B.S.ABDUR RAHMAN UNIVERSITY
B.S.ABDUR RAHMAN INSTITUTE OF SCIENCE & TECHNOLOGY
(Estd. u/s 3 of the UGC Act, 1956)

B.S ABDUR RAHMAN UNIVERSITY, CHENNAI – 48

POST GRADUATE PROGRAMMES

Credit Based Curriculum and Evaluation System

1.0 Preamble

The aim of postgraduate education programme is to be impart in depth knowledge and skill in specialised area pertaining to a discipline to meet the needs of industry, educational and R&D institutions. Due to continuous development coupled with varied needs of industry, the curriculum and syllabi requires to be updated frequently. Moreover the caliber of students admitted to the P.G. programmes also varies widely. Hence, as a deemed to be University there is an imperative need for adoption of flexible system of curriculum design so as to improve the teaching learning process.

Many autonomous Institutions of higher learning like I.I.T.'s, unitary universities like Anna University and Autonomous Colleges have identified the semester system pattern with Credit based Curriculum and continuous assessment as the best system both for under-graduate and post-graduate programmes. Credit based system is a flexible curriculum pattern with many merits. It is devoid of many limitations associated with the conventional rigid pattern of curriculum. Most of the U.S Universities follow the credit based systems.

2.0 The credit based system

i) The credit system is a flexible system of curriculum design in which any academic programme is designed with the required Courses (subjects) of study. Each course is assigned a weight (credit) depending upon its relative importance to the programme of definite total credit rating. A course of study comprises in general, lectures, tutorials, practices, seminar, training etc. Credit assigned to a course essentially depends on the contact periods / week for that course and on the intensity of knowledge transfer / learning.

The credit pattern suggested for adoption is as follows:

a) Every lecture & Tutorial period per week : 1 credit
b) Every laboratory / practice of 2-3 period per week : 1 credit
c) Four weeks of practical training : 1 credit
d) Project work of 12 periods : 6 credits
e) Project work of one full semester : 18 credits

ii) The student's performance in each course is evaluated through continuous assessment which is carried out at different points in time during the semester and is reflected in a **grade**. There is a **grade point** associated with each grade. The student earns the credits assigned to a course if he / she secures atleast the minimum pass grade. Otherwise he / she has to re-register for this course if it is a Core course.

iii) The students performance in a semester is measured using Grade point Average (GPA). The GPA is defined as

$$GPA = \frac{\sum_{i}^{n} C_i \, GP_i}{\sum_{i}^{n} C_i}$$

where C_i = the credit for ith course

GP_i = Grade Point secured in the ith course

n = No. of courses registered by the candidate in that semester

iv) The student's performance at any point in time in the programme is measured using the Cumulative Grade Point Average (CGPA) which is defined by a formula similar to the above but the summation over all the courses registered in the various semesters up to that point in time. The overall performance of the student in the programme is also given by the CGPA.

3.0 Curriculum design

i) Curriculum Design is an involved exercise since it needs integration of not only the current educational needs of the specialised profession, but also the anticipated needs arising out of the fast changing national and international technological scene. To make the curriculum both dynamic so as to meet the evolving needs and yet flexible, it is necessary to identify the core part of the

curriculum which embodies scientific and engineering knowledge basic to the field. To this core, is added in different proportions, the other ingredients of knowledge of both current and emerging technological processes and systems. With a proper balancing of the core, specialised and elective subjects and suitable integration of meaningful practical and field exercises and challenging project activity, the curriculum can, not only provide the students with relevant specialised knowledge, but also develop in them the capacity to tackle unknown engineering problems and help them acquire sound professional ethics and an awareness of their obligations of society.

ii) The first step in the curriculum design is to define the credit in terms of number of periods / week of Lecture / Laboratory etc. as indicated supra. Then, the minimum duration of completion of the programme and average work load of student per semester in terms of credits must be fixed. For example, for M.Tech. programme the minimum duration is chosen as 4 semesters and the average load is chosen about 20 credits / semester, so that the total credits to be earned by a student for the award of M.Tech.degree programme is 75 to 80. There can be variation to a limited extent in each semester depending up on the need.

iii) The second step in the Curriculum design is to arrive at the optimal mix of different categories of Courses which are essential to convert a student into a professional engineer. The optimal mix is usually prescribed by means a "Minimum Credit Requirement" for various P.G. programmes is given below:

Programme	**Minimum credit range**
M.Tech	70-80
MCA	100
M.B.A.	90
M.Phil	28-30
M.Sc.	74-80

The above a minimum requirement indicated is based on the experience and prevalent practices

iv) The next step is to list under each of these categories the titles of various courses that are to be taught under the programme. The credit requirement for each course is also fixed. One way of accommodating all these courses is to make the curriculum flexible by identifying certain essential courses as Core Courses and putting the other courses under different elective slots.

v) The final step in the Curriculum Design is to prepare a "Nominal Curriculum" by listing the various courses, both Cores and Electives, to be credited under each semester. Sequencing of the Courses and fixing the pre-requisites are important.

4.0 Features of the credit system.

Important feature of the proposed credit based system is given below.

i) The programme is to be completed within the stipulated **maximum duration**. The minimum and maximum period of the P.G. programmes will be as follows:

Programmes	Min. No. of semesters	Maximum No. of of semesters
M.Tech. (full time)	4	8
M.Tech (part time)	6	12
MCA (full time)	6	12
M.B.A / M.Sc.(full time)	4	8
M.B.A (part time)	6	12
M.Phil.(full time)	2	4

ii) Well before the beginning of every semester each student has to **register** for the courses to be undertaken in that semester and just before the beginning of the semester the student should **enroll**, indicating the actual courses registered by him / her.

iii) Each student will be attached to a **Faculty Adviser** who will provide necessary guidance and help required by the student throughout the programme.

iv) For Lecture based courses a minimum of two sessional assessments will be made besides the End semester Examination and one End semester Examinations for each Laboratory based course.

v) A **Class Committee** comprising the Course Instructors, Faculty Advisers and Student Representatives monitors the progress of the students and alleviates any difficulties faced in implementation of the academic programme.

vi) Semester load in the nominal curriculum may vary between 15 to 20 credits. However, a student can, off-load some credits in a semester, if required, in consultation with the Faculty Adviser.

vii) Each eligible student of PG programme has to carryout a project work / thesis / dissertation under the supervision of a qualified teacher in the concerned Department during the last semester of the programme.

viii) A student will have to earn a minimum number of total credits prescribed in the curriculum to register for the project semester. The minimum credits specified is given below:

M.Tech (full time)	18 (III semester)
M.Tech (part time)	18 (V semester)
MCA (full time)	45 (VI semester)
M.B.A (full time)	27 (IV semester)
M.B.A (part time)	27 (IV semester)
M.Sc.	28 (IV semester)

ix) If a student does not earn the required credit specified he / she has to complete the arrears to the extent of minimum credit required and then register for the project semester.

5.0 Assessment System

5.1 Continuous Assessment

i) Evaluation of student's performance in individual courses is an Important Component of Teaching – Learning process. Continuous assessment helps not only in monitoring the progress of the student but also in taking corrective action in time to improve the performance of the student. The system of sessional assessments and examinations to be conducted for each lecture-based course offered in the programme will be as follows:

a) The following rule will apply to

All Full Time and Part Time PG. Programmes (M.Tech, M.B.A, MCA and M.Sc.)

For lecture-based courses, normally a minimum of two sessional assessments will be made during the semester. The sessional assessments may be combination of periodical tests and assignments. The assessment procedure as decided at the Class Committee will be announced to the students right at the beginning of the semester by the teacher and informed to the Head of Institution.

M.B.A. – The tests followed by one case study and assignment will be made during the semester.

b) There shall be one end semester examination of 3 hours duration in each lecture based course.

c) The evaluation of the Project work will be based on the project report and a Viva-Voce Examination by a team consisting of the supervisor concerned, an Internal Examiner and External Examiner to be appointed by the Controller of Examinations.

d) At the end of practical training or industrial attachment, the candidate shall submit a certificate from the organization where he / she has undergone training and also a brief report. The evaluation will be made based on this report and a Viva-Voce

Examination, conducted internally by a Departmental Committee constituted by the Head of the Department.

e) A student who missed an assessment test including end semester examinations for genuine reasons, may be permitted to write a substitute examination. Such permission can be accorded only under exceptional circumstances such as accident or admission to a hospital due to illness.

ii) In Laboratory-based courses the Instructor will decide the mode of sessional assessment. The Instructor may even go in for evaluation of every experiment conducted by the student. There will be one End-semester examinations of 3 hours in each Lab-based course.

iii) The progress of Project work will be assessed continuously during the semester by a committee of faculty members constituted by the HOD. Atleast minimum of three assessments will be made. The student will have to submit a written progress report duly attested by the guide before he appears before the assessment committee.

5.2 Weightage

The weightages for the various components of assessment are as follows:

a) Lecture-based courses :

Continuous assessment (Equal weightage for each test)	: 50%
End-Semester Examinations	: 50%

b) Laboratory-based courses :

Continuous Assessment	: 75%
End-Semester Examinations	: 25%

c) Project Work :

Continuous Assessment	: 50%
Evaluation of Project report by External Examiners	: 20%
Viva-voce Examinations	: 30%

1.5 Grading System

i) Based on the semester performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades, the mark ranges and the corresponding grade points are as follows, but grading has to be relative grading:

Mark range (suggested only)	Letter grade	Grade points
90 - 100	S	10
80 - 89	A	9
70 - 79	B	8
60 - 69	C	7
55 - 59	D	6
50 - 54	E	5
0 - 49	U	0
Incomplete	I	-
Withdrawal	W	-

Relative, flexible grading system will be adopted

"W" denotes withdrawal from the course

"I" denotes inadequate attendance and hence prevention from End-semester examination.

"U" denotes failure in a course.

ii) A student is considered to have completed a course successfully and earned the credits if he / she secure 5 grade points or higher. A letter grade U in any course implies a failure in that course. A course successfully completed cannot be repeated for the purpose of improving Cumulative Grade Points Average.

iii) A final meeting of the Class Committee without the student members(s) will be convened within ten days after the last day of the end-semester examination. The letter grades to be awarded to the students for different courses will be finalized at the meeting.

7.0. Course Codification

For all core and laboratory course, a five digit alpho-numerical code has been adopted. The first two digits represent the Department offering the subject and the next three digits indicate the serial number of the course. For the elective subjects a six digit code adopted. The first two digits represent the Department offering the elective, the third digit 'Y' identifies, that it is a postgraduate elective and the last three digits indicate the course serial number.