategic alliance, Turnaround strategies.

Module III

Implementation and Control –Leadership in Strategic Management; Portfolio Analysis, BCG Matrix, GEC Model, etc, Control Process Analysis and Follow-up Action for Control, Evaluation Strategy.

Module IV

Corporate Management; Corporate Policy, Corporate Governance, Top Management, Code and Laws of Corporate Management, Corporate Scenarios and Strategy; Strategies for Stable and Dynamic markets, Strategies for Global Markets.

Module V

IT and Strategy, R&D and Strategy, Knowledge Management – Knowledge Sources, Knowledge Creation, KM framework, Trends and Challenges in KM. Innovation and creativity, Innovation Culture. Building Creative Organization. Corporate Social Responsibility, Ethics and Values, Philanthropy.



References

1. Glueck, W F and Lavch, L. R *Business policy and Strategic Management*, McGraw Hill, New Delhi.
2. Porter, E, Michael *Competitive Advantage – Creating and sustaining Superior Performance*. Free press London.
3. Shrivastava, R.M.(1999) *Management Policy and Strategic Management* Himalaya Publishing House, Mumbai.
4. A.C.Hax and NS, *Strategic Management: An Integrative Perspective*, Prentice Hall, India.
5. Gregory G.Dess and Alex Miller, *Strategic Management*, McGraw Hill. India





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA
Thiruvalla - 689101

SCHOOL OF BIOSCIENCES


Names of the students studied course on experiential learning (2018-19)

Programme: M.Sc. Biochemistry
Course: BCIMOOIPPI LABORATORY COURSE I

M.Sc. Biochemistry (2018-20 batch)

Sl.No.	ROLL No.	NAME OF STUDENT
1.	180011008141	ACSAH VARGHESE
2.	180011008142	AJO J
3.	180011008143	ARYA S KUMAR
4.	180011008144	ASHEENA BANU J
5.	180011008145	ASWANI LAL
6.	180011008146	FIDAMOL K S
7.	180011008147	HARITHA K
8.	180011008148	JENITA J
9.	180011008149	JISHA JOHNSON
10.	180011008150	MEGHA SUNNY
11.	180011008151	MEGHANA MARIYAM CHERIAN
12.	180011008152	NITHYA S
13.	180011008153	NIYA BENNY
14.	180011008154	TINY CHACKO
15.	180011008155	TREESA MARY VARGHESE
16.	180011008156	VARNA S KUMAR
17.	180011008157	VEENA C NAIR
18.	180011008158	VISHNU PRIYA SP




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BCIMOOIPPI-LABORATORY COURSE –I

Hours/week-10

Credits-4

Biochemistry: Number of Hours/Week:9**1. Preparation of Solutions:**

- Percentage solutions,
- Molar solutions,
- Normal solutions
- Dilution of Stock solutions

2. Preparation of buffers using the Henderson Hasselbach equation**3. Spectrophotometric experiments:**

- Determination of UV-Visible spectrum of compounds
- Determination of Concentration of molecules from Molar Extinction coefficient values.

Quantitative Analysis-Any five

- Quantitative estimation of reducing sugars by Dinitrosalicylic acid method
- Quantitative estimation of glucose by Nelsons Somogi method
- Quantitative estimation of glucose by orthotoluidine method
- Estimation of fructose by Roe and Papadopaulose method
- Estimation xylose by orcinol method
- Quantitative estimation of tyrosine by Folinsciocalteumethod
- Estimation of Cholesterol by Zak's method
- Estimation of protein by biuret method.
- Estimation of protein by Lowry's method



- Estimation of protein by BCG method
- Quantitative estimation of Methionine by Nitroprusside method
- Estimation of total aminoacids by Ninhydrin method
- Determination of Saponification value, acid value, iodine number of oils or fats.

4. Chromatographic techniques

- Separation of amino acids by Paper chromatography (Descending or Ascending)
- Separation of Plant pigments/lipids/sugars by Thin layer chromatography
- Separation of any biomolecule by column chromatography

5. Extraction of Polysaccharides (Starch, glycogen), Proteins from appropriate source:

Quantification of isolated polysaccharides (anthrone method), protein (Lowry's method) and lipids

6. Qualitative analysis of Carbohydrate mixtures (a combination of polysaccharide, disaccharide and monosaccharide) following systematic analysis. General reactions of amino acids, proteins and lipids.
7. Demonstration of stages of mitosis, meiosis and counting chromosome numbers

8. Physiology experiments

Determination of haemoglobin concentration

Determination of haematocrit

Enumeration of bloodcells:

Erythrocytes by haemocytometry,

Total leukocyte by haemocytometry





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA
Thiruvalla - 689101

Names of the students studied course on experiential learning (2018-19)

Programme: M.Sc. Biochemistry
Course: BC2M002PC5 GENERAL MICROBIOLOGY

M.Sc. Biochemistry (2017-19 batch)

Sl.No.	REGISTER No.	NAME OF STUDENT
1.	170011019784	BASMA YOOSUF
2.	170011019785	JEEBA S BABU


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BC2MOO2PC5-CORE COURSE 5
GENERAL MICROBIOLOGY

Hours/Week-4

Credits-4

Unit I

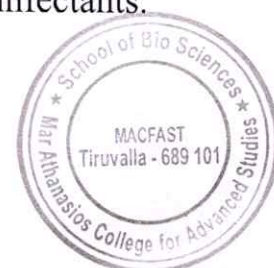
The historical foundations and development of microbiology. An overview of microbial world. Microbial diversity-Prokaryotic and eukaryotic microbial diversity. The bacteria and the archaea. Principles of bacterial taxonomy Molecular methods in taxonomy. Interspecies classification of bacteria. Morphology and structure of bacteria. Surface structures and inclusions of bacteria. Viruses-unique properties, morphology and structure. Virion, Viroids and Prions. Viral replication. Viral diversity-bacterial, plant and animal viruses. Fungi properties and classification.

Unit II

Factors influencing microbial growth. Environmental and nutritional factors. Nutritional types of bacteria. Microbial locomotion-flagellar motility, gliding motility and amoeboid motion. Chemotaxis, Phototaxis and other taxes. Cultivation of bacteria-culture media and methods. Measurement of bacterial growth. Bacterial growth curve. Binary fission, Growth cycle, Microbial growth at different temperature, pH and oxygen level. Continuous cultures. Maintenance and transport of cultures.

Unit III

Identification of bacteria. Staining reactions. Cultural, physiological and biochemical properties. Molecular methods for identification. Sterilization-Principles and methods, physical and chemical methods. Disinfectants-modes of action. Testing of disinfectants.



Antibiotics- mechanism of action. Drug resistance in bacteria. Antibiotic sensitivity tests.

Unit IV

Genetic materials in bacteria. Bacterial chromosome. Extrachromosomal genetic elements. Plasmid, Transposons. Mutation, Site Directed Mutagenesis, DNA repair, Mutant selection. Mechanism of gene transfer-transformation, transduction and conjugation.

Unit V

Microbial metabolism. Central pathways, Glycolysis, Pentosephosphate pathway, EntnerDoudoroff pathway, TCA cycle, Electron transport chain, Aerobic and anaerobic respiration. Fermentation. Anaplerotic reaction. Peptidoglycan synthesis, Bacterial photosynthesis.

REFERENCES

1. Russel AD, Hugo WB & Ayliffe GAJ (1999) *Principles and practice of disinfection, preservation, and sterilisation* (Blackwell Science, Oxford) 3rd ed
2. Bryan LE (1984) *Antimicrobial Drug Resistance* (Academic Press, Orlando)
3. Topley WWC, Wilson GS, Parker T & Collier LH (1990) *Topley and Wilson's Principles of Bacteriology, Virology and Immunology*. Edward Arnold, London. 8th ed.
4. Davis BD (1990) *Microbiology* (Lippincott, Philadelphia) 4th ed.
5. Zinsser H & Joklik WK (1992) *Zinsser Microbiology* (Appleton & Lange, Norwal, CT) 20th Ed.





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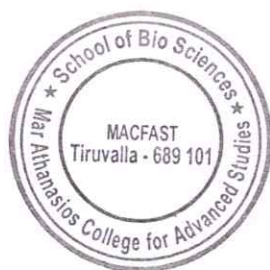
SCHOOL OF BIOSCIENCES


Names of the students studied course on experiential learning (2018-19)

Programme: M.Sc. Biochemistry
Course: BC4MOO4PP4 LABORATORY COURSE IV

M.Sc. Biochemistry (2017-19 batch)

Sl.No.	REGISTER No.	NAME OF STUDENT
1.	170011019775	ABHISHEK. A
2.	170011019776	AKSHAY B .CHANDRAN
3.	170011019777	AKSHAYA S S
4.	170011019778	ANEESHA S KUMAR
5.	170011019779	ANJALI PRAKASH
6.	170011019780	ANJALI G
7.	170011019781	ANJU JOSE K
8.	170011019782	ASHLIN MARY JOSE
9.	170011019783	ATHIRA ARAVIND
10.	170011019784	BASMA YOOSUF
11.	170011019785	JEEBA S BABU
12.	170011019786	NEENA KRISHNAN
13.	170011019787	RAHUL KRISHNAN
14.	170011019788	SAISHMA S SURENDRAN




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hypertension, prevention and treatment of heart disease, Diet strategies, Drug therapy, Acute respiratory failure, The metabolic syndrome.

Unit V

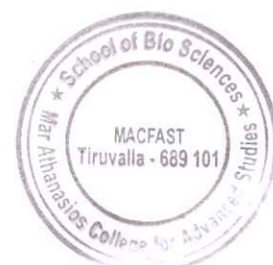
Nutrition and Renal disease, kidney stones and treatment, the nephrotic syndrome, Renal failure, kidney transplants and diet, Dialysis and Nutrition, Nutrition and liver disorders, Fatty liver and hepatitis, Cirrhosis, Gall stones, Nutrition, cancer and HIV infection, How cancer develops, Consequence of cancer, Treatment for cancer, Medical Nutrition therapy. How HIV develops, Consequences of HIV infection. Medical Nutrition Therapy. Ethical issues in Nutrition care

REFERENCES

1. Understanding normal and Clinical nutrition, Whitney, Cataldo of holfes Sixth edition
2. Nutritional Biochemistry- Tom Brody.
3. A text Book of Medical Biochemistry- M.N Chatterje and R. Shindea, Jaypeepub.
4. Harpers Illustrated Biochemistry- R.K murray, D.kGarnnes. And V.V Rodwell, McGraw Hill.
5. Medical Physiology- A.C. Guyton and J.E Hall, Saunders pub.
6. Human Physiology. C.C. Chatterjee, medical and Allied Agency
7. Nutritional Biochemistry- Swaminathan
8. Life span nutrition- Conception through life- S.R Rolfes, LK De Bruyne and E.N Whitney.
9. Normal and Therapeutic nutrition CH Robinson and MR Lawler.

BC4 MOO4 PP4- Practical 4

LABORATORY COURSE IV



Hours/ Week – 10

Credits-4

Clinical Biochemistry Experiments

1. Liver function tests

Estimation of total proteins in serum

Estimation of serum albumin by BCG method

Estimation of albumin – globulin ratio in Serum

Estimation of serum bilirubin

Assay of SGOT & SGPT-DNPH method

Assay of alkaline phosphatase-King & Armstrong method

2. **Renal Function tests**

Estimation of blood urea by diacetyl monoxime method

Urea clearance test

Estimation of creatinine by Jaff 's method

Creatinine clearance test

Estimation of uric acid-caraway method

Estimation of plasma bicarbonate

3. Glucose tolerance test

4. Fructose tolerance test

5. Analysis of normal and abnormal urine.

6. Check the reliability of various methods using Levy Jenning plot

REFERENCES





MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA
Thiruvalla - 689101

SCHOOL OF BIOSCIENCES

Names of the students studied course on experiential learning (2018-19)

Programme: M.Sc. Food Technology & Quality Assurance
Course: FT 1 MPC 702 General Microbiology

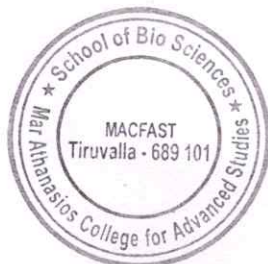
M.Sc. Food Technology & Quality Assurance (2017-19 batch)

Sl.No.	REGISTER No.	NAME OF STUDENT
1.	170011019295	ARYA C MITRA
2.	170011019296	ARYAMA KRISHNA
3.	170011019300	CHRISTEENA SIBY
4.	170011019302	GOPIKA RAJ P

M.Sc. Food Technology & Quality Assurance (2018-20 batch)

Sl.No.	REGISTER No.	NAME OF STUDENT
1.	180011014388	ALEENA SARA MATHEW
2.	180011014394	GOPIKA S PILLAI

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FT1MPC 702: GENERAL MICROBIOLOGY

Credit:4

72 hours

OBJECTIVES

- ❖ To throw light into the basics of Microbiology and to acquire an elementary knowledge about physiology of microorganisms, their control and their role in food borne illnesses.

Unit-I Introduction

16 hours

Classification of living system, History & scope of microbiology, Microscopy and specimen preparation, Cell-structure & function of prokaryote and eukaryote. Fungi- Classification, Structure and reproduction. Viruses: Introduction, general characteristics. Structure and replication with particular references to food borne viruses.

Unit-II Microbial Nutrition

15 hours

Microbial Nutrition: nutritional types of micro-organisms, nutrient requirements, growth curve, growth kinetics. Culture media and culture methods. Cultivation of bacteria. Isolation and identification: staining techniques, motility, colony characteristics, biochemical characteristics and identification for bacteria, Preservation of microbial cultures.

Unit-III Microbial genetics

16 hours

Microbial genetics-general principles, DNA as genetic material, genetic code, gene structure, plasmids, bacterial recombination- conjugation, transduction and transformation. Mutation: kinds of mutation, induced mutation and mutagens and their modes of action, detection & isolation of mutants.

Unit-IV Control of microorganisms

10Hrs

Control of microorganisms, sterilization principles and techniques, chemical and physical antimicrobial agents, Disinfectants, Antiseptic agents, Bactericidal agents, Virucide, Fungicide, Sporocide, bacteriostatic agents. Mechanisms of action of chemical disinfectants, Industrial and clinical uses of antimicrobial agents.

Measuring effectiveness of antimicrobial agents, phenol coefficient, TDP-Thermal Death Point, TDT- Thermal Death Time and DRT-Decimal Reduction Time (D-value, z-value, F-value). Antimicrobial spectrum, drug resistance in bacteria.

Unit-V Microbial diseases

15Hrs

Infections: sources of infection and modes & transmission of infection, Food borne diseases, pathogens and their control - bacterial infections & intoxications, viral infections, protozoan infections, pathogenic and toxigenic mold/fungi of food origin, Mycotoxins. Microbiology of air, water and milk





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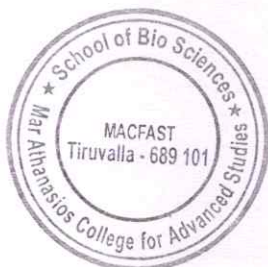
SCHOOL OF BIOSCIENCES

Names of the students studied course on experiential learning (2018-19)

Programme: M.Sc. Food Technology & Quality Assurance
Course: FT1MPP 705 Practical-Biochemistry

M.Sc. Food Technology & Quality Assurance (2018-20 batch)

Sl.No.	ROLL No.	NAME OF STUDENT
1.	180011014383	ABHIJITH R S
2.	180011014384	AISHWARYA S
3.	180011014385	AJITH PA
4.	180011014386	AJMAL KALLAR MOIDU
5.	180011014387	AKSHAYA C
6.	180011014388	ALEENA SARA MATHEW
7.	180011014389	ANJALI R
8.	180011014390	ANJU MARIAM SEBASTIAN
9.	180011014391	ANOOJA ANILKUMAR
10.	180011014392	ATHIRA S
11.	180011014393	GOKUL SHAJI
12.	180011014394	GOPIKA S PILLAI
13.	180011014395	HARIKRISHNA
14.	180011014396	JENCY RAJAN
15.	180011014397	JERIN V GEORGE
16.	180011014398	JESTIN JAMES
17.	180011014399	JOBIN S
18.	180011014400	JOEL TOM JOSE
19.	180011014401	MEERA TS
20.	180011014402	NAINA ANNA OOMMEN
21.	180011014403	PS SWATHI
22.	180011014404	PRIYA ABY PYNADATH
23.	180011014405	RAKHITH R
24.	180011014406	RESHMADAS M
25.	180011014407	ROWENA SUSAN PRADEEP
26.	180011014408	SHANTO V THOMAS
27.	180011014409	SILPA MARY JOHN
28.	180011014410	SOUMYA THOMAS
29.	180011014411	SREELEKSHMI S
30.	180011014412	SRUTHY DEVADAS S




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FT1MPP 705: Practical- Biochemistry

Credits: 2

72 hours

OBJECTIVES

To provide a balanced introduction to laboratory techniques and principles that is important in the area of Biochemistry

- ❖ Qualitative tests for carbohydrates (10 hours)
- ❖ Qualitative tests for proteins: Millon's test, Nitroprusside test, Ninhydrin test. (6 hours)
- ❖ Biuret method for estimation of proteins (4 hours)
- ❖ Estimation of Protein by Lowry's method (4 hours)
- ❖ Estimation of Ascorbic acid (4 hours)
- ❖ Estimation of Protein by Micro Kjeldahl Method, (4 hours)
- ❖ Estimation of sugars by Anthrone method (4 hours)
- ❖ Estimation of sugar by phenol-sulphuric acid (4 hours)
- ❖ Estimation of cholesterol (4 hours)
- ❖ Estimation of thiamine (4 hours)
- ❖ Study of enzymes- lipases, amylases, proteases, invertases (10 hours)
- ❖ Chromatography : Paper and Thin layer (10 hours)
- ❖ Gas Chromatography (4 hours)

Reference:

- ❖ Sadasivam S, Manickam A (1996) Biochemical Methods, Second edition, New Age International Ltd, New Delhi.
- ❖ Plummer D T (1998) An Introduction to Practical Biochemistry, Third edition, Tata McGraw Hill, New Delhi





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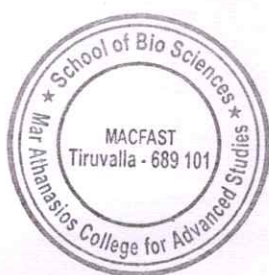
SCHOOL OF BIOSCIENCES


Names of the students studied course on experiential learning (2018-19)

Programme: M.Sc. Food Technology & Quality Assurance
Course: FT 3MPP 718 FT 3MPP 718 Practical- Processing Technology of Agro-foods

M.Sc. Food Technology & Quality Assurance (2017-19 batch)

Sl.No.	REGISTER No.	NAME OF STUDENT
1.	170011019292	ABHIJITH A
2.	170011019293	ABIN GEORGE
3.	170011019294	ANIL T LUKE
4.	170011019295	ARYA C MITRA
5.	170011019296	ARYAMA KRISHNA
6.	170011019297	ATHIRA RAJAN
7.	170011019298	AYANA ASHOK
8.	170011019299	CHIPPY MATHEW
9.	170011019300	CHRISTEENA SIBY
10.	170011019301	FATHIMA RAHIM S R
11.	170011019302	GOPIKA RAJ P
12.	170011019303	KEERTHANA ROOP
13.	170011019304	LITTY ELZA ABRAHAM
14.	170011019305	MISHEL ELIZABETH
15.	170011019306	MOHAMMED SAHEED
16.	170011019307	RATHEESH G
17.	170011019308	REMINA M SHAJAHAN
18.	170011019309	RIBU DILSHAD P P
19.	170011019310	S FATHIMA NAZEER
20.	170011019311	SARWAR IQBAL
21.	170011019312	SHAN ELIZABETH SAJAN
22.	170011019313	SHERIN SABU THOMAS
23.	170011019314	SONA GEORGE
24.	170011019315	SREELEKSHMI B S
25.	170011019316	SUSANNA JOY
26.	170011019317	TWINKLE JOSE
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FT 3MPP 718: Practical- Processing Technology of Agro-foods

Credits 3

108 h

OBJECTIVES

To provide a balanced methodology to the principles and techniques that is important in the processing of food

Preparation of bakery products	34 h
<ul style="list-style-type: none">• Preparation of bread• Preparation of cake – sponge cake, plain cake, chocolate cake• Preparation of biscuit• Preparation of doughnut• Preparation of fruit pie• Preparation of nan katai	
Preparation of confectionary	20 h
<ul style="list-style-type: none">• Preparation of toffee• Preparation of burfi• Preparation of marmalade• Preparation of Chikki• Preparation of peanut butter	
Preparation of fermented products	22 h
<ul style="list-style-type: none">• Preparation of wine• Preparation of cider• Preparation of vinegar• Preparation of chilli sauce	
Preparation of indigenous foods	12 h
<ul style="list-style-type: none">• Preparation of idli• Preparation of dosa• Preparation of steamed rice cakes	
Preparation of dehydrated foods	10 h
<ul style="list-style-type: none">• Preparation of Dehydrated shredded coconuts• Preparation of Dehydrated vegetables	
Preparation of osmotic dehydrated foods	10 h
<ul style="list-style-type: none">• Preparation of Tuti fruti• Preparation of Pineapple candy	

