



## Approach for initiation of double/multiple degree programme at undergraduate level (in Engineering disciplines ) in universities/technical institutions

### **I. INTRODUCTION**

The latest developments in the areas of information and communication technology have recognized the vital role that higher education plays in socio-economic development. To fulfil this role, universities and university level institutions need to be committed to flexibility, quality and enterprises.

Knowledge will not be a source of authority, but also the capital for further economic development. Formal and informal education, lifelong learning and fundamental research and its understanding are central to economic progress in the knowledge economy. The ability to learn and to interact with others, to learn from others, is at the heart of individual and organizational success in the knowledge economy.

Universities and university level institutions need to prepare themselves to take full advantage of the aforesaid changes and revise and restate their regulations with an objective to produce a human resource not only worthy of the knowledge society but also to be a stakeholder in the knowledge economy.

This, therefore, warrants a lot more flexibility in the university system for an individual student to be able to have lateral entry with a diverse background to learn and grow at his/her own pace and to acquire knowledge unhindered by the existing rigid timeframe for a degree or a set of degrees.

Considering the above imperatives of recent changes, the UGC constituted a committee to look at the nature and the extent of flexibility that ought to be available in the universities and university level institutions for the prospective students to acquire meaningful and purposeful undergraduate degrees and post-graduate diplomas in one or more diverse disciplines of interest so as to prepare them as future citizens of knowledge.

## **II. MULTIPLE DEGREE PROGRAMME (MDP)**

1. The programme will be named as "Multiple Degree Programme".
2. In-built flexibility is at the core of this concept that would fundamentally govern the higher education system in India so that knowledge can be acquired based upon aspirations, motivations and the need of the individual in an optimal timeframe.
3. Universities and institutions of higher education imparting knowledge/training in programmes of engineering and technology should provide an enabling environment to the students registering for these programmes to learn and acquire knowledge at their own pace and acquire one or more undergraduate engineering degrees and/or postgraduate diplomas. The design of the curriculum and the course contents should lay stress on creativity, innovation and R&D. Bringing about attitudinal changes amongst students is also the responsibility of the universities and institutions of higher learning. The students during their programme of study must acquire sound knowledge and develop a few skills as well as an entrepreneurial attitude.
4. The entry-level qualification for the first engineering degree programme shall be as laid down by AICTE from time to time. For the additional/add-on degree the entry-level qualification shall be first division or a grade point average of 7.0 on 10 point scale in the first engineering degree programme.
5. An engineering degree holder can opt to register for the additional/add-on degree after a gap of time. However, such candidates will be administered a qualifying test. On the basis of the performance in the said qualifying test, an individual will be declared eligible to register for the multiple degree programme. The performance in the qualifying test would also decide the bridge courses, if any, to be taken by the eligible candidates during their additional/add-on programme in order to make up for any deficiencies created due to the time gap.
6. Care should be exercised to ensure that the knowledge content to be imparted during the additional/add-on degree programme along with the background of the individual registering for it adds up to be the same as that of the first degree course in the said programme. There should be no dilution, whatsoever, in this regard.
7. Total knowledge content for the additional/add-on degree remaining the same, the duration of the additional/add-on degree programme shall be decided by the course/credits which the individual student is required to take during the additional/add-on programme discounting for the common courses already taken by him in the first/earlier degrees as well as based

on his performance in the qualifying test for the current programme.

8. A one year postgraduate diploma in (1) any engineering discipline and/or (2) computer and IT application to any undergraduate engineering degree e.g. PG diploma in computer and IT applications to civil, electrical, mechanical engineering, etc. should also be a part of the multiple degree programme and the design of these one-year programmes would be synergistically synthesized with the four-year degree programme of the basic engineering discipline. The option for this postgraduate diploma should be made available to the students registered for the basic degree at the end of their second year programme. This essentially means that there is flexibility for an individual to obtain advanced knowledge in the area and/or acquire knowledge and skill of operation of computer and IT tools to the chosen engineering discipline.
9. Fee structure for a semester or a part thereof for an additional/add-on degree programme should be the same as that of the first degree programme.
10. For diploma students who are admitted to the second year of the engineering degree programme, the basic fundamental courses in sciences, humanities and social sciences, management and engineering sciences covered during the first year of the engineering degree programme should be offered as bridge courses. Only such diploma entrants to the first degree programme who have gone through the said bridge courses would be eligible for availing the flexibility of registering in the multiple degree programme.

### **III. FRAMEWORK FOR MULTIPLE DEGREE PROGRAMME**

1. 33% TO 38 % (52 to 60 credits) of the curriculum of the four-year engineering degree programmes (total 160 credits ) is common and is generally termed as core programme or core knowledge to all engineering disciplines. Therefore, a student registering, after the successful completion of the first engineering degree, for an additional/add-on degree in an allied or diverse discipline need not repeat this common part of the curriculum in case such a registration follows immediately after the completion of first engineering degree. If, however, such a registration is after a gap of time, then the performance of the candidate in the qualifying test would decide the advance credits to be given in lieu of earlier degrees, as well as the bridge courses to be taken by the candidate during the current degree programme to make up for the deficiencies arising due to the time gap. In no case such advance credits for core programme or core knowledge would exceed 52 to 60 credits as the case may be in the individual university/institution. In other words, this means that the additional time taken for an additional/add-on engineering degree will be a minimum of 2

1/2 years (five semesters) to offer courses amounting to about 100-108 credits.

2. In some of the allied engineering disciplines e.g. computer science & engineering (CScE) and electronics & communication engineering (ECE), and electronics & instrumentation engineering (EIE), mechanical engineering (M.E) and production engineering (Prod.E) and industrial engineering (Indl. E), chemical engineering (Ch.E) and biochemical engineering (BCh.E) and Ch.E and polymer engineering (Poly.E), etc. a sufficient number of professional courses are also common. Hence, a student, if having successfully completed the first engineering degree in one of these disciplines, opts for an additional degree in the allied discipline he/she would be entitled for additional advance credits for such common professional courses. This means that such an additional/add-on degree can be earned in a minimum of 1 to 1 1/2 years (2 to 3 semesters).
3. Depending upon the quantum of common courses between the earlier degrees acquired and the current registered programme, a student would be able to acquire an additional/add-on engineering degree in an additional timeframe of 1, 1 1/2, 2 or 2 1/2 years as the case may be.
4. Total knowledge contents for additional/add-on undergraduate engineering degree shall remain the same in all circumstances i.e. the total number of advance credits awarded for the earlier degrees and the credits to be earned during the current programme of the additional/add-on engineering degree should add up to 160 credits (prescribed credits for four-year engineering degree programme ) and of the knowledge content as that of the corresponding first engineering degree.
5. One-year postgraduate diploma ( PGD) programmes would also be the part of the multiple degree programme and the course contents for this one-year PGD would be substantially different and more focussed than the present five-year integrated programmes.

#### **IV. OPERATIONAL INITIATIVES TO BE TAKEN BY THE UNIVERSITIES**

1. Universities may deliberate the matter of Multiple Degree Programme in their engineering faculty.
2. The matter may also be discussed in the Academic Council and with teachers/industries/students in the form of seminars/symposia/workshops.
3. Universities/institutions may bring requisite changes, if necessary in their Act/ Statues/Regulations etc. to provide this flexibility to student in letter and spirit.

4. After deliberating the matter, every effort must be made by the university/institution to start the Multiple Degree Programme in engineering discipline.