Dear Sir / Madam,

I'm Assistant Professor of Physics, working in Kerala. I have the following points to bring to the attention of the committee reformulating UG curriculum :

1. The general BSc. Physics semester program is being followed in the majority of colleges affiliated to the universities in Kerala. Here we have 11 to 13 core courses in physics, one elective paper in physics (total 54-56 credits) and one project (2 credits). Then, we have 4 Mathematics papers and 5 Chemistry/Computer Science papers as complementary courses (total 24 credits). In the general BSc programs of other subjects, the situation is similar - with one main subject having around 58 credits (including the project) and two complementary courses together having 24 credits. In both the proposed CBCS guidelines and the proposed syllabi, such a structure is not being considered for the general BSc programs. Instead, the proposed structure is that of triple-main, with three subjects of equal importance. In such a situation, a BSc Physics program consists of only 4 core courses in physics and 2 Discipline Specific Elective (DSE) courses in physics. The student can choose a Project instead of a DSE course and in that case the physics content of the program will be further reduced. Almost 50% of the physics content of the current BSc. Physics program cannot be included in the actual syllabus of the program. The content of Mathematics and Chemistry courses will be increased, but such a triple-main structure is hardly suitable for the students when they go for MSc courses. Moving such fundamentally important core courses being taught at the general BSc. Physics program, like Digital and Analogue electronics, Solid State Physics, Quantum Mechanics and Nuclear & Particle physics, to the category of DSE courses will only reduce the standard of the current general BSc. Physics program. These DSE courses may or may not be chosen by the students, and, if he/she opts for the Project, only one among these important courses will be learned by the student. Instead gaining specialized knowledge in any one main subject, along with the basics of the other two complementary subjects, the students only get an average level knowledge in the three subjects under the proposed triple-main scheme. It would be impossible for such students to qualify the national level entrance tests for MSc and Integrated PhD admission like JAM, JEST, entrance tests of various central universities etc.

**There should be an additional structure in the CBCS pattern for the general BSc. Physics program with physics as the main subject. There should be 12 core courses for Physics (main subject), having a total of 60 credits.** Each course can have 5 credits, with 3+2=5 for courses with lab experiments and 4+1=5 for courses with tutorial. Only 2hrs/week are required for the lab experiments in each core course. Mathematics and chemistry/computer science/other can be the complementary subjects. There should be 4 core courses for each complementary subject, having a total of 20 credits. Each complementary core course can have 5 credits, with 3+2=5 for courses with lab experiments and 4+1=5 for courses with tutorial. Thus the total credits for the complementary subjects can be 40. This will amount to 12+4+4=20 core courses. If this structure seems to lack flexibility, then one of the complementary courses (Mathematics) can be fixed as Discipline Specific Elective (DSE) and the other as Generic Elective (GE). So the minimum requirement for the general BSc. Physics program will be 12 core courses in physics, 4 DSE (Mathematics) and 4 GE (Chemistry), in addition to AECCs and SECs. The student can choose Project (5 credits) as an additional DSE course. Making the Project optional and an additional course will result in only the highly motivated students aiming for their PG in Physics to opt for it. This structure is almost the same as the BSc. Honours Physics program proposed in the CBCS guidelines and the syllabi. The differences are that instead of 14 core papers in physics there will be 12 core papers in physics and the definition of DSE is modified to include only the different papers from one of the complementary subjects (Mathematics) while the definition of GE is modified to include the different papers from the other complementary subject of choice (Chemistry/Computer science/other).

2. (a) For most of the Skill Enhancement Courses (SEC) in the proposed model, no lab experiments are given (e.g. : Physics Workshop Skill, Electrical Circuit Network Skills, Mechanical Drawing). In one SEC called Weather Forecasting the experiments are high school level activities. In another SEC called Basic Instrumentation Skills, all the experiments belong to the regular lab experiments in the paper Digital and Analogue Electronics being taught in the general BSc. Physics program now. The proposed list and syllabi of SECs should be fundamentally remodeled. 2hrs/week are insufficient to provide the students with hands on experiences on various skills. There should be minimum 6 hrs/week for each SEC.

(b) There is no sufficient scope in the proposed curriculum for improving the communication skills of the students, both in English and MIL. Only one course with 2 credits is insufficient for this purpose. Courses oriented towards developing communication skills should be included in the list of SECs. Some examples could be Communication Skills in English, Communication Skills in MIL, Critical Reasoning and Presentation, Translation and Communication etc. A few of these courses can be formulated as AECCs. In general BSc. Physics program there can be 4 SECs with 3 credits each. [4x3=12 credits]

3. The contemporary global scenario acknowledges the importance of humanities as a component the basic science programs and technical programs. The motivation behind the inclusion of Environmental Sciences as one Ability Enhancement Compulsory Courses (AECC) is very well applicable for such humanities courses like History and Philosophy of Science and Indian Constitution. There should be sufficient component of humanities courses as part of AECCs. In general BSc. Physics program there can be 4 AECCs with 2 credits each. [4x2=8 credits].

**Proposed Scheme for CBCS in General BSc. Physics**

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| **Semester** | **Core Course (12)**  **12 x 5 = 60 credits** | **Ability Enhancement Compulsory Course (AECC) (4)**  **4 x 2 = 8 credits** | **Skill Enhancement Course (SEC) (4)**  **4 x 3 = 12 credits** | **Discipline Specific Elective (DSE) (4)**  **4 x 5 = 20 credits** | **Generic Elective (4)**  **4 x 5 = 20 credits** |
| I | C1  Theory - 4 hrs  Lab - 2 hrs | AECC 1  3 hrs | SEC 1  6 hrs | DSE 1  5 hrs | GE 1  5 hrs |
| II | C2  Theory - 4 hrs  Lab - 2 hrs | AECC 2  3 hrs | SEC 2  6 hrs | DSE 2  5 hrs | GE 2  5 hrs |
| III | C3  Theory - 4 hrs  Lab - 2 hrs | AECC 3  3 hrs | SEC 3  6 hrs | DSE 3  5 hrs | GE 3  5 hrs |
| IV | C4  Theory - 4 hrs  Lab - 2 hrs | AECC 4  3 hrs | SEC 4  6 hrs | DSE 4  5 hrs | GE 4  5 hrs |
| V | C5 |  |  |  |  |
| C6 |  |  |  |  |
| C7 |  |  |  |  |
| C8 |  |  |  |  |
| VI | C9 |  |  |  |  |
| C10 |  |  |  |  |
| C11 |  |  |  |  |
| C12 |  |  |  |  |