Minutes of Meeting of MCA Board of Studies (BOS)

Date: 07-Apr-2011 (11:45 am to 15:30 Hrs) ***Venue***: GTU Conf. Room

Members Present

Dr. Savita R. Gandhi	Dr. Sanjay Kumar Vij
Dr. Bhushan Trivedi	Mr. Pravin Jain
Dr. Nilesh Modi	Ms. Hiteishi Diwanji
Prof. Nirbhay Chaubey	Ms. Almas Juneja

Members Not Present

Dr. V R Rathod	Prof. Rekha Nair

Points Discussed:

1. The scheme for Semester-V for the forthcoming semester (i.e. effective June, 2011) is given below. (It will be applicable only for one semester, i.e. the June-Dec, 2011 Semester):

Gujarat Technological University

Scheme of Subjects in 5th Semester of MCA Course (Valid: 1 June, 2011 to 31 Dec, 2011)

Sub. Code	***Subject***	***Theory***	***Tutorial***	***Practical***	***Credits***
	Software Engineering (SE)	4	--	--	4
	Network Security (NS)	4	1	--	5
	Mobile Computing (MC)	4	--	--	4
	Elective-II	4	1	--	5
	Elective-III	4	1	--	5
	Software Lab in Mobile Computing (SL-MC)	--	--	4	4
	Research Methodology & Dissertation (RM-D)	--	2	1	3
	TOTAL	***20***	***5***	***5***	***30***

List of Elective Subjects

Elective-II Subjects	***Elective-III Subjects***
Advanced DBMS (ADBMS)	Advanced Networking (AN)
Parallel Programming (PP)	Image Processing (IP)
Web Searching Technologies & Search Engine Optimization (WST-SEO)	Software Development for Embedded Systems (SD-ES)
Wireless Sensor Networks (WSN)	Geographical Information System (GIS)
Cyber Crime & Internet Forensic (CC-IF)	Language Processing (LP)
	Bio-Informatics (Bio-I)

Distribution of Subjects for Preparing Detailed Syllabus

1. SE: Prof. Rekha Nair (Pending)
2. NS: Dr. Bhushan Trivedi (OK)
3. MC: Mr. Pravin Jain (For Review)
4. SL-MC: Mr. Pravin Jain (Pending)
5. RM-D: Dr. Savita Gandhi (Pending)
6. ADBMS: Prof. Rekha Nair (Pending)
7. PP: Prof. Hiteishi Diwanji (OK)
8. WST-SEO: Dr. Nilesh Modi (Pending)
9. GIS: Dr. Nilesh Modi (For Review)
10. WSN: Dr. Bhushan Trivedi (OK)
11. AN: Dr. Bhushan Trivedi (OK)
12. IP: Dr. Savita Gandhi (Pending)
13. SD-ES: Prof. Hiteishi Diwanji/Mr. Pravin Jain (OK)
14. LP: Dr. Sanjay Vij (OK)
15. Bio-I: Dr. Bhushan Trivedi (For Review)
16. CC-IF: Dr. Nilesh Modi (Pending)

- All the members were requested to complete the syllabus fast preferably by April 12, 2011. The members were requested to take the help, wherever required, so as to achieve the target date.

2. It was decided to review and revise the entire syllabus (i.e. for all the semesters) as an outcome of the following suggestions:
   - Semester-I and possibly Semester-II as well should be a bit lighter without sacrificing the total essential learning content.
   - Students should develop a project of reasonably medium to big size in the languages they are learning.
   - There should be a subject called "Review of Major Subjects & Concepts" in Semester-V.

   In view of the above, the new revised scheme for all the semesters of GTU MCA program has been approved and is presented in Annexure-I with effective dates for each semester. The related action points are also included in Annexure-I.

3. Final Semester Project Guidelines are presented in Annexure-II.

4. Actions on the feedback received on syllabus:
   a. Subject: Soft Computing (Feedback Received by Dr. V. D. Pathak, Resolved by Dr. Savita Gandhi):
      - KSOFM is correct. KSOMM was written due to typing error.
      - Please include Adaptive Linear Neurons … (3.3 & 3.4), pages 57-60 to serve as a pre-requisite for learning Adaptive Resonance Theory Network.
   b. Subject: Communications Skill (Feedback Received from Dr. Bhushan Trivedi, PENDING – To be resolved by Prof. Rekha Nair)
      - Prof. Bhushan Trivedi volunteered to get it resolved if due to other commitments, Prof Rekha Nair is not able to resolve this issue within a short time frame.

Annexure-I

Gujarat Technological University

REVISED SYLLABUS FOR ALL SEMESTERS OF GTU-MCA PROGRAM (April 07, 2011)

Semester-I (w.e.f. 1 July, 2011)

Sub. Code	***Subject***	***Theory***	***Tutorial***	***Practical***	***Credits***
610001	Fundamentals of Programming (FOP)	4	--	--	4
610002	Enterprise Resource Planning (ERP)	4	--	--	4
610003	Discrete Mathematics for Computer Science (DMCS)	4	1	--	5
610004	Fundamentals of Computer Organization (FCO)	4	1	--	5
610005	Communications Skills (CS)	--	4	--	4
610006	Programming Skills-I (PS-FOP)	--	--	4	4
610007	Software Project in C (SP-C)	--	--	4	4
	TOTAL	***16***	***6***	***8***	***30***

(a) DBMS-I has been replaced by CS, and (b) Software Lab (SQL & PL/SQL) has been replaced by Software Project in C-language.

Semester-II (w.e.f. 1 Jan, 2012)

Sub. Code	***Subject***	***Theory***	***Tutorial***	***Practical***	***Credits***
620001	Data Structures (DS)	4	--	--	4
620002	Object-Oriented Programming Concepts & Programming (OOCP)	4	--	--	4
620003	Database Management System (DBMS)	4	--	--	4
620004	Computer-Oriented Numerical Methods (CONM)	4	2	--	4
620005	Programming Skills-II (PS-OOCP)	--	--	4	4
620006	Software Lab (DBMS: SQL & Pl/SQL)	--	--	4	4
620007	Software Project in C++ (SP-CPP)	--	--	4	4
	TOTAL	***16***	***2***	***12***	***30***

(a) DBMS-II has been replaced by DBMS, and (b) CS has been replaced by Software Lab (DBMS: SQL & Pl/SQL).

Semester-III (w.e.f. 1 June, 2011)

Sub. Code	***Subject***	***Theory***	***Tutorial***	***Practical***	***Credits***
630001	Structured & Object-Oriented Analysis & Design Methodology (SOOADM)	4	1	--	5
630002	Fundamentals of Java Programming (Java)	4	--	--	4
630003	Statistical Methods (SM)	4	1	--	5
630004	Operating Systems (OS)	4	--	--	4
630005	Management Information System (MIS)	4	--	--	4
630006	Programming Skills-III (Java)	--	--	4	4
630007	Programming Skills-IV (OS)	--	--	4	4
	TOTAL	***20***	***2***	***8***	***30***

(a) SS has been replaced by MIS.

Semester-IV (w.e.f. 1 Dec, 2011)

Sub. Code	***Subject***	***Theory***	***Tutorial***	***Practical***	***Credits***
640001	Fundamentals of Networking (FON)	4	--	--	4
640002	Web Technology & Application Development (WT-AD)	4	--	--	4
640003	Operations Research (OR)	4	1	--	5
640004	Software Engineering (SE)	4	--	--	4
640005	Elective-I	4	1	--	5
640006	Programming Skills-V (FON)	--	--	4	4
640007	Programming Skills-VI (WT-AD)	--	--	4	4
	TOTAL	***20***	***2***	***8***	***30***

(a) MIS has been replaced by SE.

Elective-I Subjects

• Data Warehousing & Data Mining (DWDM) • Distributed Computing (DC1) • Data Compression (DC2) • Computer Graphics (CG)	• Soft Computing (SC) • Analysis & Design of Algorithm (ADA) • Systems Software (SS)

Semester-V (w.e.f. 1 June, 2012)

Sub. Code	***Subject***	***Theory***	***Tutorial***	***Practical***	***Credits***
	Network Security (NS)	4	1	--	5
	Mobile Computing (MC)	4	--	--	4
	Review and Insight of Basic Concepts (RIBC)	--	3	--	3
	Elective-II	4	1	--	5
	Elective-III	4	1	--	5
	Software Lab in Mobile Computing (SL-MC)	--	--	4	4
	Research Methodology & Dissertation (RM-D)	--	2	2	4
	TOTAL	***16***	***8***	***6***	***30***

List of Elective Subjects

Elective-II Subjects	***Elective-III Subjects***
Advanced DBMS (ADBMS)	Advanced Networking (AN)
Parallel Programming (PP)	Image Processing (IP)
Web Searching Technologies & Search Engine Optimization (WST-SEO)	Software Development for Embedded Systems (SD-ES)
Cyber Crime & Internet Forensic (CC-IF)	Speech & Language Processing (SLP)
Theory of Computation (TOC)	Bio-Informatics (Bio-I)
Wireless Sensor Networks (WSN)	Geographical Information System (GIS)

Action Points Related to the Above-Mentioned Revised Syllabus are Given Below:

- In Sem-I, the detailed syllabi for all the subjects except ERP and "Software Project in C" (SP-C) are already prepared (and existing).
- The guidelines for the subject SP-C are given in Annexure-I (a). The detailed syllabus for ERP will be prepared by April-end, 2011.
- In Sem-II, the detailed syllabi for all the subjects except DBMS and "Software Project in C++" (SP-CPP) are already prepared (and existing).
- The guidelines for the subject SP-CPP are given in Annexure-I (a). The detailed syllabus for DBMS will be prepared latest by April-end, 2011.
- In Sem-III, the detailed syllabi for all the subjects are already prepared (and are available).
- In Sem-IV, the detailed syllabi for all the subjects except SE are already prepared (and are available). The detailed syllabus for SE will be ready as a part of Sem-V syllabus (effective for June-Dec, 2011).
- In Sem-V, the detailed syllabi for all the subjects except RIBC will be ready before June, 2011.
- The detailed syllabus for RIBC will be prepared latest by August-end, 2011. Broad guidelines for RIBC are given in Annexure-I (a).

Annexure-I (a): Guidelines for Software Projects and RIBC

Subject: Software Project in C (SP-C)

- Project definition should be such that it aims at providing solution to a specific requirement (problem) pertaining to preferably DMCS, FCO subjects or any other area.
- Project size in terms of Lines of Code (LOC) should be 1,000 lines or more. In case of (extensive) recursion used in medium to high complexity problem, this limit on LOC may be relaxed.
- The code should be self-documented and should follow coding standards.
- Documentation of the project should include at least description of the problem, algorithm, if any, and solution methodology.
- Project evaluation criteria are given in the last part of this annexure.

Subject: Software Project in C++ (SP-CPP)

- Project implementation in C++ should use object-orientation.
- Project definition should be such that it aims at providing solution to a specific requirement (problem) pertaining to preferably DS algorithms, CONM algorithms or any other area.
- Project size in terms of Lines of Code (LOC) should be 1,000 lines or more. In case of medium to high complexity problem, this limit on LOC may be relaxed.
- The code should be self-documented and should follow coding standards.
- Documentation of the project should include at least description of the problem, algorithm, if any, and solution methodology. In addition, it should include the description of each class used in the program.
- Project evaluation criteria are given in the last part of this annexure.

Subject: Review and Insight of Basic Concepts (RIBC)

- The basic concepts from the perspective of potential recruiters are to be included in the syllabus.
- Currently, the following subject-groups are included: (a) C/C++, (b) RDBMS, (c) Networking, (d) Java, (e) SOOADM/SE, (f) OS, (g) Data Structures, (h) Research Methodology & Statistics, (i) Commonly Used Frameworks and including Web Technology

- There will be two hours of refreshing/interaction in each of the above-mentioned nine areas (class of subjects) every week. It will be followed by an objective test (preferably with reasons/justification) of one hour duration in that area.
- The final examination of 2 ½ hours duration will be objective, which will cover all the nine areas.

Criteria for Evaluation of Software Projects in C and C++

- Project Definition, Its Size, Complexity, and Quantum of Work: 25%
- Completion and Operational (15%): (i) Full, (ii) Partial
- Quality of Output and Testing Plan, etc. (10%)
- Coding Style (30%): (i) Generalized-Parameterized, (ii) Structured-Modular Coding Style, (iii) Compactness & Clarity, (iv) Checkpoints for intermediate results, (v) Naming Conventions, (vi) Self-Documented
- Overall (20%)

Annexure-II
GTU Guidelines for the Final-Semester Project in MCA

1. *Preamble*

Goal of the full-semester project in the 6th semester of MCA is to train students to develop the following abilities and skills so as to help them in excelling well in their professional career:

- Ensuring that project definition is unambiguous. If not asking relevant questions to resolve ambiguities.
- Understanding project definition in terms of (a) domain of the project, (b) boundaries of project, (c) broad scope of the project, (d) development platform, (e) implementation platform, (f) feasibility, etc.
- Estimation of the quantum of work required to be done (application of software metric studied in SE)
- Learning the importance of project planning and scheduling, and preparing project plan with schedule.
- Learning the application of systems analysis and design methodology (as studied in SOOADM) to the project.
- Learning coding standards including the importance of maintainable code.
- Learning the importance of quality assurance and the methodology of software testing at individual program level, module level followed by integrated testing.
- Learning to prepare quality documentation.

In order to facilitate students to achieve the above learning goals, a set of the following guidelines have been designed with a strong recommendation for its adherence.

2. *Finalization of Project*

- Placement of students for doing project in various organizations should preferably be finalized during summer-break after 4th semester examination. If the college (institute) wants to give some good project definitions to a set of students, it is permitted.
- In no case, it should be delayed beyond the end of October month (i.e. around 2 months before the scheduled start of the project).
- It is advisable that a broad area of project (preferably definition also) should also be known while fixing up an organization for carrying out a project.
- The first step in the project execution is to finalize the project's scope and project proposal preferably as per the prescribed format (Format-1).
- It is an important phase and it should be given due importance while giving internal marks.

3. *Project Progress Review Process*

Project review on fortnightly basis is mandatory as per the following procedure:

- Students will submit the project progress report in the prescribed format (Format-2) 3-4 days before the scheduled date of review by the internal guide. The review meeting will be conducted either personally or through audio/ video conference.
- Internal guide's evaluation report in the prescribed format (Format-3) along with the students' project progress report will be filed and preserved by the Internal Guide. This report will be presented to the external examiners panel during the Project Viva Exam.
- It is advisable to visit the organization (where the project is being developed) at least once, preferably twice for review of code, progress, etc.

4. *Deliverables: For each project, submit a set of CD/DVD containing following:*

- Project definition, scope, and proposal.
- All the (at least 6) fortnightly project progress reports along with internal guide's review reports.

- Full (or partial) code, if possible
- Test cases and test data
- Final report and presentation
- External guide's progress report preferably in the prescribed format (Format-4).

5. Project Evaluation Scheme

a) Internal Evaluation by Internal Guide: 20%

b) Evaluation by GTU Examiners' 80%

TOTAL ***100%***

Break-up of GTU Examiners' Evaluation Scheme:

- Project definition, scope, progress reporting, Internal and External Evaluation: 10%
- Final project report: 20%
- Project presentation (without even partial code): 20%
- Additional weightage for showing and explaining full/ partial code: 10%
- Project viva: 20%

SUB-TOTAL ***80%***

Prescribed Formats related to End-semester MCA Project

Each of the following four formats will have the header information as follows:
College (Inst.):

Project Title: Internal Guide:	Students: (1)
Organization:	External Guide:

Format-1: Project Definition, and Scope (To be Submitted by Students)

Header Information

1. Project Definition
2. Various Scenarios and Scope of the Project
3. List of Proposed Inputs to be Processed
4. List of Proposed Outputs to be Produced
5. List of Proposed MIS Reports
6. List of Algorithms, if any
7. Time line of Project Plan / Gantt Chart

Date:

Signatures: Students:

Signatures: Internal Guide:

Format-2: Project Progress Report (To be Submitted Fortnightly by Students)

Header Information

Progress Report No. -- for the Period: -- / -- / ---- to -- / -- / ---- Submission Date:

1. Status of Previous Period's Tasks

2. Status of Previous Period Backlog

Task-ID	***Task Name***	***% Completion***	***New End Date***

3. Tasks Done During Current Period

Task-ID	***Task Name***	***% Completion***	***Revised End Date***

4. Tasks Planned for the Next Period

Task-ID	***Task Name***	***Preceding Tasks-ID***	***Sch. End Date***	***Remarks***

Signatures: Students:

Internal Guide Name, Signature & Date:

Notes:

- Tasks should be categorized under the following headings: (a) Information (Fact) Gathering, (b) Analysis, (c) Design, (d) Coding, (e) Q. A. / Testing, (f) Implementation. In case any additional category exists for a project, it may be included at appropriate place.
- Pending tasks of previous period(s) will be carried forward and will be included for review by the Internal Guide.

Format-3: Project Progress Review Report (To be Submitted Fortnightly by Internal Guide)

Header Information

Progress Review Report No. -- for the Period: -- / -- / ---- to -- / -- / ---- Submission Date:

Rating Scale: EX – Excellent; VG – Very Good; G – Good; AVG – Average; F – Needs Improvement

Parameter	***Rating***	***Remarks***
Maintenance of Daily Work Log		
Skill Level for Stage (Task Category):		
Skill Level for Stage (Task Category):		
Skill Level for Stage (Task Category):		
Quantum of Efforts in Meeting Deadlines		
Technical Competence in Meeting Deadlines		
Overall Rating		

Signature of Internal Guide & Date:

Students' Feedback, if any:

Format-4: Project Progress Review Report (To be Submitted by External Guide)

Header Information

Progress Review Report No. -- for the Period: -- / -- / ---- to -- / -- / ---- Submission Date:

Rating Scale: EX – Excellent; VG – Very Good; G – Good; AVG – Average; F – Needs Improvement

Parameter	***Rating***	***Remarks***
Maintenance of Daily Work Log		
Regularity of Reporting		
Punctuality		
Maintenance of Discipline & Decorum		
Sincerity		
Skill Level for Stage (Task Category):		
Skill Level for Stage (Task Category):		
Skill Level for Stage (Task Category):		
Quantum of Efforts in Meeting Deadlines		
Technical Competence in Meeting Deadlines		
Overall Rating		

Name & Signature of External Guide:

Date: Organization's Seal: