PARVATIBAI CHOWGULE COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)

Minutes of the first meeting of the Board Of Studies in Computer Science

Date: 20th December 2014

Time: 10.00 am

Venue: Conference Room, Administrative Building, Parvatibai Chowgule College of Arts and Science, Margao, Goa

The meeting started at 10.15 am and 13 members were present. The Chairman of the Board Of Studies (BOS)-Computer Science, Mr. Kumaresh V.C, welcomed the members to the first BOS in Computer Science and thanked them for attending the first meeting.

Subsequent to the welcome, the Member Secretary, Dr. Sameena Falleiro, requested the Chairman to introduce all the members of the BOS present. The Chairman introduced himself followed by each BOS member present. The Member Secretary presented the Agenda, and the business, as per the Agenda, was transacted.

AGENDA

1. To approve the list of core and elective courses for undergraduate program in Computer Science.
2. To approve the syllabi of Semester I and Semester II for the academic year 2015-16.
3. Recommend panel of examiners to the Academic Council.
4. Any Other Business (A.O.B)

Proceedings:

Agenda Item 1: TO APPROVE THE LIST OF CORE AND ELECTIVE COURSES FOR UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE.

1.1 Presentation of the proposed Course structure for B.A. & B.Sc. by the Chairman Mr. Kumaresh V.C

The Chairman Mr. Kumaresh V.C., explained the background and gave justification for the proposed course structure. Mr. Kumaresh V.C., presented and explained in detail the Course Structure and its components. **(See Annexure I)**

1.2 Discussion on the proposed Course Structure :

Discussion Summary :

The members felt that more focus should be given on core computer science papers like Algorithmn Design and Development. When introducing new programming language rather than teaching them programming and syntax of the language the focus should be on the concepts. A Dependency Chart depicting the various subject prerequisites will definitely help students understand, decide and subsequently choose subjects in the course.

Details of the Discussion:

In the course of the discussion the following queries were raised:

1. How are the Core papers being distributed across semesters?

The query was raised by Dr. Bharath Deshpande, the Vice-Chancellor, Goa University Nominee. Replying to the query, Mr. Kumaresh V.C, the Chairman of the BOS said that the Core Compulsory (CC) papers are proposed as per the list:

Sem I: Mathematical foundation of Computer Science.
Algorithm Design & Introduction to Programming
Sem II: Data Structures.
Object Oriented Programming
Sem III: Data Base Management Systems
Sem IV: Computer Architecture & Organization
Sem V: Operating Systems
Sem VI: Computer Networks
A total of 8 core papers are covered across six semesters.

2. Which programming language is taught to the students wrt OOP and whether there is a choice given between C or Java?

The query was raised by Dr. Bharath Deshpande, Replying to the query, Mr. Kumaresh V.C, said that faculty keep in mind their expertise in C++ and Java and also depending on the students, the faculty teaching the paper decides to chose either C++ or Java to teach the OOPS paper to the students . Mr. Amod Borkar, Industry Representative, also added to the discussion and said that the C language should be used as a base for all students as their initial programming language and then let the students select between C ++ or Java. He stressed on the importance of teaching concepts of OOP to them rather than solely focus on programming. Mr.Ian Barreto,

Member also shared the same opinion. Mr. Amod Borkar, said that the students should learn concepts well and then implement the concepts in any language of their choice.

3. What is the difference between Academic Writing and Research Writing?

The query was raised by Dr. Bharath Deshpande, replying to the query, Mr. Kumaresh V.C, said that with regard to Academic Writing, having a paper like this will help students write assignments and project report writing which are a part of their semester evaluations. Research Writing on the other hand, will be an important skill for students to pursue research and also work on their projects. Dr. Animesh Adhikari, Member, also felt that research done in Computer Science is different from research done in Social Sciences.

4. Is this structure used in any other college?

The query was raised by Mr. Colenso Castellino, Alumni, Replying to the query, Mr. Kumaresh V.C, said that we would be the first Autonomous College in Goa to introduce such a course structure.

5. Why should there be two Core Elective component made compulsory?

The query was raised by Dr. Bharath Deshpande , Replying to the query, Mr. Ian Barreto, said that there are certain papers that students need to take, as these papers will help students in their project work in their fifth and sixth semester. Dr. Bharath Deshpande however said that technology based papers like Client Side Programming need to be kept as optional electives and not as compulsory papers. Core Papers are the papers which are the main subject and should not change.

Mr. Amod Borkar, said that the paper titled **'Client Side Programming' should be changed to 'Front End Engineering'** in which topics like HTML, Java Script amd CSS are to be covered. He proposed this change in name as he felt that this name was more suitable to the recent trends that are there and students should know about end-to-end technologies. They should be made experts in one domain and then they should know everything in that area. Mr. Ian Barreto too seconded this saying that doing something like this will enrich the course. It is accepted by all the members.

Moving ahead to the title of the next paper 'Web Technology' Mr. Amod Borkar, felt that this name was not giving a clear idea as to what is offered i.e what topics are planned to be covered.

There is a need to deliberate and find out of this paper should focus solely on client side or server side.

6. Is there any course exclusively on Algorithm or any provision to teach students about Algorithm?

The query was raised by Dr. Bharath Deshpande, Replying to the query, Mr. Kumaresh V.C said some topics on algorithm is covered in semester I. In fact, we should ensure prerequisites so that based on core subjects students can decide what electives to choose from. Ms. Shaila Ghanti, Member, added that if required another paper including some more details on Algorithms could be offered. Mr. D. Prabhakaran, Member, clarified that in the current syllabus, C is used as a programming language.

Dr. Animesh Adhikari, Member, suggested that the nomenclature of the paper **'Algorithm Design & Introduction to Programming' in Semester I be changed to 'Introduction to Programming'.** It is accepted by all the members.

Mr. Amod Borkar, discussed the path that a student could have with front end technologies and he suggested that Elective papers should be used to offer something new and recent trend like Big Data as an optional Elective to the students.

Ms. Shaila Ghanti, wanted to know what practicals should be conducted in the paper 'Digital Logic Design' whether it should be either practicals or simulations. Dr. Bharath Deshpande and Mr. Amod Borkar, suggested that there should be a proper blend of both practicals and simulations in this paper and not to restrict only to one method.

Dr.Bharath Deshpande suggested that a Dependency Chart should be prepared so that students can look at a path and decide which subjects can be taken from semester I i.e right at the time of enrolling for the course.

7. What is the content of the paper 'Open Source Technologies'?

Asked by Mr. Amod Borkar, Replying to this query Mr. Kumaresh V.C., replied that students need to be aware of open source software besides proprietary software and the syllabus would be framed later as this paper was offered only in 6^{th} semester. Mr. Amod Borkar, reiterated that students should be encouraged to take up projects through which they contribute to Open Source Design and Development projects.

Dr. Bharath Deshpande said that more electives besides Mobile Developments should be offered in the sixth semester. Papers like Business Intelligence, Data Analytics and Project Management should also be offered.

Also both the experts suggested that instead of offering a separate paper on open source technologies in the 6th semester, they can be incorporated in all the technology based elective papers offered across semesters. **Hence the BOS decided to replace Open Source technologies paper with Business Intelligence.**

8. With respect to the Major-Minor (Paper Distribution)

It was decided to have Data Structures in Semester II followed by Object Oriented Programming in the subsequent Semester IV instead of Computer Architecture and Organization.

A Dependency Chart as follows was then prepared identifying the pre-requisite for each paper.

Subject Name → Pre-requisite

Cloud Computing → Database Management Systems
Business Intelligence → Database Management Systems
Mobile Applications →Introduction to Programming
Web Technologies → Introduction to Programming
Front-End Engineering →Introduction to Programming
Software Testing →Introduction to Programming
Service Oriented Architecture →Software Engineering/Introduction to Programming
Database Application Development → Database Management Systems

Dr. Bharath Deshpande raised an important query what if a student failed in a core paper and if this core paper is a prerequisite for the next semester then as per the current system of examination a student is allowed to take that paper. This is a discrepancy that needs to be looked into. Mr. Kumaresh V.C., replied that this observation will be discussed in the Examination Committee meeting.

1.3 Resolution 1: The Proposed Course Structure:

The proposed list of Core and Elective Courses for Under Graduate Degree Program in Computer Science under Autonomy is approved unanimously by this house. **(See Anexure II)**

Agenda Item 2: TO APPROVE THE SYLLABI OF SEMESTER I AND SEMESTER II FOR THE ACADEMIC YEAR 2015-16.

2.1 Presentation of the Syllabi

Mr. Kumaresh V.C., presented the syllabi of semester I and II. The following is the discussion related to the presentation - paper wise.

Semester 1: (Paper 1): Mathematical Foundation of Computer Science I

Mr. Kumaresh V.C., then presented the syllabus of the above mentioned paper. Dr. Bharath Deshpande pointed out that a sub-topic namely 'recurrence relations' was repeated in module 1 and module 5. Instead there was no need of the same twice and that it should be taught in Module 1 itself and removed from Module 5. He also suggested increasing the number of lectures in Module 1 from 6 to 8 lectures. Dr. Bharath Deshpande recommended adding tutorials as a component to the course. It was also suggested that the module on Matrices should be removed as it is already covered in Std. 12. He also felt that this course requires more of tutorials than practical's and so if possible have a proper blend of the same in this paper or in co-ordination with another paper offered in the same semester.
The entire paper with the changes incorporated as per the discussion held by the BOS is available in **Annexure III.**

Semester 1: (Paper 2): Algorithm Design and Introduction to Programming

In continuation with the discussion as discussed in Agenda I it was **unanimously decided to change the name of this paper to Introduction to Programming**. Dr. Bharath Deshpande suggested that practical scenarios should be elaborated in the practical list so as to give more idea of the practical aspect covered in this paper. Essentially the focus when teaching this paper should be problem solving, in which concepts are covered first and then subsequently bring in the syntax of the language being taught so that programming in that language gets evolved. Mr. Kumaresh V.C., suggested that this was essentially a top-down construct of looking at teaching this paper. Dr. Bharath Deshpande suggested a teaching methodology to be adopted by faculty while teaching this paper. The faculty should start with introduction to a problem that the students will have to solve as the syllabus gets covered. In this manner they will learn to think and apply what concepts they have learnt to the given problem. He also suggested shifting the Sorting and Searching algorithm from Data Structures to Introduction to Programming.

The entire paper with the changes incorporated as per the discussion held by the BOS is available in **Annexure III.**

Semester 2: (Paper 3): Object Oriented Programming

Mr. Kumaresh V.C., continued with the presentation of syllabus of the first paper offered in Semester II. Mr. Amod Borkar, suggested that main focus of this paper should be on design concepts. Dr. Bharath Deshpande felt that students should spend time on good programming practices. Things like good identiting, writing comments, documenting their work/code, are something which every student is expected to do. This is a concept that all programming languages need.

Mr. Amod Borkar suggested basic patters related to design to be covered and then have a separate paper as Elective and probably name it as 'Design Patterns".

Mr. Colenso Castellino, too suggested another elective based on Advanced Java Programming. Mr. Kumaresh V.C., suggested that this paper could be taught at post graduate level.

Mr. Bharath Deshpande, felt that there should be a textbook for most papers as this textbook could serve as a guided way to find out where the students are going.

The entire paper with the changes incorporated as per the discussion held by the BOS is available in **Annexure III.**

Semester 2: (Paper 4): Data Structures

Mr. Kumaresh V.C., continued with the presentation of syllabus of second paper in Semester II. Dr. Bharath Deshpande recommended that the entire third Module on Arrays be removed and the sub-topic namely 'Heap Sort' be covered in an advanced course in Algorithm Development. He also suggested that faculty use and teaches from books that explain general concepts and algorithms rather than on a particular language. With respect to Module 7 based on Trees he suggested that only Applications related to BFS and DFS should be covered.

The entire paper with the changes incorporated as per the discussion held by the BOS is available in **Annexure III.**

Semester 2: (Foundation Paper): Cyber Security

Mr. Kumaresh V.C., continued with the presentation of syllabus of the General Compulsory (GC) paper titled Cyber Security offered for B.A. and B.Sc. Mr. Amod Borkar, found a good scope if there is a separate elective named Cyber Security offered specially for Computer

Science students with practicals. These students could also be taught practically about the various ways Cyber security is implemented within the Web tech world.

It was suggested by Dr. Bharath Deshpande that when framing the syllabus for Web Tech security features related to Cyber Security can be incorporated in place of a new elective paper on Cyber Security for computer science students. He also suggested looking up a website namely OWASP wherein top 10 web security steps that needs to be implemented are available here. **(see Annexure IV)**

2.2 Resolution 2: The Proposed Syllabi

The proposed syllabi of Semester I and Semester II for the Academic Year 2015-16 of Core and Elective Courses for Under Graduate Degree Program in Computer Science and the syllabus of the General Compulsory (GC) paper titled Cyber Security offered for B.A. and B.Sc. under Autonomy is approved unanimously by this house. **(See Annexure III and Annexure IV respectively)**

Agenda Item 3: RECOMMEND PANEL OF EXAMINERS TO THE ACADEMIC COUNCIL.

The BOS unanimously nominated the external subject experts chosen to the respective subject. Mr. Amod Borkar and Mr. Colenso Castellino both BOS members have expressed willingness and have also consented to be part of the Practical Board and take part in practical evaluations whenever necessary. (see **Annexure V)**

3.1 Resolution 3: The Recommended Panel of Examiners

The recommended Panel of Examiners for the papers at Under Graduate Degree Program for Semester I and Semester II in Computer Science and the General Compulsory (GC) paper titled Cyber Security offered for B.A. and B.Sc. under Autonomy is approved unanimously by this house. **(See Annexure V).**

Agenda Item 4: ANY OTHER BUSINESS (A.O.B)

Dr. Bharath Deshpande wanted to know about the distribution of marks for evaluation. Mr. Kumaresh V.C., then briefed him that the examination will be 40 internal and 60 external. However Dr. Bharath Deshpande also wanted to know about the practical evaluations to which

Mr. Kumaresh V.C., shared with him the current system wherein a student is evaluated only once in a semester for practicals. There is no continuous evaluation for practicals. Ms. Shaila Ghanti asked Dr. Bharath Deshpande about the evaluation system in BITS,Goa, for practicals to which he replied that all course do not have semester end practical exam evaluation but it all depends on the instructor/faculty responsible for conducting the course. It also depends on certain subjects. For example Multimedia practical evaluations are fully project based.

The meeting ended at 1.40 pm with a vote of thanks to the Chair.

The following Members of the BOS Computer Science were present for the meeting:

Sr. No	**Name and Designation of the Faculty**
1	Mr. Kumaresh V.C. –HOD- Chairman
2	Dr. Bharath Despande – Vice-Chancellor, Goa University, Nominee
3	Mr. Amod Borkar – Industry Representative
4	Mr. Castellino Colenso - Alumni
5	Mrs. Shaila Ghanti - Member
6	Mr. Alberto Ian Barreto - Member
7	Dr. Animesh Adhikari - Member
8	Mr. D. Prabakaran - Member
9	Mrs. Suchitra Bhat - Member
10	Mrs. Judith Dias Barreto - Member
11	Mrs. Neeta V. Dhopeshwarkar - Member
12	Dr. Mrs. Sameena S. Falleiro - Member
13	Mr. Sedrick Pires - Member

Dr. V.V.Kamat, and Dr. Damodar Reddy Edla – Academic Council Nominees conveyed their inability to attend the meeting to the chairman.

Mr. Kumaresh V.C.
Chairman
BOS (Comp. Sc.)

Dr. Sameena Falleiro
Member Secretary
BOS (Comp. Sc.)

Date: 23/12/2014