

**Parvatibai Chowgule College of Arts & Science
(Autonomous)
Margao – Goa**

MINUTES OF MEETING OF THE BOARD OF STUDIES IN COMPUTER SCIENCE

HELD ON 17TH OCTOBER, 2015 AT 10.00am

Vide Chowgule College notice (F.133(C)/1029 dated 05/10/15) a meeting of this BoS was convened on 17th October, 2015 at 10.00am at the Conference Room of the Administrative Building, Parvatibai Chowgule College of Arts & Science, Margao – Goa. Since the number of members present represented the Quorum, the BoS began its proceedings.

Minutes are presented in the format.

Members present:

1. Mr. D.Prabakaran –HOD- Chairman
2. Dr. Bharath Despande – Vice-Chancellor, Goa University, Nominee
3. Mr. Amod Borkar – Industry Representative
4. Dr. Damodar Reddy Edla- Academic Council Nominee
5. Mrs. Shaila Ghanti - Member
6. Mr. Alberto Ian Barreto - Member
7. Mr. V.C. Kumaresh – Member
8. Dr. Animesh Adhikari - Member
9. Mrs. Suchitra Bhat - Member
10. Mrs. Judith Dias Barreto - Member
11. Mrs. Neeta V. Dhopeswarkar – Member
12. Dr.(Mrs). Sameena Falleiro – Member Secretary

Members Absent with Intimation

1. Dr. V.V. Kamat - Academic Council Nominee
2. Mr. Castellino Colenso - Alumni

PROCEEDINGS

The Chairperson Mr. D.Prabakaran, welcomed the members of the Board of Studies (BoS). The Chairperson introduced and explained the agenda for the meeting and Board transacted the following business:

Agenda Items:

1. Change of some courses in the Existing Course Structure
2. Approving the Syllabi of Semester III and Semester IV for the Academic Year 2016-17.
3. Approving Interdisciplinary elective courses for S.Y.B.Sc./S.Y.B.A
4. Approving the Framework of the Question Paper
5. Minimum number of Practical to be completed in each paper
6. Any Other Business (A.O.B)

AGENDA ITEM 1: CHANGE OF SOME COURSES IN THE EXISTING COURSE STRUCTURE

1.1 Discussion on why changes were made to some of the existing course papers of Semesters III , IV, V and VI

The Chairman Mr. D.Prabakaran, explained the background of the existing course structure for the B.Sc Computer Science course and gave justification for the need for the proposed course paper changes.

Since Multimedia is going to be taught as an interdisciplinary paper, the same paper can not be taught for the regular B.Sc(Computer Science) students. So it was replaced with Web Designing paper in Semester III. Since the students are expected to do project work in third year, it was felt that the students should be exposed to the commonly used technologies such as JSP, PHP & MySQL by the end of the 4th semester. Hence the need of modifications to the existing course structure in Semester IV.

The faculty from other Science subjects especially Mathematics and Physics felt the need that there should be a basic elementary programming language that their students should undergo. In view of this demand expressed and made to the Computer Science department the faculty from the department decided to introduce Python Programming to students from these streams. Dr. Bharath Deshpande, Vice-Chancellor, Goa University, Nominee and Dr. Damodar Reddy Edla, Academic Council, Nominee, felt that introducing Python Programming will be very useful to students.

While going through the course structure Dr. Damodar Reddy Edla raised a query with respect to internship.

He felt that the existing 4 credits given to a student for just one month duration internship is not justified and so he suggested that the credits associated with the internship should be reduced.

Resolution 1.1: The Proposed Change of some papers in the existing Course Structure:

The proposed change of some papers of Semester III and Semester IV for the Academic Year 2016-17 of Core and Elective Courses for Under Graduate Degree Program in Computer Science offered for B.Sc. under Autonomy is approved unanimously by this house. (See Annexure I respectively)

AGENDA ITEM 2: APPROVING THE SYLLABI OF SEMESTER III AND SEMESTER IV FOR THE ACADEMIC YEAR 2016-17.

2.1 Presentation of the Syllabi

Before Mr. D. Prabakaran presented the syllabi, Dr. Deshpande made an observation that while going through the proposed syllabus in general he felt that the Learning Outcomes should be well defined in all the papers. He also suggested a need for including some time in the lecture schedule for tutorials and that some lectures should be conducted using problem solving techniques and discussion methods. Mr. Edla too seconded this. Further Dr. Deshpande also suggested that syllabi should not be bound and restricted by the ever-changing technology/software/platforms but instead the syllabi needs to be framed in such a manner that a student is well equipped with all fundamental knowledge in that paper so as to enable them to use any technology/software across all platforms. He added that if this done in a proper manner

then even a faculty could bring in their expertise and teach the paper innovatively as per their domain experience.

All BOS members agreed unanimously to this suggestion and Mr. D.Prabakaran then presented the syllabi of semester III and IV. The following is the discussion related to the presentation - paper wise.

Semester III: (Core Paper, COM-III.C-5): Database Management Systems

Mr. D.Prabakaran, presented the syllabus of the above mentioned paper. Dr. Edla pointed out that all basic Database concepts should also be introduced in the syllabus and that the topic of Concurrency Control should be covered.

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

Semester III: (Elective Paper 1, COM-III. E-1) : Software Engineering

Mr. D.Prabakaran, continued with the presentation of syllabus of the second elective paper offered in Semester III. Dr. Edla suggested that an introductory module on a brief introduction to the Software Engineering process should be included in the syllabus. He also recommended that the topic Halstead Analysis be included in the Coding module of the syllabus. Dr. Deshpande recommended that the module on HCI should be removed and instead a separate elective on HCI should be floated. He also recommended that the modules OOAD, UML and Software Architecture be replaced and maybe these topics could be instead offered as a separate advanced Elective on Software Engineering.

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

Semester III: (Elective Paper II, COM-III. E-2): Digital Logic Design

The next Elective Paper on Digital Logic Design was then presented by Mr. D. Prabakaran. Dr. Edla suggested that the number of lectures with respect to module 4 should be increased and that of module 5 can be reduced and lectures could be adjusted accordingly. In general he felt that students should complete at least/minimum 10 practicals in each paper per semester.

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

Semester III: (Elective Paper III, COM-III.E-3): Mathematical Foundation of Computer Science-II

Mr. D.Prabakaran continued with the presentation of syllabus of third elective paper in Semester III. Dr. Edla felt that Linear Algebra and Probability should be included in the syllabus. Dr. Adikari, member BOS felt that these topics may be covered earlier (Sem I/II) in the Mathematical Foundation of Computer Science-I and the Foundation Course paper titled Statistics which the students have to undertake as part of the course; however Dr.Edla suggested that at least some matter related to Vector spaces, probability and even matrix theory should be mentioned while teaching the paper. Dr. Deshpande recommended that all faculties read the ACM 20-30 document that elaborates how Computer Science curriculum should be framed and in view of this suggested that Numerical Analysis module that has been introduced in the syllabus should instead be replaced by adding probability theory and its applications.

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

Semester III: (Elective Paper IV, COM-III.E-4): Web Designing

The syllabus of third elective paper in Semester IV was presented next by Mr. D.Prabakaran. Dr. Deshpande felt that a module on User Interface should be introduced in the syllabus. Mr. Amod Borkar, industry representative mentioned that in industrial laboratories a lot of work is being done on fluid design, and that designing across all platforms, devices including graphs, bar charts etc are all the preferred and recent trends of the industry, so something with respect to this should also be mentioned in the syllabus. Dr. Edla felt that Case Studies could be given to students to be done in class or in laboratories so that the students can get an exposure of all the recent industry trends. UI Optimisation is one area that the students need to be aware of said Mr. Amod. Replying to a question posed by Mrs. Shaila Ghanti, member BOS, Dr. Deshpande felt that depending on the course the faculty need to decide whether to evaluate the students lecture wise or overall. Mini projects can also be listed as part of evaluation.

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

SEMESTER IV: (Core Paper, COM-IV.C-6): Computer Architecture and Organisation

Mr. D.Prabakaran then introduced the papers for Semester IV and presented the syllabus of Computer Architecture and Organisation. The syllabus was discussed, and no changes were recommended.

The entire paper with no changes accepted by the BOS is available in **Annexure III**.

Semester IV: (Elective Paper V, COM-IV. E-5): Design and Analysis of Algorithms

The next Elective Paper on Design and Analysis of Algorithms was then presented by Mr. D. Prabakaran. He recalled that this paper was suggested by Dr. Deshpande at the previous BOS meeting. Dr.Edla suggested that complexity classes and introduction to randomization and optimization should also be included in the syllabus. Both of them Dr. Deshpande and Dr.Edla suggested that the focus when teaching this paper should be more on Algorithm Design. Dr. Deshpande also suggested that Unit 5 be taught before Unit 6. He suggested that the module on string matching be dropped and instead Knapsack could be added.

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

Semester IV: (Elective Paper VI, COM-IV. E-6): DataBase Application Development

Mr. Amod suggested that students should be given a choice to choose tools/software when they work on assignments/projects or at least be aware of other databases. The focus should be on making students to think and expose them to various databases and encourage them to take up certifications. Dr. Deshpande felt that the portion on OOAD discussed in the earlier Software Engineering paper could be included/covered in Object Oriented Programming-II.

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

Semester IV: (Elective Paper VII, COM-IV. E-7): Object Oriented Programming – II

Mr. D.Prabakaran, presented the syllabus of the above mentioned paper. After going through the syllabus Dr.Deshpande and Mr. Amod felt that there were some parts of the syllabus that could be covered in an earlier paper Object Oriented Programming-I. However, there was some discussion whether this paper should be offered as Elective VII and it was decided to take this issue up after seeing the syllabus of Elective Paper VIII.

Semester IV: (Elective Paper VIII, COM-IV. E-8): Server Side Programming

Mr. D.Prabakaran, then presented the syllabus of the above mentioned paper.

Following the presentation of the syllabi of Elective VII and Elective VIII, the floor was open to discussion. After deliberations and discussions on the Elective paper VII and VIII, Dr.Despande , Mr. Amod and the rest of the BoS members felt that it was better to combine Elective VII and Elective VIII into a single Elective paper called Server Side Programming, the syllabus of which should take care of general concepts of Server Side programming without being language specific. Mr. Kumaresh, then suggested that if need be, according to request from students programming related papers like PHP, MySQL, etc could be offered by the department as a certificate course etc. Dr. Deshpande suggested that OOAD concepts could be covered in this paper.

This entire Elective Paper VII with the changes incorporated as per the discussion held by the BOS is available in **Annexure III**.

Further, Dr. Deshpande and Mr. Amod suggested, in view of an Elective Paper now dropped to introduce a new Elective paper VIII like HCI. As Mr.D.Prabakaran already had Goa University approved syllabus of HCI, this paper was then presented and the syllabus of this paper was unanimously accepted by all members. However, since the number of lectures was not specified it was suggested that this be included in the syllabus.

This entire Elective Paper VIII on HCI with the changes incorporated as per the discussion held by the BOS is available in **Annexure III**.

2.2 Resolution 2: The Proposed Syllabi

The proposed syllabi of Semester III and Semester IV for the Academic Year 2016-17 of Core and Elective Courses for Under Graduate Degree Program in Computer Science offered for B.Sc. under Autonomy is approved unanimously by this house. (See **Annexure II and Annexure III respectively**)

AGENDA ITEM 3: APPROVING INTERDISCIPLINARY ELECTIVE COURSES FOR S.Y.B.Sc./S.Y.B.A

Mr. D.Prabakaran then explained that as per the course structure the department had to offer an Interdisciplinary Elective Course papers to students from other disciplines. He then introduced syllabus of the two Interdisciplinary papers ie. Multimedia and Python Programming. All members felt that the batch size should be 40 when teaching such papers. Dr.Deshpande was of the opinion that in view of the changing times every science student should at least go through one programming language/course. He also suggested introducing other Elective papers like User Interface (UI) wherein very basic/low level interface design, creation of content, designing webpages etc. could be covered in this course. Mr. Amod stressed the need for visual designers in the industry so courses keeping such industry requirements could also be offered as electives.

The entire papers in Multimedia and Python Programming with the changes incorporated as per the discussion held by the BOS are available in **Annexure IV**.

3.1 Resolution 3: The Proposed Syllabi of Interdisciplinary Papers

The proposed syllabi of Interdisciplinary Papers in Semester III and Semester IV in Computer Science for the Academic Year 2016-17 of the Interdisciplinary Elective Papers titled Multimedia and Python Programming offered for B.A. and B.Sc. under Autonomy is approved unanimously by this house. (See **Annexure IV** respectively)

AGENDA ITEM 4: APPROVING THE FRAMEWORK OF THE QUESTION PAPER

Mr. D. Prabakaran then presented the format for the Question Paper (See **Annexure V**) . This was unanimously approved by all members of BOS. Dr. Deshpande suggested that online tools like Moodle etc should be used for continuous evaluations/assessments. He also suggested use of other freely available online evaluation tools that can be used to check errors in code/programs; designing standards; test case designs etc.

4.1 Resolution 4: The Approval of the Framework of the Question Paper

The framework of the Question paper in Computer Science offered for B.A. and B.Sc. under Autonomy is approved unanimously by this house. (See **Annexure V** respectively)

AGENDA ITEM 5: MINIMUM NUMBER OF PRACTICALS TO BE COMPLETED IN EACH PAPER

Mr. D. Prabakaran then presented the numbers of practicals to be completed in each paper. All BOS members unanimously approved 10 as the minimum number of practicals to be completed in each paper and suggested that the last few sessions if available should be kept for repeat/makeup sessions.

5.1 Resolution 4: The Minimum Number of Practical to be completed in each paper

The Minimum number of practicals to be completed in each paper as 10 in Computer Science offered for B.A. and B.Sc. under Autonomy is approved unanimously by this house. (See Annexure V respectively)

AGENDA ITEM 6: ANY OTHER BUSINESS (A.O.B)

Mr. D.Prabakaran showed the list of papers that would be offered to students in Semester V and Semester VI with a view to get a feedback before framing the syllabus that would be presented at the next BOS which will be scheduled later next year. Mr. Amod suggested including topics related to Hybrid Applications in order to create awareness amongst the students on the nature of Application Development. Dr. Deshpande felt that the paper like Digital Marketing be offered as an Interdisciplinary paper instead of offering it as an Elective paper at Semester V/VI. He also suggested to introduce papers like Data Analytics at Semester V level. He also suggested that the paper on System Security should cover concepts on Cryptography and that the paper titled E-Learning should be designed as a core paper on the guidelines of more design theories etc as offered at IIT Mumbai with a change in paper title. He suggested floating a new paper wherein all concepts like MIS, ERP, Project Management could be covered so that the students who will be graduating will get a good feel of the actual software industry project development and life cycle in all aspects. (See Annexure I respectively)

Dr. Deshpande also asked members about their feedback w.r.t the new Autonomous structure that was introduced from this academic year 2015-16. Members shared their experiences.

Dr. Deshpande and Mr. Amod also offered valuable inputs to frame the syllabus of PG courses like PGDCA and MSc-IT. They suggested that papers related to IT Maintenance be offered to such students as there is a demand for such jobs. They suggested including courses like Visual Designing, Software Tools, basic UI Design and HR related IT skill development papers to be

offered in the PGDCA Syllabus. For M.Sc-IT, Dr. Deshpande suggested that Elective paper could also be offered as a paper to students who would like to work on a project etc. instead of undergoing a full paper. Here the students are encouraged to channelize and put in a high quality of effort/work so that they could earn credits for the same. Contribution to the open source community, assisting faculty in research projects through which a research paper is contributed etc. are some ways in which the credits could be given. The scope should be such that the students is able to do something during the semester paper. He suggested that for courses like M.Sc-IT electives should be offered as per the student requirements with the interest of the faculty in mind.

PART B: Resolutions/Recommendations of BoS that require consideration / approval of Academic Council:

1. Distribution of Core Compulsory (CC) and Core Elective (CE) papers from the Academic year 2016-17 presented in Annexure I.
2. The Syllabi of Semester III presented in Annexure II
3. The Syllabi of Semester IV presented in Annexure III
4. The Syllabi of Interdisciplinary Papers presented in Annexure IV
5. The Framework of the Question paper presented in Annexure V

The foregoing minutes of the meeting are circulated by the Chairman on 30th October, 2015.

After a fruitful interaction and deliberation, vote of thanks to the Chair given by Mr. V.C Kumaresh, faculty of Computer Science Department.

The meeting ended at 2:00 pm.

The following members of Board of Studies in Computer Science were present for the meeting:

1. Mr. D.Prabakaran –HOD- Chairman
2. Dr. Bharath Deshpande – Vice-Chancellor, Goa University, Nominee
3. Mr. Amod Borkar – Industry Representative
4. Dr. Damodar Reddy Edla- Academic Council Nominee
5. Mrs. Shaila Ghanti - Member
6. Mr. Alberto Ian Barreto – Member
7. Mr. V.C. Kumaresh - Member
8. Dr. Animesh Adhikari - Member
9. Mrs. Suchitra Bhat - Member
10. Mrs. Judith Dias Barreto - Member

11. Mrs. Neeta V. Dhopeswarkar – Member
12. Dr.(Mrs). Sameena Falleiro – Member Secretary

Due to prior commitments Dr. V.V. Kamat (Academic Council Nominee) and Mr. Castellino Colenso (Alumni) conveyed their inability to attend the meeting.

Falleiro

Dr. Sameena Falleiro
Member Secretary
BoS(Computer Science)

D. Prabakaran

D. Prabakaran
Chairman
BoS(Computer Science)

Date : 30th October 2015

PART C: The remarks of the Dean of the Faculty:-

- a. The minutes are in order
- b. The minutes may be placed before the Academic Council with remark, if any.
- c. Important points of the minutes which need clear policy decision of the Academic council to be recorded.

Date: 4/11/2015

Signature of the Dean:

Ananya Das

(Faculty of Science)

(Dr. Ananya Das)