

# **AQAR 2021-22**

**Number of Programmes in which Choice Based Credit System (CBCS) / elective course system has been implemented during the year**

**AQAR 2021-22**

1.1.2 Number of programmes where syllabus revision was carried out during the year

Year	2021-22
Number	26

1.2.2 Number of Programmes in which Choice Based Credit System (CBCS)/elective course system has been implemented during the year

Year	2021-22
Number	57

S. No.	Programme Code	Programme name	Year of Introduction	Status of implementation of CBCS / elective course system (Yes/No)	Year of implementation of CBCS / elective course system	Year of revision (if any)	If revision has been carried out in the syllabus during the year, Percentage of content added or replaced
1	CE	B.Tech. Civil Engineering	2009	Yes	2009	2021-22	<b>58</b>
2	ME	B.Tech. Mechanical Engineering	2009	Yes	2009	2021-22	<b>62</b>
3	PE	B.Tech. Polymer Engineering	2009	Yes	2009	2021-22	<b>37</b>
4	AE	B.Tech. Aeronautical Engineering	2010	Yes	2010	2021-22	<b>30</b>
5	AU	B.Tech. Automobile Engineering	2011	Yes	2011	2021-22	<b>44</b>
6	EE	B.Tech. Electrical & Electronics Engineering	2009	Yes	2009	2021-22	<b>68</b>
7	EC	B.Tech. Electronics & Communication Engineering	2009	Yes	2009	2021-22	<b>44</b>

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8	EI	B.Tech. Electronics & Instrumentation Engineering	2009	Yes	2009	2021-22	28
9	CS	B.Tech. Computer Science & Engineering	2009	Yes	2009	2021-22	57
10	AIDS	B.Tech. Artificial Intelligence & Data Science	2020	Yes	2020	2021-22	25
11	CYS	B. Tech. CSE (Cyber Security)	2020	Yes	2020	2021-22	3
12	IOT	B. Tech. CSE (IoT)	2020	Yes	2020	2021-22	3
13	IT	B.Tech. Information Technology	2009	Yes	2009	2021-22	61
14	BT	B.Tech. BioTechnology	2014	Yes	2014	2021-22	45
15	AR	B.Arch.	2010	Yes	2010	2021-22	28
16	DES	B.Des.	2017	Yes	2017	2021-22	81
17	BP	B. Pharmacy	2017	Yes	2017	2021-22	13
18	BBL	BBA LLB (Hons)	2017	Yes	2017	2021-22	8
19	BAL	B.A. LLB (Hons)	2019	Yes	2019	2021-22	Nil
20	BCA	B.C.A.	2016	Yes	2016	2021-22	68
21	BCS	B.Sc. Computer Science	2016	Yes	2016	2021-22	73
22	BBT	B.Sc. Biotechnology	2017	Yes	2017	2021-22	86
23	CGN	B.Com. (General)	2017	Yes	2017	2021-22	83

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24	CAF	B.Com (Accounts & Finance)	2017	Yes	2017	2021-22	83
25	CGH	B.Com. (Hons.)	2019	Yes	2019	2021-22	37
26	BBF	BBA (Financial Services)	2017	Yes	2017	2021-22	63
27	BBG	BBA (General)	2019	Yes	2019	2021-22	84
28	BAE	B.A English (Hons)	2019	Yes	2019	2021-22	96
29	BIS	B.A. Islamic Studies	2010	Yes	2010	2021-22	35
30	BAP	B.A. Public Policy	2021	Yes	2021	2021-22	New Programme
31	SE	M.Tech. Structural Engineering	2010	Yes	2010	2021-22	Nil
32	CEPM	M.Tech. Construction Engineering & Project Management	2009	Yes	2009	2021-22	Nil
33	CADM	M.Tech. CAD CAM	2009	Yes	2009	2021-22	Nil
34	AVI	M.Tech Avionics	2019	Yes	2019	2021-22	Nil
35	PSE	M.Tech. Power Systems Engineering	2009	Yes	2009	2021-22	Nil
36	VLSI	M.Tech. VLSI & Embedded Systems	2013	Yes	2013	2021-22	Nil
37	CSEN	M.Tech. Computer Science Engineering	2013	Yes	2013	2021-22	Nil
38	MAIDS	M.Tech. Artificial Intelligence and Data Science	2021	Yes	2021	2021-22	New Programme
39	INTE	M.Tech. Information Technology	2009	Yes	2009	2021-22	Nil

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40	BTE	M.Tech. Biotechnology	2013	Yes	2013	2021-22	Nil
41	MFB	M.Tech. Food Biotechnology	2021	Yes	2021	2021-22	New Programme
42	ARCH	M.Arch	2018	Yes	2018	2021-22	Nil
43	MBA	MBA	2009	Yes	2009	2021-22	29
44	MIEV	MBA (IEV)	2021	Yes	2021	2021-22	New Programme
45	MCA	MCA	2009	Yes	2009	2021-22	20
46	AS	M.Sc. Actuarial Science	2011	Yes	2011	2021-22	Nil
47	CHY	M.Sc. Chemistry	2010	Yes	2010	2021-22	Nil
48	PHS	M.Sc. Physics	2014	Yes	2014	2021-22	Nil
49	MBT	M.Sc. Biotechnology	2013	Yes	2013	2021-22	Nil
50	MCB	M.Sc. Microbiology	2013	Yes	2013	2021-22	Nil
51	MBM	M.Sc. Biochemistry & Molecular Biology	2017	Yes	2017	2021-22	Nil
52	MCM	M.Com.	2020	Yes	2020	2021-22	Nil
53	IST	M.A. Islamic Studies	2016	Yes	2016	2021-22	Nil
54	ODL	MBA	2021	Yes	2021	2021-22	New Programme

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55	ODL	MCA	2021	Yes	2021	2021-22	New Programme
56	OL	MBA	2021	Yes	2021	2021-22	New Programme
57	OL	MCA	2021	Yes	2021	2021-22	New Programme

  
**REGISTRAR**

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B.S. Abdur Rahman  
**Crescent**  
Institute of Science & Technology  
Deemed to be University u/s 3 of the UGC Act, 1956

## *Regulations 2021*

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### *B.Tech. Degree Programmes*

**REGULATIONS - 2021**  
**B.TECH. DEGREE PROGRAMMES**  
**(Under Choice Based Credit System)**

### 1.0 PRELIMINARY DEFINITIONS & NOMENCLATURE

In these Regulations, unless the context otherwise requires:

- i) **"Programme"** means B.Tech. Degree Programme.
- ii) **"Branch"** means specialization or discipline of B.Tech. Degree Programme like Civil Engineering, Mechanical Engineering, etc.,
- iii) **"Course"** means theory / practical / laboratory integrated theory / seminar / internship / project and any other subject that is normally studied in a semester like English, Mathematics, Environmental Science, Engineering Graphics, Electronic Devices etc.,
- iv) **"Institution"** means B.S. Abdur Rahman Crescent Institute of Science and Technology.
- v) **"Academic Council"** means the Academic Council, which is the apex body on all academic matters of this Institute.
- vi) **"Dean (Academic Affairs)"** means the Dean (Academic Affairs) of the Institution who is responsible for the implementation of relevant rules and regulations for all the academic activities.
- vii) **"Dean (Student Affairs)"** means the Dean (Students Affairs) of the Institution who is responsible for activities related to student welfare and discipline in the campus.
- viii) **"Controller of Examinations"** means the Controller of Examinations of the Institution who is responsible for the conduct of examinations and declaration of results.
- ix) **"Dean of the School"** means the Dean of the School of the department concerned.
- x) **"Head of the Department"** means the Head of the Department concerned.

### 2.0 ADMISSION

**2.1a)** Candidates for admission to the first semester of the eight semester B. Tech. degree programme shall be required to have passed the Higher Secondary Examination of the 10+2 curriculum (Academic stream) prescribed by the appropriate authority or any other examination of any University or authority accepted by the Institution as equivalent thereto.

- 2.1b)** The student shall have studied at least any three of the following courses: Physics, Mathematics, Chemistry, Computer Science, Electronics, Information Technology, Biology, Informatics Practices, Biotechnology, Technical Vocational Subjects, Agriculture, Engineering Graphics, Business Studies, Entrepreneurship at 10+2 level. In case if the student has not studied any or all the courses viz., mathematics, physics and chemistry, he / she shall undergo bridge course(s) in the concerned course(s) at 10+2 level knowledge.
- 2.2** Notwithstanding the qualifying examination, the candidate might have passed at 10+2, the candidate shall also write an entrance examination prescribed by the Institution for admission. The entrance examination shall test the proficiency of the candidate in the courses considered eligible for admission on the standards prescribed for 10+2 academic stream.
- 2.3** Candidates for admission to the third semester of the eight semester B.Tech. programme under lateral entry category shall be required to have passed minimum Three years / Two years (Lateral Entry) Diploma examination in any branch of Engineering / Technology or passed B.Sc. Degree from a recognized University as defined by UGC and passed 10+2 examination with Mathematics as a subject or Passed three year Diploma of Vocation Stream (D.Voc) in the same or allied sector or any other examination of any other authority accepted by the Institution as equivalent thereto.
- 2.4** The Institution shall offer suitable bridge courses in Mathematics, Physics, Engineering drawing, etc., for the students of diverse backgrounds.
- 2.5** The eligibility criteria such as marks, number of attempts and physical fitness shall be as prescribed by the Institution in adherence to the guidelines of regulatory authorities from time to time.

### **3.0 BRANCHES OF STUDY**

**3.1** Regulations are applicable to the following B.Tech. Degree programmes in various branches of Engineering and Technology, each distributed over eight semesters, with two semesters per academic year.

1. Aeronautical Engineering
2. Artificial Intelligence and Data Science
3. Automobile Engineering
4. Biotechnology
5. Civil Engineering
6. Computer Science and Engineering
7. Computer Science and Engineering (Cyber Security)

8. Computer Science and Engineering (Internet of Things)
9. Electrical and Electronics Engineering
10. Electronics and Communication Engineering
11. Electronics and Instrumentation Engineering
12. Information Technology
13. Mechanical Engineering
14. Polymer Engineering

#### **4.0 STRUCTURE OF THE PROGRAMME**

**4.1** Every programme has a curriculum with syllabi consisting of theory and practical courses such as,

- i) Basic Science Courses - BSC
- ii) Humanities and Social Sciences including Management Courses - HSC
- iii) Engineering Science Courses - ESC
- iv) Professional Core Courses - PCC
- v) Professional Elective Courses - PEC
- vi) Open Elective Courses - OEC
- vii) Laboratory Courses – LC
- viii) Laboratory Integrated Theory Courses – LITC
- ix) Mandatory Courses- MC
- x) Project - PROJ (Project work, seminar and internship in industry or at appropriate workplace)

##### **4.1.1 Mandatory Induction Programme for First year Students**

The first year students upon admission shall undergo a mandatory three week induction programme consisting of physical activity, creative arts, universal human values, literary, proficiency modules, lectures by eminent people, visits to local areas, familiarization with departments / schools and centres, etc.,

##### **4.1.2 Personality and Character Development**

All students shall enroll, on admission, in any of the following personality and character development programmes:

- National Cadet Corps (NCC)
- National Service Scheme (NSS)
- National Sports Organization (NSO)
- Youth Red Cross (YRC)
- Rotaract
- Crescent Indian Society Training Development (ISTD – C)

- Crescent Creative Strokes
- Crescent Technocrats club

The training activities / events / camp shall normally be organized during the weekends / vacation period.

#### **4.1.3 Online Courses for Credit Transfer**

Students are permitted to undergo department approved online courses under SWAYAM up to 20% of credits of courses in a semester excluding project semester with the recommendation of the Head of the Department / Dean of School and with the prior approval of Dean (Academic Affairs) during his / her period of study. The credits earned through online courses ratified by the respective Board of Studies shall be transferred following the due approval procedures. The online courses can be considered in lieu of core courses and elective courses.

#### **4.1.4 Value Added Courses**

The students are permitted to pursue department approved online courses (excluding courses registered for credit transfer) or courses offered / approved by the department as value added courses.

The details of the value added course viz., syllabus, schedule of classes and the course faculty shall be sent to the Dean (Academic Affairs) for approval. The students may also undergo the valued added courses offered by other departments with the consent of the Head of the Department offering the course.

These value added courses shall be specified in the consolidated mark sheet as additional courses pursued by the student over and above the curriculum during the period of study.

#### **4.1.5 Industry Internship**

The students shall undergo training for a period as specified in the curriculum during the summer vacation in any industry relevant to the field study.

The students are also permitted to undergo internship at research organizations / eminent academic institutions for the period prescribed in the curriculum during the summer vacation, in lieu of Industrial training.

In any case, the student shall obtain necessary approval from the Head of the Department / Dean of School and the training has to be taken up at a stretch.

#### **4.1.6 Industrial Visit**

The student shall undergo at least one industrial visit every year from the second year of the programme. The Heads of Departments / Deans of Schools shall ensure the same.

#### **4.2 Each course is normally assigned certain number of credits:**

- one credit per lecture period per week
- one credit per tutorial period per week
- one credit for two to three periods and two credits for four periods of laboratory or practical sessions per week
- one credit for two periods of seminar / project work per week
- one credit for two weeks of industrial training or 80 hours per semester.

#### **4.3 Each semester curriculum shall normally have a blend of lecture courses, laboratory courses, laboratory integrated theory courses, etc.**

#### **4.5 The medium of instruction, examinations and project report shall be in English, except for courses in languages other than English.**

### **5.0 DURATION OF THE PROGRAMME**

#### **5.1 A student is expected to complete the B.Tech. programme in eight semesters (six semesters in the case of lateral entry scheme), but in any case not more than 14 continuous semesters reckoned from the date of first admission (12 semesters in the case of lateral entry students).**

#### **5.2 Each semester shall consist of a minimum of 90 working days including the days of examinations.**

#### **5.3 The maximum duration for completion of the programme as mentioned in clause 5.1 shall also include period of break of study vide clause 7.1 so that the student may be eligible for the award of the degree.**

### **6.0 REGISTRATION AND ENROLLMENT**

#### **6.1 The students of first semester shall register and enroll for courses at the time of admission by paying the prescribed fees. For the subsequent semesters registration for the courses shall be done by the student one week before the last working day of the previous semester.**

#### **6.2 Change of a Course**

A student can change an enrolled course within 10 working days from the commencement of the course, with the approval of the Dean (Academic Affairs), on the recommendation of the Head of the Department of the student.

### **6.3 Withdrawal from a Course**

A student can withdraw from an enrolled course at any time before the first continuous assessment test for genuine reasons, with the approval of the Dean (Academic Affairs), on the recommendation of the Head of the Department of the student.

### **7.0 BREAK OF STUDY FROM PROGRAMME**

**7.1** A student may be allowed / enforced to take a break of study for two semesters from the programme with the approval of Dean (Academic Affairs) for the following reasons:

7.1.1 Medical or other valid grounds

7.1.2 Award of 'I' grade in all the courses in a semester due to lack of attendance

7.1.3 Debarred due to any act of indiscipline

**7.2** The total duration for completion of the programme shall not exceed the prescribed maximum number of semesters (vide clause 5.1).

**7.3** A student who has availed a break of study in the current semester (odd/even) can rejoin only in the subsequent corresponding (odd/even) semester in the next academic year on approval from the Dean (Academic affairs).

**7.4** During the break of study, the student shall not be allowed to attend any regular classes or participate in any activities of the Institution. However, he / she shall be permitted to enroll for the 'I' grade courses and appear for the arrear examinations.

### **8.0 CLASS ADVISOR AND FACULTY ADVISOR**

#### **8.1 Class Advisor**

A faculty member shall be nominated by the Head of the Department as class advisor for the class throughout the period of study except first year.

The class advisor shall be responsible for maintaining the academic, curricular and co-curricular records of students of the class throughout their period of study.

However, for the first and second semester, the class advisors (first year class advisors) are nominated by the first year coordinator.

#### **8.2 Faculty Advisor**

To help the students in planning their courses of study and for general counseling, the Head of the Department of the students shall attach a maximum of 20 students to a faculty member of the department who shall

function as faculty advisor for the students throughout their period of study. Such faculty advisor shall guide the students in taking up the elective courses for registration and enrolment in every semester and also offer advice to the students on academic and related personal matters.

## **9.0 COURSE COMMITTEE**

**9.1** Each common theory course offered to more than one group of students shall have a “Course Committee” comprising all the course faculty teaching the common course with one of them nominated as a course coordinator. The nomination of the course coordinator shall be made by the Head of the Department / Dean (Academic Affairs) depending on whether all the course faculty teaching the common course belong to a single department or from several departments. The course committee shall ensure preparation of a common question paper and scheme of evaluation for the tests and semester end examination.

## **10.0 CLASS COMMITTEE**

A class committee is constituted branch wise and semester wise by the Head of the Department / Dean of the School shall normally comprise of faculty members handling the classes, student representatives and a senior faculty member not handling the courses as chairman.

**10.1** The composition of class committees for first and second semester is as follows:

- i) The first year coordinator shall be the chairman of the class committee
- ii) Faculty members of all individual courses of first / second semester
- iii) Six student representatives (male and female) of each class nominated by the first year coordinator
- iv) The class advisor and faculty advisors of the class

**10.2** The composition of the class committee for each branch from 3<sup>rd</sup> to 8<sup>th</sup> semester is as follows:

- i) One senior faculty member preferably not handling courses for the concerned semester appointed as chairman by the Head of the Department
- ii) All the faculty members handling courses of the semester
- iii) Six student representatives (male and female) of each class nominated by the Head of the Department in consultation with the relevant faculty advisors
- iv) All faculty advisors and the class advisors
- v) Head of the Department

**10.3** The class committee shall meet at least three times during the semester. The first meeting shall be held within two weeks from the date of commencement of classes, in which the components of continuous assessment for various courses and the weightages for each component of assessment shall be decided for the first and second assessment. The second meeting shall be held within a week after the date of first assessment report, to review the students' performance and for follow up action.

**10.4** During these two meetings, the student members shall meaningfully interact and express opinions and suggestions to improve the effectiveness of the teaching-learning process, curriculum and syllabi, etc.

**10.5** The third meeting of the class committee, excluding the student members, shall meet after the semester end examinations to analyse the performance of the students in all the components of assessments and decide their grades in each course. The grades for a common course shall be decided by the concerned course committee and shall be presented to the class committee(s) by the course faculty concerned.

## **11.0 CREDIT LIMIT FOR ENROLLMENT & MOVEMENT TO HIGHER SEMESTER**

**11.1** A student can enroll for a maximum of 32 credits during a semester including Redo / Predo courses.

**11.2** The minimum credits earned by the student to move to 7<sup>th</sup> semester shall not be less than 60 credits (40 credits for lateral entry students).

## **12.0 ASSESSMENT PROCEDURE AND PERCENTAGE WEIGHTAGE OF MARKS**

**12.1** Every theory course shall have a total of three assessments during a semester as given below:

<b>Assessments</b>	<b>Course Coverage in Weeks</b>	<b>Duration</b>	<b>Weightage of Marks</b>
<b>Assessment 1</b>	1 to 6	1.5 hours	25%
<b>Assessment 2</b>	7 to 12	1.5 hours	25%
<b>Semester End Examination</b>	Full course	3 hours	50%

### **12.2 Theory Course**

Appearing for semester end theory examination for each course is mandatory and a student shall secure a minimum of 40% marks in each course in

semester end examination for the successful completion of the course.

### **12.3 Laboratory Course**

Every practical course shall have 60% weightage for continuous assessments and 40% for semester end examination. However, a student shall have secured a minimum of 50% marks in the semester end practical examination for the award of pass grade.

### **12.4 Laboratory Integrated Theory Courses**

For laboratory integrated theory courses, the theory and practical components shall be assessed separately for 100 marks each and consolidated by assigning a weightage of 75% for theory component and 25% for practical component. Grading shall be done for this consolidated mark. Assessment of theory components shall have a total of three assessments with two continuous assessments carrying 25% weightage each and semester end examination carrying 50% weightage. The student shall secure a separate minimum of 40% in the semester end theory examination. The evaluation of practical components shall be through continuous assessment.

**12.5** The components of continuous assessment for theory / practical / laboratory integrated theory courses shall be finalized in the first class committee meeting.

### **12.6 Industry Internship**

In the case of industry internship, the student shall submit a report, which shall be evaluated along with an oral examination by a committee of faculty members constituted by the Head of the Department. The student shall also submit an internship completion certificate issued by the industry / research / academic organisation. The weightage of marks for industry internship report and viva voce examination shall be 60% and 40% respectively.

### **12.7 Project Work**

In the case of project work, a committee of faculty members constituted by the Head of the Department / Dean of the School will carry out three periodic reviews. Based on the project report submitted by the students, an oral examination (viva voce) shall be conducted as semester end examination by an external examiner approved by the Controller of Examinations. The weightage for periodic reviews shall be 50%. Of the remaining 50%, 20% shall be for the project report and 30% for the viva voce examination.

**12.8** Assessment of seminars and comprehension shall be carried out by a committee of faculty members constituted by the Head of the Department.

**12.9** For the first attempt of the arrear theory examination, the internal assessment marks scored for a course during first appearance shall be used for grading

along with the marks scored in the arrear examination. From the subsequent appearance onwards, full weightage shall be assigned to the marks scored in the semester end examination and the internal assessment marks secured during the course of study shall become invalid.

In case of laboratory integrated theory courses, after one regular and one arrear appearance, the internal mark of theory component is invalid and full weightage shall be assigned to the marks scored in the semester end examination for theory component. There shall be no arrear or improvement examination for lab components.

### **13.0 SUBSTITUTE EXAMINATIONS**

**13.1** A student who is absent, for genuine reasons, may be permitted to write a substitute examination for any one of the two continuous assessment tests of a course by paying the prescribed substitute examination fee. However, permission to take up a substitute examination will be given under exceptional circumstances, such as accidents, admission to a hospital due to illness, etc. by a committee constituted by the Head of the Department / Dean of the School for that purpose. There is no substitute examination for semester end examinations.

**13.2** A student shall apply for a substitute exam in the prescribed form to the Head of the Department / Dean of the School within a week from the date of assessment test. However, the substitute examination will be conducted only after the last instructional day of the semester.

### **14.0 ATTENDANCE REQUIREMENT AND SEMESTER / COURSE REPETITION**

**14.1** A student shall earn 100% attendance in the contact periods of every course, subject to a maximum relaxation of 25% to become eligible to appear for the semester end examination in that course, failing which the student shall be awarded "I" grade in that course.

**14.2** The faculty member of each course shall cumulate the attendance details for the semester and furnish the names of the students who have not earned the required attendance in the concerned course to the class advisor. The class advisor shall consolidate and furnish the list of students who have earned less than 75% attendance, in various courses, to the Dean (Academic Affairs) through the Head of the Department / Dean of the School. Thereupon, the Dean (Academic Affairs) shall officially notify the names of such students prevented from writing the semester end examination in each course.

- 14.3** If a student secures attendance between 65% and less than 75% in any course in a semester, due to medical reasons (hospitalization / accident / specific illness) or due to participation in the institution approved events, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the semester end examination of that course. In all such cases, the students shall submit the required documents immediately after joining the classes to the class advisor, which shall be approved by the Head of the Department / Dean of the School. The Vice Chancellor, based on the recommendation of the Dean (Academic Affairs) may approve the condonation of attendance.
- 14.4** A student who has obtained an “I” grade in all the courses in a semester is not permitted to move to the next higher semester. Such students shall repeat all the courses of the semester in the subsequent academic year.
- 14.5** The student awarded “I” grade, shall enroll and repeat the course when it is offered next. In case of “I” grade in an elective course either the same elective course may be repeated or a new elective course may be taken with the approval of the Head of the Department / Dean of the School.
- 14.6** A student who is awarded “U” grade in a course shall have the option to either write the semester end arrear examination at the end of the subsequent semesters, or to redo the course when the course is offered by the department. Marks scored in the continuous assessment in the redo course shall be considered for grading along with the marks scored in the semester end (redo) examination. If any student obtains “U” grade in the redo course, the marks scored in the continuous assessment test (redo) for that course shall be considered as internal mark for further appearance of arrear examination.
- 14.7** If a student with “U” grade, who prefers to redo any particular course, fails to earn the minimum 75% attendance while doing that course, then he / she is not permitted to write the semester end examination and his / her earlier “U” grade and continuous assessment marks shall continue.

## **15.0 REDO COURSES**

- 15.1** A student can register for a maximum of three redo courses per semester without affecting the regular semester classes, whenever such courses are offered by the concerned department, based on the availability of faculty members and subject to a specified minimum number of students registering for each of such courses.
- 15.2** The number of contact hours and the assessment procedure for any redo

course shall be the same as regular courses, except there is no provision for any substitute examination and withdrawal from a redo course.

## 16.0 PASSING AND DECLARATION OF RESULTS AND GRADE SHEET

**16.1** All assessments of a course shall be made on absolute marks basis. The class committee without the student members shall meet to analyse the performance of students in all assessments of a course and award letter grades following the relative grading system. The letter grades and the corresponding grade points are as follows:

Letter Grade	Grade Points
S	10
A	9
B	8
C	7
D	6
E	5
U	0
W	-
I	-

**"W"** - denotes withdrawal from the course

**"I"** - denotes inadequate attendance in the course and prevention from appearance of semester end examination

**"U"** - denotes unsuccessful performance in the course.

**16.2** A student who earns a minimum of five grade points ('E' grade) in a course is declared to have successfully completed the course. Such a course cannot be repeated by the student for improvement of grade.

**16.3** Upon awarding grades, the results shall be endorsed by the chairman of the class committee and Head of the Department / Dean of the School. The Controller of Examinations shall further approve and declare the results.

**16.4** Within one week from the date of declaration of result, a student can apply for revaluation of his / her semester end theory examination answer scripts of one or more courses, on payment of prescribed fee, through proper application to the Controller of Examinations. Subsequently, the Head of the Department / Dean of the School offered the course shall constitute a revaluation committee consisting of chairman of the class committee as convener, the faculty member of the course and a senior faculty member having expertise in that course as members. The committee shall meet within a week to revalue the answer

scripts and submit its report to the Controller of Examinations for consideration and decision.

- 16.5** After results are declared, grade sheets shall be issued to each student, which contains the following details: a) list of courses enrolled during the semester including redo courses / arrear courses, if any; b) grades scored; c) Grade Point Average (GPA) for the semester and d) Cumulative Grade Point Average (CGPA) of all courses enrolled from the first semester onwards.

GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

If  $C_i$  is the number of credits assigned for the  $i^{\text{th}}$  course and  $GP_i$  is the Grade Point in the  $i^{\text{th}}$  course,

$$GPA = \frac{\sum_{i=1}^n (C_i)(GP_i)}{\sum_{i=1}^n C_i}$$

Where  $n$  = number of courses

The Cumulative Grade Point Average (CGPA) is calculated in a similar manner, considering all the courses enrolled from first semester.

"I" and "W" grades are excluded for calculating GPA.

"U", "I" and "W" grades are excluded for calculating CGPA.

The formula for the conversion of CGPA to equivalent percentage of marks shall be as follows:

Percentage equivalent of marks = CGPA X 10

- 16.6** After successful completion of the programme, the degree shall be awarded to the students with the following classifications based on CGPA.

Classification	CGPA
First Class with Distinction	8.50 and above and passing all the courses in first appearance and completing the programme within the prescribed period of 8 semesters for all students (except lateral entry students) and 6 semesters for lateral entry students
First Class	6.50 and above and completing the programme within a maximum of 10 semesters for all students (except lateral entry students) and 8 semesters for lateral entry students
Second Class	Others

**16.6.1 Eligibility for First Class with Distinction**

- A student should not have obtained 'U' or 'I' grade in any course during his/her study
- A student should have completed the UG programme within the minimum prescribed period of study (except clause 7.1.1)

**16.6.2 Eligibility for First Class**

- A student should have passed the examination in all the courses not more than two semesters beyond the minimum prescribed period of study (except clause 7.1.1)

**16.6.3** The students who do not satisfy clause 16.6.1 and clause 16.6.2 shall be classified as second class.

**16.6.4** The CGPA shall be rounded to two decimal places for the purpose of classification. The CGPA shall be considered up to three decimal places for the purpose of comparison of performance of students and ranking.

**17.0 SUPPLEMENTARY EXAMINATION**

Final year students and passed out students can apply for supplementary examination for a maximum of three courses thus providing an opportunity to complete their degree programme. Likewise, students with less credits in VI semester can also apply for supplementary examination for a maximum of three courses to enable them to earn minimum credits to move to higher semester. The students can apply for supplementary examination within three weeks of the declaration of results in the even semester.

**18.0 DISCIPLINE**

**18.1** Every student is expected to observe discipline and decorum both inside and outside the campus and not to indulge in any activity which tends to affect the reputation of the Institution.

**18.2** Any act of indiscipline of a student, reported to the Dean (Student Affairs), through the Head of the Department / Dean of the School concerned shall be referred to a Discipline and Welfare Committee constituted by the Registrar for taking appropriate action. This committee shall also address the grievances related to the conduct of online classes.

**19.0 ELIGIBILITY FOR THE AWARD OF DEGREE**

**19.1** A student shall be declared to be eligible for the award of B.Tech. degree provided the student has:

- i) Successfully earned the required number of total credits as specified in the curriculum of the programme of study within a maximum period of 14 semesters (12 semesters for lateral entry) from the date of admission, including break of study.
- ii) Successfully completed the requirements of the enrolled professional development activity.
- iii) No dues to the Institution, Library, Hostel, etc.
- iv) No disciplinary action pending against him/her.

**19.2** The award of the degree must have been approved by the Institution.

## 20.0 MINOR DEGREE PROGRAMMES OFFERED FOR STUDENTS

**20.1** The students admitted in the following B.Tech. programmes can graduate with a minor degree, which is optional, along with a major degree:

• Civil Engineering	• Mechanical Engineering
• Electronics and Communication Engineering	• Electrical and Electronics Engineering
• Automobile Engineering	• Aeronautical Engineering
• Polymer Engineering	• Biotechnology Engineering
• Electronics and Instrumentation Engineering	• Computer Science and Engineering
• Information Technology	• Artificial Intelligence and Data Science
• Computer Science and Engineering (IoT)	• Computer Science and Engineering(Cyber Security)

**20.2** The eligibility for choosing the minor degree is given as below:

Sl. No.	Minor Degree	Eligible Major Degree Programmes (from other Departments)
1.	Artificial Intelligence and Machine Learning	Mechanical Engineering Aeronautical Engineering
2.	Block Chain	Polymer Engineering
3.	Cyber Security	Automobile Engineering
4.	Data Science	Civil Engineering
5.	Internet of Things (IoT)	Biotechnology Electrical and Electronics Engineering Electronics and Instrumentation Engineering
6.	Virtual and Augmented Reality	Mechanical Engineering Aeronautical Engineering Polymer Engineering Automobile Engineering

		Civil Engineering Biotechnology Electrical and Electronics Engineering Electronics and Instrumentation Engineering Electronics and Communication Engineering
7.	Sensor Technology	Mechanical Engineering Aeronautical Engineering Polymer Engineering Automobile Engineering Civil Engineering Biotechnology Electrical and Electronics Engineering
8.	Robotics	Artificial Intelligence and Data Science Computer Science and Engineering (Cyber Security) Computer Science and Engineering (IoT) Computer Science and Engineering Information and Technology Civil Engineering Biotechnology Electrical and Electronics Engineering Electronics and Instrumentation Engineering
9.	3D Printing	Artificial Intelligence and Data Science Computer Science and Engineering (Cyber Security) Computer Science and Engineering (IoT) Computer Science and Engineering Information and Technology Biotechnology Electrical and Electronics Engineering Electronics and Instrumentation Engineering Electronics and Communication Engineering
10.	Electric Vehicles	Artificial Intelligence and Data Science Computer Science and Engineering (Cyber Security) Computer Science and Engineering (IoT) Computer Science and Engineering Information and Technology Civil Engineering Biotechnology Electronics and Communication Engineering
11.	Industrial Automation	Artificial Intelligence and Data Science Computer Science Engineering (Cyber

		Security) Computer Science and Engineering (IoT) Computer Science and Engineering Information and Technology Mechanical Engineering Aeronautical Engineering Polymer Engineering Automobile Engineering Civil Engineering Biotechnology Electronics and Communication Engineering
12.	GIS and Remote Sensing	Artificial Intelligence and Data Science Computer Science and Engineering (Cyber Security) Computer Science and Engineering (IoT) Computer Science and Engineering Information and Technology Mechanical Engineering Aeronautical Engineering Polymer Engineering Automobile Engineering Biotechnology Electrical and Electronics Engineering Electronics and Instrumentation Engineering Electronics and Communication Engineering
13.	Computational Biology	Artificial Intelligence and Data Science Computer Science and Engineering (Cyber Security) Computer Science and Engineering (IoT) Computer Science and Engineering Information and Technology Mechanical Engineering Aeronautical Engineering Polymer Engineering Automobile Engineering Civil Engineering Electrical and Electronics Engineering Electronics and Instrumentation Engineering Electronics and Communication Engineering

**20.3** A student shall earn an additional 18 to 20 credits for the award of a minor degree.

**20.4** A student shall be awarded a minor degree only when he / she completes the requirements for the award of major degree stipulated in the respective programme.

**21.0 POWER TO MODIFY**

Notwithstanding all that has been stated above, the Academic Council has the right to modify the above regulations from time to time.

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**REGULATIONS 2021**

**CURRICULUM AND SYLLABI (I - IV Semesters)**

**(Amendments updated upto February 2022)**

**B.TECH. ELECTRICAL AND ELECTRONICS ENGINEERING**

**B.S. ABDUR RAHMAN CRESCENT INSTITUTE OF SCIENCE  
AND TECHNOLOGY  
B.TECH. ELECTRICAL AND ELECTRONICS ENGINEERING**

**CURRICULUM FRAME WORK, REGULATIONS 2021**

*(Choice Based Credit System)*

**SEMESTER I**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	BSC	PHD 1182	Engineering Physics *	3	0	2	4
2.	BSC	CHD 1182	Chemistry for Electrical and Electronic Engineering *	3	0	2	4
3.	BSC	MAD 1181	Algebra and Differential Calculus	3	1	0	4
4.	ESC	GED 1101	Engineering Graphics *	2	0	2	3
5.	ESC	GED 1102	Engineering Design	2	0	0	2
6.	ESC	GED 1103	Manufacturing Practices Laboratory	0	0	2	1
7.	ESC	GED 1104	Programming for Problem Solving **	1	0	2	2
<b>Credits</b>							<b>20#</b>

**SEMESTER II**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	HSC	END 1181	English for Engineers	3	0	0	3
2.	BSC		Physics Elective	2	0	0	2
3.	BSC	MAD 1283	Partial Differential Equations and Transforms	3	1	0	4
4.	ESC	GED 1201	Engineering Mechanics	3	1	0	4
5.	ESC	EED 1201	Electric and Magnetic Circuits	3	0	0	3
6.	PCC	EED 1202	Signals and Systems	3	0	0	3
7.	PCC	EED 1203	Electric Circuits Laboratory	0	0	2	1
8.	MC	GED 1206	Environmental Sciences	2	0	0	2
<b>Credits</b>							<b>22</b>

**SEMESTER III**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	HSC		Humanities Elective I	3	0	0	3
2.	BSC		Mathematics Elective	3	1	0	4
3.	PCC	EED 2101	Electronic Devices	3	0	0	3
4.	PCC	EED 2102	Electro Magnetic Theory	2	1	0	3
5.	PCC	EED 2103	Electromechanical Energy Conversion	3	0	0	3
6.	PCC	EED 2104	Transmission and Distribution	3	0	0	3
7.	PCC	EED 2105	Electronic Devices Laboratory	0	0	2	1
8.	PCC	EED 2106	Electromechanical Energy Conversion Laboratory	0	0	2	1
9.	HSC	GED 2101	Essential Skills and Aptitude for Engineers	0	0	2	1
<b>Credits</b>							<b>22</b>

**SEMESTER IV**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PCC	EED 2201	AC Machines	3	0	0	3
2.	PCC	EED 2202	Digital Electronics	3	0	0	3
3.	PCC	EED 2203	Electrical Measurement and Instrumentation	3	0	0	3
4.	PCC	EED 2204	Power System Protection	3	0	0	3
5.	PCC	EED 2205	Python for Electrical Engineers	2	0	2	3
6.	PCC	EED 2206	AC Machines Laboratory	0	0	2	1
7.	PCC	EED 2207	Digital Electronics Laboratory	0	0	2	1
8.	PCC	EED 2208	Electrical Measurement and Instrumentation Laboratory	0	0	2	1
9.	PEC		Professional Elective Course I	3	0	0	3
10.	HSC	GED 2201	Workplace Skills and Aptitude for Engineers	0	0	2	1
11.	MC	GED 2202	Indian Constitution and Human Rights	2	0	0	0
<b>Credits</b>							<b>22</b>

**SEMESTER V**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PCC	EED 3101	Embedded System	3	0	0	3
2.	PCC	EED 3102	Power System Analysis	3	0	0	3
3.	PCC	EED 3103	Power Electronics	3	0	0	3
4.	PCC	EED 3104	VLSI *	2	0	2	3
5.	PCC	EED 3105	Embedded System Laboratory	0	0	2	1
6.	PCC	EED 3106	Power System Simulation Laboratory	0	0	2	1
7.	PCC	EED 3107	Power Electronics Laboratory	0	0	0	1
8.	PEC		Professional Elective – II	3	0	0	3
9.	PEC		Professional Elective - III	3	0	0	3
10.	HSC	GED 3101	Communication Skills for Career Success	0	0	2	1
11.	PROJ	EED 3108	Internship I <sup>##</sup>	0	0	0	1
<b>Credits</b>							<b>23</b>

**SEMESTER VI**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	HSC	MSD 3281	Entrepreneurship	3	0	0	3
2.	HSC		Humanities Elective II	2	0	0	2
3.	HSC	GED 3201	Reasoning and Aptitude for Engineers	0	0	2	1
4.	OEC		Open Elective I	3	0	0	3
5.	PCC	EED 3201	Control Systems	3	0	0	3
6.	PCC	EED 3202	Electric Vehicle Technologies	3	0	0	3
7.	PCC	EED 3203	Control Systems Laboratory	0	0	2	1
8.	PEC		Professional Elective – IV	3	0	0	3
9.	PCC	EED 3204	Self Learning	0	1	0	1
10.	PCC	EED 3205	Comprehension	1	0	0	1
<b>Credits</b>							<b>21</b>

**SEMESTER VII**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	OEC		Open Elective II	3	0	0	3
2.	OEC		Open Elective III	3	0	0	3
3.	PCC	EED 4101	PLC SCADA and DCS *	3	0	2	4
4.	PEC		Professional Elective Course V	3	0	0	3
5.	PEC		Professional Elective Course VI	3	0	0	3
6.	PEC		Professional Elective Course VII	3	0	0	3
7.	PEC		Professional Elective Course VIII	3	0	0	3
8.	PROJ	EED 4102	Internship II ###				1
9.	HSC	GED 4101	Employability Skills \$	0	0	2	1
<b>Credits</b>							<b>23</b>

**SEMESTER VIII**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PROJ	EED 4201	Project Work				9
<b>Credits</b>							<b>9</b>

**Overall Total Credits – 162**

\* Laboratory Integrated Theory course

\*\* Laboratory Course

# Three Week Orientation Programme – Mandatory Non-Credit Course

## 15 days of Industrial training during the summer vacation of second year. The credit will be awarded in the 5<sup>th</sup> Semester.### 15 days of Industrial training during the summer vacation of third year. The credit will be awarded in the 7<sup>th</sup> Semester.

\$ Not a Mandatory Course - The student will take up this course during the Summer Holidays of III year as a comprehension of Soft Skills courses offered from semester III to VI. Upon successful completion, the course will be mentioned in grade sheet of VII semester.

**PROFESSIONAL ELECTIVE COURSES**

The professional elective courses will be offered in a semester only after satisfying the prerequisites.

**POWER SYSTEM ENGINEERING**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PEC	EEDX 01	Distribution System Engineering	3	0	0	3
2.	PEC	EEDX 02	Electric Energy Generation, Utilization and Conservation	3	0	0	3
3.	PEC	EEDX 03	Energy Conservation and Audit	3	0	0	3
4.	PEC	EEDX 04	Flexible AC Transmission Systems	3	0	0	3
5.	PEC	EEDX 05	IEEE and IEC standards	3	0	0	3
6.	PEC	EEDX 06	Industrial Power System Analysis and Design	3	0	0	3
7.	PEC	EEDX 07	Power System Operation and Control	3	0	0	3
8.	PEC	EEDX 08	Power System Transients	3	0	0	3
9.	PEC	EEDX 09	Reactive Power Control in Power Systems	3	0	0	3
10.	PEC	EEDX 10	Restructured Power System	3	0	0	3
11.	PEC	EEDX 11	High Voltage Engineering	3	0	0	3
12.	PEC	EEDX 12	Network Analysis and Synthesis	3	0	0	3

**POWER ELECTRONICS & DRIVES**

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PEC	EEDX 21	Converters, Applications and Design	3	0	0	3
2.	PEC	EEDX 22	Electric Power Quality	3	0	0	3
3.	PEC	EEDX 23	Electrical Machine Design	3	0	0	3
4.	PEC	EEDX 24	Embedded Control of Electric Drives	3	0	0	3
5.	PEC	EEDX 25	HVDC Transmission	3	0	0	3

6.	PEC	EEDX 26	Power Electronics Application to Renewable Energy Systems	3	0	0	3
7.	PEC	EEDX 27	Solid state Drives	3	0	0	3
8.	PEC	EEDX 28	Special Electrical Machines	3	0	0	3
9.	PEC	EEDX 29	Wind Energy Conversion Systems	3	0	0	3

### ELECTRONICS, COMMUNICATION AND INSTRUMENTATION ENGINEERING

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PEC	ECDX 081	Communication Engineering	3	0	0	3
2.	PEC	ECDX 082	Digital Signal Processing	3	0	0	3
3.	PEC	ECDX 083	Micro Electronics	3	0	0	3
4.	PEC	ECDX 084	Computer Communication Networks	3	0	0	3
5.	PEC	EIDX 91	Advanced Control System	3	0	0	3
6.	PEC	EIDX 92	Bio Instrumentation and Signal Analysis	3	0	0	3
7.	PEC	EIDX 93	Biomedical Signal Processing	3	0	0	3
8.	PEC	EIDX 94	Industrial Instrumentation	3	0	0	3
9.	PEC	EIDX 95	Sensors for Bio-Medical Application	3	0	0	3
10.	PEC	EIDX 96	Transducers	3	0	0	3

### COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PEC	CSDX 81	Introduction to Cloud Computing	3	0	0	3
2.	PEC	CSDX 82	Computer Hardware and Interfacing	3	0	0	3
3.	PEC	CSDX 83	Computer Networks	3	0	0	3

4.	PEC	CSDX 84	Fundamentals of Data Structures	3	0	0	3
5.	PEC	CSDX 85	Java Programming	3	0	0	3

### RECENT TECHNOLOGY IN ELECTRICAL ENGINEERING

Sl. No.	Course Group	Course Code	Course Title	L	T	P	C
1.	PEC	EEDX 51	Artificial Intelligence for Electrical Engineers	3	0	0	3
2.	PEC	EEDX 52	Automotive Transmission and Communication	3	0	0	3
3.	PEC	EEDX 53	DC Micro grid	3	0	0	3
4.	PEC	EEDX 54	Energy Devices for Electric Vehicles	3	0	0	3
5.	PEC	EEDX 55	Grid Integration of Renewable Energy Systems	3	0	0	3
6.	PEC	EEDX 56	HEV / xEV Motor Drives and Controllers	3	0	0	3
7.	PEC	EEDX 57	Image and Video Processing	3	0	0	3
8.	PEC	EEDX 58	Industrial IoT	3	0	0	3
9.	PEC	EEDX 59	IoT for Electrical Engineers	3	0	0	3
10.	PEC	EEDX 60	Micro-grid Protection	3	0	0	3
11.	PEC	EEDX 61	Smart Grid	3	0	0	3
12.	PEC	EEDX 62	Solar Energy Technology	3	0	0	3
13.	PEC	EEDX 63	Machine Learning	3	0	0	3

### PHYSICS ELECTIVES – II SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	C
1	PHDX 01	Non Destructive Testing of Materials	2	0	0	2
2	PHDX 02	Materials Science for Engineering	2	0	0	2

3	PHDX 03	Biomaterials	2	0	0	2
4	PHDX 04	Optical Fibre Communication	2	0	0	2
5	PHDX 05	Semiconductor Physics for Information Technology	2	0	0	2
6	PHDX 06	Sensors and Actuators	2	0	0	2
7	PHDX 07	Fundamentals of Nanotechnology and its Applications	2	0	0	2

### MATHEMATICS ELECTIVES – III SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	C
1	MADX 01	Transforms and Partial Differential Equations	3	1	0	4
2	MADX 02	Discrete Mathematics	3	1	0	4
3	MADX 03	Probability and Statistics	3	1	0	4
4	MADX 04	Random Processes	3	1	0	4
5	MADX 05	Numerical Methods	3	1	0	4

### HUMANITIES ELECTIVES – III SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	C
1	SSDX 01	Engineering Economics and Management	3	0	0	3
2	SSDX 02	Sociology of Science and Technology	3	0	0	3
3	SSDX 03	Industrial Economics and Management	3	0	0	3
4	SSDX 04	Dynamics of Indian Social Structure	3	0	0	3

**HUMANITIES ELECTIVES – VI SEMESTER**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	SSDX 11	Economics of Sustainable Development	2	0	0	2
2	SSDX 12	Sociology of Industrial Relations.	2	0	0	2
3	SSDX 13	Professional Ethics and Human Values	2	0	0	2
4	SSDX 14	Gender, Technology and Development	2	0	0	2

**OPEN ELECTIVE COURSES FOR  
B.TECH. PROGRAMMES R 2021 - VI SEMESTER**

Sl. No.	Course Code	Course Title	L	T	P	C	Offering Department
1	GEDX 201	Application of Fluid Mechanics in Everyday Life	3	0	0	3	Aero
2	GEDX 202	Basics of Management and Organizational Behaviour	3	0	0	3	CSB
3	GEDX 203	Big Data Analytics	3	0	0	3	CA
4	GEDX 204	Biology for Engineers	3	0	0	3	SLS
5	GEDX 205	Consumer Electronics	3	0	0	3	ECE
6	GEDX 206	Creative Writing	2	1	0	3	English
7	GEDX 207	Cyber Forensics	3	0	0	3	CSE
8	GEDX 208	Cyber Security	3	0	0	3	IT
9	GEDX 209	Disaster Management	3	0	0	3	Civil
10	GEDX 210	English for Competitive Examination	2	1	0	3	English
11	GEDX 211	Enterprise Risk Management	3	0	0	3	CSB
12	GEDX 212	Fundamentals of Project Management	3	0	0	3	CSB
13	GEDX 213	Industrial Robotics	2	0	2	3	Mech.
14	GEDX 214	Internet of Things and its Applications	3	0	0	3	ECE
15	GEDX 215	Introduction to Health Care Analytics	3	0	0	3	CA
16	GEDX 216	IPR and Patent Laws	3	0	0	3	CSB
17	GEDX 217	Logistics and Supply Chain Management	3	0	0	3	CSB
18	GEDX 218	Nano Materials and Technology	2	0	2	3	Physics / Chemistry
19	GEDX 219	Numerical Computational Tools for Engineers	2	0	2	3	EIE
20	GEDX 220	Optimization Techniques	3	0	0	3	EEE
21	GEDX 221	Polymers for Emerging Technologies	3	0	0	3	Polymer
22	GEDX 222	Programming Language Principles	3	0	0	3	CSE

23	GEDX 223	Public Speaking and Rhetoric	2	1	0	3	English
24	GEDX 224	Python Programming	2	0	2	3	IT
25	GEDX 225	R Programming	3	0	0	3	CA
26	GEDX 226	Smart Sensors for Healthcare Applications	3	0	0	3	EIE
27	GEDX 227	Total Quality Management	3	0	0	3	Mech.
28	GEDX 228	Value Education	3	0	0	3	Commerce
29	GEDX 229	Waste Water Management	3	0	0	3	Civil
30	GEDX 230	Web Application Development	3	0	0	3	CA

**OPEN ELECTIVE COURSES FOR  
B.TECH. PROGRAMMES R 2021 - VII SEMESTER**

Sl. No.	Course Code	Course Title	L	T	P	C	Offering Department
1	GEDX 101	Advanced Entrepreneurship	3	0	0	3	CSB
2	GEDX 102	Artificial Intelligence and Machine Learning Applications	3	0	0	3	CSE
3	GEDX 103	Automotive Technology	3	0	0	3	Automobile
4	GEDX 104	Behavioural Psychology	3	0	0	3	SSSH
5	GEDX 105	Building Repair Solutions	3	0	0	3	Civil
6	GEDX 106	Cloud Services and Management	3	0	0	3	CA
7	GEDX 107	Cost Management for Engineers	3	0	0	3	Commerce
8	GEDX 108	Cyber Law and Ethics	3	0	0	3	CSL
9	GEDX 109	Data Analytics and Visualization	3	0	0	3	CA
10	GEDX 110	Deep Learning Essentials	3	0	0	3	CSE
11	GEDX 111	Drone Technologies	2	0	2	3	Aero
12	GEDX 112	Electric Vehicle	3	0	0	3	EEE
13	GEDX 113	Emerging Technologies in Mobile Networks	3	0	0	3	ECE
14	GEDX 114	Fundamentals of Data Science and Machine	3	0	0	3	IT

Learning

15	GEDX 115	Genetic Engineering	3	0	0	3	SLS
16	GEDX 116	Green Design and Sustainability	3	0	0	3	Civil
17	GEDX 117	Image Processing and its Applications	3	0	0	3	ECE
18	GEDX 118	Industrial Automation and Control	3	0	0	3	EIE
19	GEDX 119	Industrial Safety	3	0	0	3	Mech.
20	GEDX 120	Industry 4.0	3	0	0	3	Mech.
21	GEDX 121	Introduction to Artificial Intelligence	3	0	0	3	IT
22	GEDX 122	Introduction to Artificial Intelligence and Evolutionary Computing	3	0	0	3	EEE
23	GEDX 123	Motor Vehicle Act and Loss Assessment	3	0	0	3	Automobile
24	GEDX 124	National Service Scheme	3	0	0	3	SSSH
25	GEDX 125	National Cadet Corps	3	0	0	3	SSSH
26	GEDX 126	Personal Finance and Investment	3	0	0	3	Commerce
27	GEDX 127	Soft Computing Techniques	3	0	0	3	CSE
28	GEDX 128	Value Analysis and Engineering	3	0	0	3	Mech.
29	GEDX 129	Vehicle Maintenance	3	0	0	3	Automobile



B.S. Abdur Rahman  
**Crescent**  
Institute of Science & Technology  
Deemed to be University u/s 3 of the UGC Act, 1956

## *Regulations 2021*

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*B.A. / BBA / B.Com. / BCA / B.Sc.*

*Degree Programmes*

**REGULATIONS - 2021**  
**B.A. / BBA/ B.Com. / BCA / B.Sc. DEGREE PROGRAMMES**  
*(Under Choice Based Credit System)*

**1.0 PRELIMINARY DEFINITIONS & NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- i) **"Programme"** means B.A. / BBA / BCA / B.Com. / B.Sc. Degree Programmes.
- ii) **"Course"** means theory / practical / laboratory integrated theory / seminar / internship / project and any other subject that is normally studied in a semester like English, Mathematics, Environmental Science, etc.,
- iii) **"Institution"** means B.S. Abdur Rahman Crescent Institute of Science and Technology.
- iv) **"Academic Council"** means the Academic Council, which is the apex body on all academic matters of this Institute.
- v) **"Dean (Academic Affairs)"** means the Dean (Academic Affairs) of the Institution who is responsible for the implementation of relevant rules and regulations for all the academic activities.
- vi) **"Dean (Student Affairs)"** means the Dean (Students Affairs) of of the Institution who is responsible for activities related to student welfare and discipline in the campus.
- vii) **"Controller of Examinations"** means the Controller of Examination of the Institution who is responsible for the conduct of examinations and declaration of results.
- viii) **"Dean of the School"** means the Dean of the School of the department concerned.
- ix) **"Head of the Department"** means the Head of the Department concerned.

**2.0 PROGRAMMES OFFERED AND ELIGIBILITY CRITERIA FOR ADMISSION**

**2.1 UG Programmes Offered**

Degree	Mode of Study
B.A.	FullTime
BBA	
B.Com.	
BCA	
B.Sc.	

## 2.2 Eligibility Criteria

Students for admission to the first semester of the undergraduate degree programme must have passed the Higher Secondary Examination of the 10 +2 curriculum (Academic stream) or any other examination of any authority accepted by this Institution as equivalent thereto.

S.No.	Programme	Eligibility Criteria
1	BCA	10+2 (Higher Secondary) with Mathematics or equivalent subject
2	B.Sc. Computer Science	10+2 (Higher Secondary) with Mathematics or equivalent subject
3	B.Sc. Biotechnology	10+2 (Higher Secondary) with Chemistry and Biology as subjects
4	BBA (Financial Services)	10+2 (Higher Secondary)
5	BBA (General)	
6	B.Com. (General)	10+2 (Higher Secondary) with Mathematics, Physics and Chemistry / Physics, Chemistry, Botany and Zoology / Commerce / Statistics as subjects.
7	B.Com (Accounts and Finance)	
8	B.Com. (Hons.)	
9	B.A. English (Hons.)	10 +2 (Higher Secondary)
10	B.A. Islamic Studies	
11	B.A. Public Policy	

**2.4** The eligibility criteria such as marks, number of attempts and physical fitness shall be as prescribed by the Institution in adherence to the guidelines of regulatory / statutory authorities from time to time.

## 3.0 STREAMS / SPECIALISATION OF STUDY

The following are the details of specialization / streams offered in various programmes:

S.No.	Program	Streams / Specialisation of Study
1.	BCA	i. Cloud Technology and Information Security ii. Mobile Applications and Information Security iii. Data Science iv. Multimedia and Web Application Development

2.	<b>B.Sc.</b>	i. Computer Science ii. Biotechnology
3.	<b>BBA</b>	i. General ii. Financial Services
4.	<b>B.Com</b>	i. General ii. Honours iii. Accounts and Finance
5.	<b>B.A.</b>	i. English (Honours) ii. Islamic Studies iii. Public Policy

#### 4.0 STRUCTURE OF THE PROGRAMME

4.1 The curriculum of the UG programmes consists of the following components:

- Core Courses (CC)
- Allied Courses (AC)
- Ability Enhancement Courses (AEC)
- Skill Enhancement Courses (SEC)
- Elective Courses (EC)
- Laboratory Courses (LC)
- Laboratory Integrated Theory Courses (LITC)
- Value added courses
- Mandatory courses (MC)
- Project - PROJ (Project work, seminar, and internship in industry or at appropriate workplace)

##### 4.1.1 Personality and Character Development

All students shall enroll, on admission, in any of the following personality and character development programmes:

- National Cadet Corps (NCC)
- National Service Scheme (NSS)
- National Sports Organization (NSO)
- Youth Red Cross (YRC)
- Rotaract
- Crescent Indian Society Training Development (ISTD – C)
- Crescent Creative Strokes
- Crescent Technocrats Club

The training activities / events / camp shall normally be organized during the

weekends / vacation period.

#### **4.1.2 Online Courses for Credit Transfer**

Students are permitted to undergo department approved online courses under SWAYAM up to 10% of credits of courses in a semester excluding project semester (if any) with the recommendation of the Head of the Department / Dean of School and with the prior approval of Dean Academic Affairs during his/ her period of study. The credits earned through online courses ratified by the respective Board of Studies shall be transferred following the due approval procedures. The online courses can be considered in lieu of core courses and elective courses.

#### **4.1.3 Value Added Courses**

The students are permitted to pursue department approved online courses (excluding courses registered for credit transfer) or courses offered / approved by the department as value added courses.

The details of the value added course viz., syllabus, schedule of classes and the course faculty shall be sent to Dean, Academic Affairs for approval. The students may also undergo the valued added course offered by other departments with the consent of the Head of the Department offering the course.

These value added courses shall be specified in the consolidated mark sheet as additional courses pursued by the student over and above the curriculum during the period of study.

#### **4.1.4 Industry Internship**

The students shall undergo training for a period as specified in the curriculum during the summer vacation in any industry relevant to the field study.

The students are also permitted to undergo internship at a research organization / eminent academic institution for the period prescribed in the curriculum during the summer vacation, in lieu of Industrial training.

In any case, the student shall obtain necessary approval from the Head of the Department / Dean of School and the training has to be taken up at a stretch.

#### **4.1.5 Industrial Visit**

The student shall undergo at least one industrial visit every year. The Heads of Departments / Deans of Schools shall ensure the same.

#### **4.2** Each course is normally assigned certain number of credits:

- one credit per lecture period per week
- one credit per tutorial period per week
- one credit for two to three periods and two credits for four periods of

laboratory or practical sessions per week

- one credit for two periods of seminar / project work per week
- one credit for two weeks of industrial training or 80 hours per semester.

**4.3** Each semester curriculum shall normally have a blend of lecture courses, laboratory courses, laboratory integrated theory courses, etc.

**4.4** For successful completion of the programme, a student must earn a minimum total credit specified in the curriculum of the respective programme of study.

**4.5** The medium of instruction, examinations and project report shall be English, except B.A. Islamic Studies (Arabic medium) and for courses in languages other than English.

## **5.0 DURATION OF THE PROGRAMME**

**5.1** A student is expected to complete the programme in 6 semesters but in any case not more than 10 continuous semesters reckoned from the date of first admission.

**5.2** Each semester shall consist of a minimum of 90 working days including the days of examinations.

**5.3** The maximum duration for completion of the programme as mentioned in clause 5.1 shall also include period of break of study vide clause 7.1 so that the student may be eligible for the award of the degree.

## **6.0 REGISTRATION AND ENROLLMENT**

**6.1** The students of first semester shall register and enroll for courses at the time of admission by paying the prescribed fees. For the subsequent semesters registration for the courses shall be done by the student one week before the last working day of the previous semester.

**6.2** A student can enroll for a maximum of 32 credits during a semester including Redo / Predo Courses.

### **6.3 Change of Course**

A student can change an enrolled course within 10 working days from the commencement of the course, with the approval of the Dean (Academic Affairs), on the recommendation of the Head of the Department / Dean of School of the student.

### **6.4 Withdrawal from a Course**

A student can withdraw from an enrolled course at any time before the first continuous assessment test for genuine reasons, with the approval of the Dean (Academic Affairs), on the recommendation of the Head of the

Department / Dean of School of the student.

## **7.0 BREAK OF STUDY FROM PROGRAMME**

**7.1** A student may be allowed / enforced to take a break of study for two semesters from the programme with the approval of Dean (Academic Affairs) for the following reasons:

7.1.1 Medical or other valid grounds

7.1.2 Award of 'I' grade in all the courses in a semester due to lack of attendance

7.1.3 Debarred due to any act of indiscipline.

**7.2** The total duration for completion of the programme shall not exceed the prescribed maximum number of semesters (vide clause 5.1).

**7.3** A student who has availed break of study in the current semester (odd/even) can rejoin only in the subsequent corresponding (odd/even) semester in the next academic year on approval from Dean, Academic affairs.

**7.4** During the break of study, the student shall not be allowed to attend any regular classes or participate in any activities of the institution. However he / she shall be permitted to enroll for the 'I' grade courses and appear for the arrear examinations.

## **8.0 CLASS ADVISOR AND FACULTY ADVISOR**

### **8.1 Class Advisor**

A faculty member will be nominated by the Head of the Department / Dean of School as class advisor for the class throughout the period of study.

The class advisor shall be responsible for maintaining the academic, curricular and co-curricular records of students of the class.

### **8.2 Faculty Advisor**

To help the students in planning their courses of study and for general counseling, the Head of the Department / Dean of School of the students will attach a maximum of 20 students to a faculty member of the department who shall function as faculty advisor for the students throughout their period of study. Such faculty advisors shall guide the students in taking up the elective courses for registration and enrolment in every semester and also offer advice to the students on academic and related personal matters.

## **9.0 COURSE COMMITTEE**

**9.1** Each common theory course offered to more than one group of students shall

have a “Course Committee” comprising all the course faculty teaching the common course with one of them nominated as course coordinator. The nomination of the course coordinator shall be made by the Head of the Department / Dean (Academic Affairs) depending on whether all the course faculty teaching the common course belong to a single department or from several departments. The course committee shall ensure preparation of a common question paper and scheme of evaluation for the tests and semester end examination.

## **10.0 CLASS COMMITTEE**

A class committee comprising faculty members handling the courses, student representatives and a senior faculty member not handling the courses as chairman will be constituted semester-wise by the Head of the Department.

**10.1** The composition of the class committee will be as follows:

- One senior faculty member preferably not handling courses for the concerned semester, appointed as chairman by the Head of the Department.
- All the faculty members handling courses of the semester.
- Six student representatives (male and female) of each class nominated by the Head of the Department in consultation with the relevant faculty advisors.
- All faculty advisors and the class advisors
- Head of the Department - Ex-Officio Member

**10.2** The class committee shall meet at least three times during the semester. The first meeting shall be held within two weeks from the date of commencement of classes, in which the components of continuous assessment for various courses and the weightages for each component of assessment shall be decided for the first and second assessment. The second meeting shall be held within a week after the date of first assessment report, to review the students' performance and for follow up action.

**10.3** During these two meetings the student members shall meaningfully interact and express opinions and suggestions to improve the effectiveness of the teaching-learning process, curriculum, and syllabi, etc.

**10.4** The third meeting of the class committee, excluding the student members, shall meet after the semester end examinations to analyse the performance of the students in all the components of assessments and decide their grades in each course. The grades for a common course shall be decided by the

concerned course committee and shall be presented to the class committee(s) by the course faculty concerned.

## **11.0 ASSESSMENT PROCEDURE AND PERCENTAGE WEIGHTAGE OF MARKS**

**11.1** Every theory course shall normally have a total of three assessments during a semester as given below:

<b>Assessments</b>	<b>Course Coverage in Weeks</b>	<b>Duration</b>	<b>Weightage of Marks</b>
<b>Assessment 1</b>	1 to 6	1.5 hours	25%
<b>Assessment 2</b>	7 to 12	1.5 hours	25%
<b>Semester End Examination</b>	Full course	3 hours	50%

### **11.2 Theory Course**

Appearing for semester end theory examination for each course is mandatory and a student shall secure a minimum of 40% marks in each course in semester end examination for the successful completion of the course.

### **11.3 Laboratory Course**

Every practical course shall have 60% weightage for continuous assessments and 40% for semester end examination. However, a student shall have secured a minimum of 50% marks in the semester end practical examination for the award of pass grade.

### **11.4 Laboratory integrated theory courses**

For laboratory integrated theory courses, the theory and practical components shall be assessed separately for 100 marks each and consolidated by assigning a weightage of 75% for theory component and 25% for practical components. Grading shall be done for this consolidated mark. Assessment of theory components shall have a total of three assessments with two continuous assessments carrying 25% weightage each and semester end examination carrying 50% weightage. The student shall secure a separate minimum of 40% in the semester end theory examination. The evaluation of practical components shall be through continuous assessment.

**11.5** The components of continuous assessment for theory / practical / laboratory integrated theory courses shall be finalized in the first class committee meeting.

### **11.6 Industry Internship**

In the case of industry internship, the student shall submit a report, which shall be evaluated along with an oral examination by a committee of faculty members constituted by the Head of the Department. The student shall also submit an internship completion certificate issued by the industry / research / academic organisation. The weightage of marks for industry internship report and viva voce examination shall be 60% and 40% respectively.

### **11.7 Project Work**

In the case of project work, a committee of faculty members constituted by the Head of the Department / Dean of the School shall carry out three periodic reviews. Based on the project report submitted by the students, an oral examination (viva voce) shall be conducted as semester end examination by an external examiner approved by the Controller of Examinations. The weightage for periodic reviews shall be 50%. Of the remaining 50%, 20% shall be for the project report and 30% for the viva voce examination.

**11.8** Assessment of seminars and comprehension shall be carried out by a committee of faculty members constituted by the Head of the Department.

**11.9** For the first attempt of the arrear theory examination, the internal assessment marks scored for a course during first appearance shall be used for grading along with the marks scored in the arrear examination. From the subsequent appearance onwards, full weightage shall be assigned to the marks scored in the semester end examination and the internal assessment marks secured during course of study shall become invalid.

In case of laboratory integrated theory courses, after one regular and one arrear appearance, the internal mark of theory component is invalid and full weightage shall be assigned to the marks scored in the semester end examination for theory component. There shall be no arrear or improvement examination for lab components.

### **12.0 SUBSTITUTE EXAMINATIONS**

**12.1** A student who is absent, for genuine reasons, may be permitted to write a substitute examination for any one of the two continuous assessment tests of a course by paying the prescribed substitute examination fee. However, permission to take up a substitute examination will be given under exceptional circumstances, such as accidents, admission to a hospital due to illness, etc. by a committee constituted by the Head of the Department / Dean of the School for that purpose. There is no substitute examination for semester end examination.

**12.2** A student shall apply for a substitute exam in the prescribed form to the Head of the Department / Dean of the School within a week from the date of assessment test. However, the substitute examination will be conducted only after the last instructional day of the semester.

**13.0 ATTENDANCE REQUIREMENT AND SEMESTER / COURSE REPETITION**

**13.1** A student shall earn 100% attendance in the contact periods of every course, subject to a maximum relaxation of 25% to become eligible to appear for the semester end examination in that course, failing which the student shall be awarded "I" grade in that course.

**13.2** The faculty member of each course shall cumulate the attendance details for the semester and furnish the names of the students who have not earned the required attendance in the concerned course to the class advisor. The class advisor shall consolidate and furnish the list of students who have earned less than 75% attendance, in various courses, to the Dean (Academic Affairs) through the Head of the Department/ Dean of the School. Thereupon, the Dean (Academic Affairs) shall officially notify the names of such students prevented from writing the semester end examination in each course.

**13.3** If a student secures attendance between 65% and less than 75% in any course in a semester, due to medical reasons (hospitalization / accident / specific illness) or due to participation in the institution approved events, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the semester end examination of that course. In all such cases, the students shall submit the required documents immediately after joining the classes to the class advisor, which shall be approved by the Head of the Department / Dean of the School. The Vice Chancellor, based on the recommendation of the Dean (Academic Affairs) may approve the condonation of attendance.

**13.4** A student who has obtained an "I" grade in all the courses in a semester is not permitted to move to the next higher semester. Such students shall repeat all the courses of the semester in the subsequent academic year.

**13.5** The student awarded "I" grade, shall enroll and repeat the course when it is offered next. In case of "I" grade in an elective course either the same elective course may be repeated, or a new elective course may be taken with the approval of Head of the Department / Dean of the School.

**13.6** A student who is awarded "U" grade in a course shall have the option to either write the semester end arrear examination at the end of the subsequent

semesters, or to redo the course in the evening when the course is offered by the department. Marks scored in the continuous assessment in the redo course shall be considered for grading along with the marks scored in the semester end (redo) examination. If any student obtains “U” grade in the redo course, the marks scored in the continuous assessment test (redo) for that course shall be considered as internal mark for further appearance of arrear examination.

- 13.7** If a student with “U” grade, who prefers to redo any particular course, fails to earn the minimum 75% attendance while doing that course, then he / she is not permitted to write the semester end examination and his / her earlier “U” grade and continuous assessment marks shall continue.

#### **14.0 REDO COURSES**

- 14.1** A student can register for a maximum of three redo courses per semester without affecting the regular semester classes, whenever such courses are offered by the concerned department, based on the availability of faculty members and subject to a specified minimum number of students registering for each of such courses.

- 14.2** The number of contact hours and the assessment procedure for any redo course shall be the same as regular courses, except there is no provision for any substitute examination and withdrawal from a redo course.

#### **15.0 PASSING AND DECLARATION OF RESULTS AND GRADE SHEET**

- 15.1** All assessments of a course shall be made on absolute marks basis. The class committee without the student members shall meet to analyse the performance of students in all assessments of a course and award letter grades following the relative grading system. The letter grades and the corresponding grade points are as follows:

<b>Letter Grade</b>	<b>Grade Points</b>
S	10
A	9
B	8
C	7
D	6
E	5
U	0
W	-

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- "W" - denotes withdrawal from the course.  
 "I" - denotes inadequate attendance in the course and prevention from appearance of semester end examination  
 "U" - denotes unsuccessful performance in the course.

**15.2** A student who earns a minimum of five grade points ('E' grade) in a course is declared to have successfully completed the course. Such a course cannot be repeated by the student for improvement of grade.

**15.3** Upon awarding grades, the results shall be endorsed by the chairman of the class committee and Head of the Department / Dean of the School. The Controller of Examination shall further approve and declare the results.

**15.4** Within one week from the date of declaration of result, a student can apply for revaluation of his / her semester end theory examination answer scripts of one or more courses, on payment of prescribed fee, through proper application to the Controller of Examinations. Subsequently the Head of the Department/ Dean of the School offered the course shall constitute a revaluation committee consisting of chairman of the class committee as convener, the faculty member of the course and a senior faculty member having expertise in that course as members. The committee shall meet within a week to revalue the answer scripts and submit its report to the Controller of Examinations for consideration and decision.

**15.5** After results are declared, grade sheets shall be issued to each student, which contains the following details: a) list of courses enrolled during the semester including redo courses / arrear courses, if any; b) grades scored; c) Grade Point Average (GPA) for the semester and d) Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

If  $C_i$ , is the number of credits assigned for the  $i^{\text{th}}$  course and  $GP_i$  is the Grade Point in the  $i^{\text{th}}$  course,

$$GPA = \frac{\sum_{i=1}^n (C_i)(GP_i)}{\sum_{i=1}^n C_i}$$

Where n = number of courses

The Cumulative Grade Point Average (CGPA) is calculated in a similar

manner, considering all the courses enrolled from the first semester.

“I” and “W” grades are excluded for calculating GPA.

“U”, “I” and “W” grades are excluded for calculating CGPA.

The formula for the conversion of CGPA to equivalent percentage of marks shall be as follows:

Percentage equivalent of marks = CGPA X 10

- 15.6** After successful completion of the programme, the degree shall be awarded to the students with the following classifications based on CGPA.

<b>Classification</b>	<b>CGPA</b>
First Class with Distinction	8.50 and above and passing all the courses in first appearance and completing the programme within the prescribed period of six semesters.
First Class	6.50 and above, having completed within a period of eight semesters.
Second Class	Others

**15.6.1 Eligibility for First Class with Distinction**

- A student should not have obtained “U” or “I” grade in any course during his/her study.
- A student should have completed the UG programme within the minimum prescribed period of study (except clause 7.1.1)

**15.6.2 Eligibility for First Class**

- A student should have passed the examination in all the courses not more than two semesters beyond the minimum prescribed period of study (except clause clause 7.1.1)

- 15.6.3** The students who do not satisfy clause 16.6.1 and clause 16.6.2 shall be classified as second class.

- 15.6.4** The CGPA shall be rounded to two decimal places for the purpose of classification. The CGPA shall be considered up to three decimal places for the purpose of comparison of performance of students and ranking.

**16.0 SUPPLEMENTARY EXAMINATION**

Final year students and passed out students can apply for supplementary examination for a maximum of three courses thus providing an opportunity to complete their degree programme. The students can apply for supplementary examination within three weeks of the declaration of results in the even semester.

**17.0 DISCIPLINE**

**17.1** Every student is expected to observe discipline and decorum both inside and outside the campus and not to indulge in any activity which tends to affect the reputation of the Institution.

**17.2** Any act of indiscipline of a student, reported to the Dean (Student Affairs), through the Head of the Department / Dean of the School concerned shall be referred to a Discipline and Welfare Committee constituted by the Registrar for taking appropriate action. This committee shall also address the grievances related to the conduct of online classes.

**18.0 ELIGIBILITY FOR THE AWARD OF DEGREE**

**18.1** A student shall be declared to be eligible for the award of B.A. / BBA / BCA / B.Com. / B.Sc. degree provided the student has:

- i) Successfully earned the required number of total credits as specified in the curriculum of the programme of study within a maximum period of 10 semesters from the date of admission, including break of study.
- ii) Successfully completed the requirements of the enrolled professional development activity.
- iii) No dues to the Institution, Library, Hostel, etc.
- iv) No disciplinary action pending against him/her.

**18.2** The award of the degree must have been approved by the Institution.

**19.0 POWER TO MODIFY**

Notwithstanding all that has been stated above, the Academic Council has the right to modify the above regulations from time to time.

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**B.S. ABDUR RAHMAN CRESCENT INSTITUTE OF SCIENCE AND  
TECHNOLOGY  
BACHELOR OF COMPUTER APPLICATIONS  
CURRICULUM & SYLLABI, REGULATIONS 2021**

<b>SEMESTER I</b>							
<b>Sl. No.</b>	<b>Course Group</b>	<b>Course Code</b>	<b>CourseTitle</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	AEC	END 1183	GeneralEnglish-I	3	0	0	3
2.	HC	LND 1181	General Tamil – I	2	1	0	3
		LND 1182	German – I	2	1	0	3
		LND 1183	Arabic Language	3	0	0	3
3.	AC	MAD 1187	Algebra and Numerical Methods	3	1	0	4
4.	CC	CAD 1101	Computer Fundamentals and Organization	3	0	0	3
5.	CC	CAD 1102	ProgramminginC	3	0	0	3
6.	CC	CAD 1103	Data Structures	3	0	0	3
7.	LC	CAD 1104	Programming in C Laboratory	0	0	4	2
8.	LC	CAD 1105	Data Structures Laboratory	0	0	4	2
<b>Total Credits</b>							<b>23</b>

<b>SEMESTER II</b>							
<b>Sl. No.</b>	<b>Course Group</b>	<b>Course Code</b>	<b>CourseTitle</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	AEC	END 1283	General English-II	3	0	0	3
2.	HC	LND 1281	General Tamil - II	2	1	0	3
		LND 1282	German - II	3	0	0	3
		LND 1283	Modern Communicative Arabic	3	0	0	3
3.	AC	MAD 1288	Probabilityand Statistics	3	1	0	4
4.	CC	CAD 1201	OOPSwithC++	3	0	0	3
5.	CC	CAD 1202	OperatingSystems	3	0	0	3
6.	MC	GED 1207	Environmental Studies	2	0	0	2
7.	LC	CAD 1203	OOPSwithC++Laboratory	0	0	4	2
8.	LC	CAD 1204	Linux Laboratory	0	0	4	2
<b>Total Credits</b>							<b>22</b>

**SEMESTER III**

Sl. No.	Course Group	Course Code	CourseTitle	L	T	P	C
1.	CC	CAD 2101	Design and Analysis of Algorithms	3	0	0	3
2.	CC	CAD 2102	Software Engineering	3	0	0	3
3.	CC	CAD 2103	Relational Database Management System	3	0	0	3
4.	CC	CAD 2104	Computer Networks	3	0	0	3
5.	SEC	CAD 2105	Programming in Java	3	0	0	3
6.	EC		<b>Technology Core I</b>	3	0	0	3
7.	LC	CAD 2106	Relational Database Management System Laboratory	0	0	4	2
8.	LC	CAD 2107	Programming in Java Laboratory	0	0	4	2
9.	SEC	GED 2102	Aptitude and Interpersonal Skills	0	0	2	1
<b>Total Credits</b>							<b>23</b>

**SEMESTER IV**

Sl. No.	Course Group	Course Code	CourseTitle	L	T	P	C
1	CC	CAD 2201	Python Programming	3	0	0	3
2	OEC		OpenElective	3	0	0	3
3	CC		<b>Technology Core II</b>	3	0	0	3
4	CC		<b>Technology Core III</b>	3	0	0	3
5	CC		<b>Technology Core IV</b>	3	0	0	3
6	EC		<b>Programme Elective – I</b>	3	0	0	3
7	LC	CAD2203	Python Programming Laboratory	0	0	4	2
8	LC		<b>Technology CoreLab – I</b>	0	0	4	2
9	SEC	GED 2204	Aptitude and Workplace Skills	0	0	2	1
<b>Total Credits</b>							<b>23</b>

**SEMESTER V**

Sl. No.	Course Group	Course Code	CourseTitle	L	T	P	C
1.	CC	CAD 3101	Reasoning and Thinking	3	0	0	3
2.	CC	CAD 3102	Artificial Intelligence	3	0	0	3
3.	CC		<b>Technology Core V</b>	3	0	0	3
4.	CC		<b>Technology Core VI</b>	3	0	0	3
5.	CC		<b>Technology Core VII</b>	3	0	0	3
6.	EC		<b>Programme Elective – II</b>	3	0	0	3
7.	LC		<b>Technology Core Lab – II</b>	0	0	4	2
8.	LC		<b>Technology Core Lab – III</b>	0	0	4	2
9.	SEC	CAD 3108	Personality Development Skills	1	0	0	1
<b>Total Credits</b>							<b>23</b>

**SEMESTER VI**

Sl. No.	Course Group	Course Code	CourseTitle	L	T	P	C
1	CC	CAD 3201	Enterprise Application Development	3	0	0	3
2	PROJ	CAD 3202	Project Work	0	0	0	12
3	CC		<b>Technology Core VIII</b>	3	0	0	3
<b>Total Credits</b>							<b>18</b>

**Overall Total Credits – 132**

**LIST OF TECHNOLOGY CORE COURSES (SEMESTER III)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>CourseTitle</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX 101	Introduction to Cloud Technology (CTIS)	3	0	0	3
2.	CADX 103	IntroductiontoData Science (DS)	3	0	0	3
3.	CADX 104	MultimediaToolsandTechniques (MM)	3	0	0	3

**LIST OF TECHNOLOGY CORE COURSES (SEMESTER IV)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>CourseTitle</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX 201	Information Security Fundamentals (CTIS)	3	0	0	3
2.	CADX 202	Business Intelligence (DS)	3	0	0	3
3.	CADX 203	Introduction to Scripting Languages (MM)	3	0	0	3
4.	CADX 204	Web Tecnology (MM)	3	0	0	3
5.	CADX 205	Server Operating System (CTIS)	3	0	0	3
6.	CADX 207	Big Data Analytics (DS)	3	0	0	3
7.	CADX 212	Fundamentals of Datacenter (CTIS)	3	0	0	3
8.	CADX 214	Exploratory Data Analysis (DS)	3	0	0	3
9.	CADX 215	Computer Graphics(MM)	3	0	0	3

**LIST OF TECHNOLOGY CORE LAB I (SEMESTER IV)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>CourseTitle</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX 208	Web Technology Laboratory (MM)	0	0	4	2
2.	CADX 211	Big Data Analytics Laboratory (DS)	0	0	4	2

**LIST OF TECHNOLOGY CORE COURSES (SEMESTER V)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>CourseTitle</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX 105	Computer Forensics and Investigation (CTIS)	3	0	0	3
2.	CADX 106	Machine Learning Algorithms (DS)	3	0	0	3
3.	CADX 107	Games,Arts and Design(MM)	3	0	0	3
4.	CADX 108	R Programming (DS)	3	0	0	3
5.	CADX 109	Virtualization and Cloud Security(CTIS)	3	0	0	3
6.	CADX 110	XML and Web Services (MM)	3	0	0	3
7.	CADX 111	Principles of Virtualization (CTIS)	3	0	0	3
8.	CADX 113	Time Series Analysis (DS)	3	0	0	3
9.	CADX 114	Specialization in 3D Productions (MM)	3	0	0	3

**LIST OF TECHNOLOGY CORE LAB II (SEMESTER V)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX115	Computer Forensics and Investigation Laboratory (CTIS)	0	0	4	2
2.	CADX116	Machine Learning Algorithms Laboratory (DS)	0	0	4	2
3.	CADX117	Animation Laboratory (MM)	0	0	4	2

**LIST OF TECHNOLOGY CORE LAB III (SEMESTER V)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX 118	R Programming Laboratory (DS)	0	0	4	2
2.	CADX 119	Virtualization Laboratory (CTIS)	0	0	4	2
3.	CADX 121	XML and Web Services Laboratory (MM)	0	0	4	2

**LIST OF TECHNOLOGY CORE COURSES (SEMESTER VI)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	CADX 216	IT governance, Risk and Information Security Management (CTIS)	3	0	0	3
2.	CADX 217	Data Science Project Management (DS)	3	0	0	3
3.	CADX 218	Web and E-Business (MM)	3	0	0	3

**LIST OF PROGRAMME ELECTIVE COURSES**

Sl. No.	Course Code	CourseTitle	L	T	P	C
<b>PROGRAMME ELECTIVES – I</b>						
1	CADX 250	E-Commerce	3	0	0	3
2	CADX 251	Information Retrieval	3	0	0	3
3	CADX 252	Social Media Analysis	3	0	0	3
4	CADX 253	Online Advertisement	3	0	0	3
5	CADX 254	PHP Programming	3	0	0	3
<b>PROGRAMME ELECTIVES – II</b>						
1	CADX 150	Healthcare Analytics	3	0	0	3
2	CADX 151	Agile Methodology	3	0	0	3
3	CADX 152	Human Resource Analytics	3	0	0	3
4	CADX 153	Web Mining	3	0	0	3
5	CADX 154	Human Computer Interaction	3	0	0	3

**OPEN ELECTIVE COURSES FOR BA/ BBA / B.Com./ BCA/ B.Sc.  
PROGRAMMES R 2021**

Sl. No.	Course Code	Course Title	L	T	P	C	Offering Department
1.	GEDX 301	Accounting and Financial Management	3	0	0	3	Commerce
2.	GEDX 302	AI for E-Commerce	3	0	0	3	ECE
3.	GEDX 303	Basics of Management and Organizational Behaviour	3	0	0	3	CSB
4.	GEDX 304	Behavioural Psychology	3	0	0	3	SSSH
5.	GEDX 305	Big Data Analytics	3	0	0	3	CA
6.	GEDX 306	Building Repair Solutions	3	0	0	3	Civil
7.	GEDX 307	Cloud Services and Management	3	0	0	3	CA
8.	GEDX 308	Computer Fundamentals and Office Automation	2	0	2	3	CA
9.	GEDX 309	Consumer Electronics	3	0	0	3	ECE
10.	GEDX 310	Creative Writing	2	1	0	3	English

BCA	Bachelor of Computer Applications	Regulations 2021				
11.	GEDX 311 Customer Relationship Management Analytics	3	0	0	3	CA
12	GEDX 312 Cyber Law and Ethics	3	0	0	3	CSL
13	GEDX 313 Disaster Management	3	0	0	3	Civil
14	GEDX 314 Drone Technologies	2	0	2	3	Aero
15	GEDX 315 English for Competitive Examination	2	1	0	3	English
16	GEDX 316 Enterprise Risk Management	3	0	0	3	CSB
17	GEDX 317 Fundamentals of Project Management	3	0	0	3	CSB
18	GEDX 318 Genetic Engineering	3	0	0	3	SLS
19	GEDX 319 Green Design and Sustainability	3	0	0	3	Civil
20	GEDX 320 Industrial Safety	3	0	0	3	Mech.
21	GEDX 321 Internet of Things and Its Applications	3	0	0	3	ECE
22	GEDX 322 Introduction to Health Care Analytics	3	0	0	3	CA
23	GEDX 323 IPR and Patent Laws	3	0	0	3	CSB
24	GEDX 324 Logistics and Supply Chain Management	3	0	0	3	CSB
25	GEDX 325 Motor Vehicle Act and Loss Assessment	3	0	0	3	Automobile
26	GEDX 326 National Service Scheme	3	0	0	3	SSSH
27	GEDX 327 National Cadet Corps	3	0	0	3	SSSH
28	GEDX 328 Numerical Computational Tools for Engineers	2	0	2	3	EIE
29	GEDX 329 Organizational Behaviour	3	0	0	3	CA
30	GEDX 330 Personal Finance and Investment	3	0	0	3	Commerce
31	GEDX 331 Polymers for Emerging Technologies	3	0	0	3	Polymer
32	GEDX 332 Professional Ethics and Values	3	0	0	3	SSSH
33	GEDX 333 Programming Principles	3	0	0	3	CSE
34	GEDX 334 Public Speaking and Rhetoric	2	1	0	3	English
35	GEDX 335 R Programming	2	0	2	3	CA
36	GEDX 336 Smart Sensors for Healthcare applications	3	0	0	3	EIE
37	GEDX 337 Total Quality Management	3	0	0	3	Mech.
38	GEDX 338 Vehicle Maintenance	3	0	0	3	Automobile
39	GEDX 339 Waste Water Management	3	0	0	3	Civil
40	GEDX 340 Web Application Development	3	0	0	3	CA