ADITYA ENGINEERING COLLEGE
An Autonomous Institution

ACADEMIC REGULATIONS (AR20) FOR B.TECH. (REGULAR)
(Revised on 21/11/22)

Applicable to the students of B.Tech.(Regular) admitted from the academic year 2020-21 onwards.

1. AWARD OF B. TECH. DEGREE

A student will be declared eligible for the award of B. Tech. Degree if the student fulfills the following academic regulations.

1.1 If the student pursued a Program of study in not less than four and not more than eight academic years. After eight academic years from the year of admission, the student shall forfeit his seat in B.Tech. and his admission stands cancelled.

1.2 The student shall register for 160 credits and secure all the 160 credits.

1.3 The students shall register for NCC/NSS activities and receive a "Satisfactory" grade.

1.4 The student shall register for all of the Mandatory courses and receive a "Satisfactory" grade.

1.5 A student shall be eligible for the award of B.Tech. Degree with Honors or Minor if the student earns 20 credits in addition to the 160 credits. A student shall be permitted to register either for Honors or Minor and not for both simultaneously.

2. PROGRAMS OF STUDY

The following programs of study are offered at present as B.Tech. specializations.

S. No	Program	Program Code	Short Name
01	B.Tech - Civil Engineering	01	CE
02	B.Tech - Electrical and Electronics Engineering	02	EEE
03	B.Tech - Mechanical Engineering	03	ME
04	B.Tech - Electronics and Communication Engineering	04	ECE
05	B.Tech - Computer Science and Engineering	05	CSE
06	B.Tech - Information Technology	12	IT
07	B.Tech - Mining Engineering	26	Min.E
08	B.Tech - Petroleum Technology	27	PT

09	B.Tech - Agricultural Engineering	35	Ag.E
10	B.Tech - Computer Science & Engineering (Data Science)	44	CSE(DS)
11	B.Tech - Artificial Intelligence and Machine Learning	61	AIML

3. ADMISSION PROCESS

Admission to the B.Tech. program shall be made subject to the eligibility, qualifications and specialization prescribed by the A.P. State Government/ University/ AICTE from time to time. Admissions shall be made either on the basis of the merit rank obtained by the student in the Common Entrance Examination conducted by the A.P. Government/University or on the basis of any other order of merit approved by the A.P. Government/University/AICTE, subject to reservations prescribed.

4. PROGRAM PATTERN

4.1   The total duration of B.Tech. (Regular) program is for four academic years and each academic year of study is divided into two semesters.

4.2   The minimum number of instruction days in each semester is 90.

4.3   The medium of instruction for the entire B.Tech. undergraduate program in Engineering & Technology (including examinations and Project reports) will be in English only.

4.4   The student is introduced to "Choice Based Credit System (CBCS)" and Credit Based Semester System (CBSS) as indicated by UGC and AICTE. The credits allotted for a course depends on the following.

1 Hour Lecture (L) per week	1 Credit
1 Hour Tutorial (T) per week	1 Credit
1 Hour Practical (P) per week	0.5 Credit

4.5   The student has to register for all courses in a semester. In each semester, a student shall mandatorily register for elective courses, which he/she wishes to pursue within a week from the starting of the class work with the advice of Head of the Department.

4.6   All the credit courses shall be considered for the calculation of SGPA and CGPA.

4.7   Every course shall be assessed using 'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)'. The CIE marks shall be based on the Sessional Examinations.

4.8   In the course structure, in addition to the regular courses, there shall be 10 months internships, 05 Professional Elective courses, 04 Open Elective courses and 05 skill-oriented courses (two shall be skill-oriented courses from the same domain, one shall be employability skills course and the remaining two shall be skill-advanced courses either from the same domain or job-oriented skill courses which can be of interdisciplinary nature).

4.9   The 10 months industry/field mandatory internship, both industry and social, during the summer vacation and also in the final semester is included to acquire the skills required for a job and make engineering graduates connect with the needs of the industry and society at large.

4.10   The Open Electives are offered to students of all branches in general. A student shall choose an open elective, by consulting the Head of the Department (HOD) /advisor, from the list in such a manner that he/she has not studied the same course in any form during the program.

4.11   A faculty advisor/mentor/proctor is assigned to each student from the same department to provide guidance in career growth/course registration/ placements/opportunities for higher studies/GATE/other competitive exams etc.

4.12   A student who is eligible to appear for the Semester End Examination in a course but absent from it or has failed in it, may write the examination in that course when conducted next.

4.13   When a student is detained for lack of credits/shortage of attendance, the student shall be re-admitted into the same semester in which he has been detained, when offered next.

5. ATTENDANCE REQUIREMENTS

5.1   A student shall be eligible to write the Semester End Examinations if he acquires a minimum of 50% of attendance in each course and 75% of attendance in aggregate of all the courses.

5.2   Condonation of shortage of attendance in aggregate up to 10% (65% and above and below 75%) on medical grounds in a semester may be granted by the College

Academic Committee and a student can be condoned for a maximum of three times only.

5.3   Shortage of Attendance below 65% in aggregate shall not be condoned.

5.4   Students whose shortage of attendance is not condoned in any semester are detained and not eligible to write their Semester End Examinations.

5.5   A medical certificate and a fee of Rs. 500/- shall be payable towards condonation for the shortage of attendance.

5.6   If any student fulfills the attendance requirement in the present semester, the student shall not be eligible for re-admission into the same semester.

5.7   If a student chooses to take a Certificate Course offered by industries/Professional bodies/APSSDC or any other accredited bodies, in lieu of the skill-oriented course offered by the Department, then his/her attendance in this course shall not be considered for the overall calculation of attendance.

5.8   If a student opted to study an elective course under MOOCs provided by an external agency, his/her attendance in this course shall not be considered in the overall calculation of attendance.

5.9   A student who has a shortage of attendance in a semester may seek re-admission into that semester when offered next, within 4 weeks from the date of the commencement of classwork.

6. PROMOTION RULES

6.1   A student will be promoted to the next semester if the student satisfies the attendance requirement of the present semester.

6.2   A student will be promoted from IV semester to V semester, if the student fulfills the attendance requirement in IV Semester and the academic requirement of 40% of the credits upto IV semester from all the examinations, whether or not the student takes the examinations.

6.3   A student shall be promoted from VI semester to VII semester if the student fulfills the attendance requirement in VI Semester and the academic requirements of 40% of the credits upto VI semester from all the examinations, whether or not the student takes the examinations.

7. GAP - Year

The concept of Student Entrepreneur in Residence shall be introduced and students who wish to pursue entrepreneurship are allowed to take a break of one year at any time after II semester to pursue entrepreneurship full time. This period shall be counted for the maximum time for graduation. An evaluation committee shall be constituted to evaluate the proposal submitted by the student and the committee shall decide on permitting the student for availing of the Gap Year.

8. EVALUATION - DISTRIBUTION AND WEIGHTAGE OF MARKS

8.1   The performance of a student in each semester shall be evaluated course-wise with a maximum of 100 marks for Theory courses, Lab courses, Mandatory courses, Community Service Project and Summer Internship. The Full- semester Internship (Project) shall be evaluated for 200 marks.

8.2   For Theory courses, there shall be two Sessional Examinations during the semester for 30 marks each and Semester End Examination for 70 marks. The Sessional marks shall be awarded by giving a weightage of 80% for the best of the two Sessional Examinations and 20% for the other Sessional Examination. The Sessional Examination shall be conducted as Descriptive Examination for 15 marks, Objective Examination for 10 marks and Assignment for 5 marks. The I Sessional Examination is conducted for the first 2½ units of syllabus and II Sessional Examination for the remaining 2 ½ units of syllabus.

The descriptive examination is conducted for 90 minutes. Each descriptive examination question paper shall contain 3 questions of equal marks and all questions need to be answered. The Objective examination is conducted for 20 minutes and shall contain 20 Multiple Choice Questions with a weightage of ½ mark each. For Assignment, the nature of the test (Design, Analysis, Simulation, Algorithms, Drawing, Quiz, Term paper, Tutorial, Surprise test, Seminar, Case study, Lab activity, Minor Project, Virtual Labs etc. as the case may be) will be intimated by the faculty concerned at the beginning of the semester.

The Semester End Examination is conducted for 70 marks for a duration of 180 minutes, which contains ten questions, two questions are from each unit and each question may have sub-questions. The student has to write one question from each unit. Each question carries 14 marks.

8.3 For Lab courses, there shall be Sessional Examination during the semester for 30 marks and Semester End Examination for 70 marks. The Sessional marks shall be awarded as, Continuous Evaluation -10 marks, Observation and Record -10 marks and laboratory examination -10 marks. The Semester End Examination shall be conducted by the faculty concerned and external examiner appointed by the Principal.

8.4 For Design, Drawing and estimation courses as a Theory course (such as Engineering Graphics, Machine Drawing, Design and Drawing of Reinforced Concrete Structures etc.), the distribution shall be 30 marks for Sessional evaluation (15 marks for continuous evaluation, and 15 marks for Sessional Examination) and 70 marks for Semester End examination. There shall be two Sessional Examinations in a Semester. The Sessional marks shall be awarded by giving a weightage of 80% for the best of two Sessional Examinations and 20% for the other Sessional Examination. The Semester End Examination pattern is based on the nature of the course.

8.5 For Integrated courses (Theory + Lab), there shall be a separate examination for Theory and Lab. The student has to pass the Theory examination and Lab examination simultaneously. Otherwise, the student has to appear for supplementary examination for both theory and lab. The final marks shall be calculated on weighted average method for converting marks into grade points. Sample calculation: Assume Integrated course is for 3 credits (Theory is for 2 credits and Lab is for 1 credit). If Total Marks obtained in Theory is 75 out of 100 (2 Credits) and Total Marks obtained in Lab is 90 out of 100 (1 Credit), the final marks for the integrated course are 80.

$$\text{Final Marks} = \frac{(75*2)+(90*1)}{3} = 80$$

8.6 A student is deemed to have passed a course (Theory or Lab) and earns the credits allotted to that course by securing not less than 35% of marks in the Semester End Examination, and a minimum 40% of marks of the total marks (sum of Sessional marks and Semester End Examination marks).

8.7 For Mandatory Courses, during a semester there shall be one examination for 100 marks in which a student should get a minimum of 40% of the marks to get the result as "Satisfactory", otherwise the student performance is considered as "Not Satisfactory". The examination is conducted online with multiple choice questions

at the department level by covering the topics of all units. If a student fails to get "Satisfactory" or is absent for examination, the student has to write the examination in that course when conducted next.

8.8 For Employability Skills (which includes Aptitude and Soft Skills) as a Mandatory Course, during a semester, there shall be an evaluation for 100 marks at the department level. There shall be a separate evaluation for Aptitude and Soft skills. The marks obtained for Employability Skills is the sum of marks obtained in Aptitude and Soft Skills together. The student should get a minimum of 40% of the marks for a "Satisfactory" result; otherwise, the student's performance is considered as "Not Satisfactory". If a student fails to get "Satisfactory" or is absent for examination, the student has to write the examination in that course when conducted next.

8.9 For Employability Skills (which includes Aptitude and Soft Skills) as a credit course, the examination is conducted for 100 marks in which 30 marks are for Sessional Examination and 70 marks for Semester End Examination. There shall be two Sessional Examinations during the semester. There shall be a separate evaluation for Aptitude and Soft skills. For Aptitude, the Sessional Examination is conducted for 30 minutes with 30 questions (Multiple Choice Questions with a weightage of ½ mark each) carrying 15 marks and for Soft Skills, the Sessional Examination is conducted as activity-based for 15 marks. The Sessional Marks for Employability Skills is the sum of marks obtained in Aptitude and Soft Skills together. The final Sessional marks shall be awarded by giving 80% weightage for the best of two Sessional Examinations and 20% weightage for other Sessional Examination.

The Semester End Examination for Aptitude is conducted for 140 minutes with 140 questions (Multiple Choice Questions with a weightage of ¼ mark each) carrying 35 marks and for Soft Skills, an activity-based examination is conducted for 35 marks by the faculty concerned and external examiner appointed by the Principal.

8.10 For Skill-oriented courses, a student shall be given an option to choose either the skill courses being offered by the college or to choose a certificate course being offered by industries/Professional bodies/APSSDC or any other accredited bodies approved by the HOD. If a student chooses to take a Certificate Course offered by external agency, the agency has to issue a certificate with "Satisfactory" condition.

If the certificate issued by external agency is marked with " Not Satisfactory" condition, the student shall repeat the course either in the college or at external agency, when offered next. After successful completion, a student shall submit a record/report on the skills learned with the certificate issued by the agency included in it. The course will be evaluated at the end of the semester for 100 marks (record/report: 30 marks, examination & viva-voce: 70 marks) along with laboratory Semester End Examinations in the presence of internal examiner (course instructor or mentor) and External examiner appointed by Principal. There are no sessional marks. A student has to secure atleast 40% of marks to pass the course.

8.11   A student shall be permitted to pursue upto a maximum of two elective courses under MOOCs (Massive Open Online Courses) during the B.Tech. Program. Each of the courses must be a minimum of 12 weeks in duration. The student has to pursue and acquire a certificate for the MOOCs only from the organizations/agencies approved by the HOD. The student needs to earn a certificate by passing the examination. The student will be awarded the credits given in the curriculum only upon submission of the certificate. In case a student does not pass the courses registered through MOOCs, the same or alternative equivalent course may be registered again through MOOCs in the next semester with the recommendation of HOD.

8.12   The students shall mandatorily register for NCC/NSS activities and is required to participate in an activity specified by NCC/NSS officer during the second or third semesters. The grade shall be awarded as "Satisfactory" or "Not Satisfactory" in the III semester grade sheet on the basis of participation, attendance, performance and behavior. If a student obtains a "Not Satisfactory" grade, he/she shall repeat the above activity in the subsequent years, in order to complete the degree requirements.

8.13   For Summer Internship, the students can undergo Industrial Training / Internship at Govt. Organizations, Construction agencies, Industries, Hydel and Thermal Power Plants, software MNCs etc. or do Research projects in National Laboratories/Academic Institutions like IITs, NITs etc. during summer breaks after completion of IV Semester and VI Semester End Examinations. However, the Summer Internship shall be evaluated in the V semester and VII semester, respectively. A group of students or even a single student can take up the

Internship. Completion of internship is mandatory. After successful completion, students shall submit a summer internship technical report to the department concerned. A certificate from the industry/organization shall be included in the report. The Summer Internship shall be evaluated for 100 marks at the end of the semester based on the report submitted and an oral presentation. The report carries 30 marks and oral presentation carries 70 marks. The student shall appear for the oral presentation before the Project Review Committee (PRC)* and an External Examiner appointed by Principal. There shall be no sessional marks for Summer Internship.

A Community Service Project (CSP) is to be carried out by each student for 180 hours during the summer breaks after II semester and the remaining part of CSP is to be done in the III semester weekends and holidays. The evaluation of CSP is done in III semester. The CSP is to be carried out in addition to the summer internships.

A group of students or even a single student can take up the Community Service Project. The students have to identify social problems existing in any geographical area/village and try to solve them technically or suggest to people the necessary solutions for solving these problems. After successful completion, students shall submit a detailed report to the department concerned. The detailed information regarding the Community Service Project is available in Appendix I.

The Community Service Project shall be evaluated for 100 marks at the end of semester based on the report submitted and an oral presentation. The report carries 75 marks and oral presentation carries 25 marks. The student shall appear for the oral presentation before the Project Review Committee (PRC)*. There shall be no sessional marks for Community Service Project (CSP).

A student has to secure atleast 40% of marks for successful completion in Summer Internship or Community Service Project. In case, a student fails, he/she shall reappear for the examinations when conducted next.

*The PRC consists of HOD, Supervisor, and a senior faculty member of the department.

8.14   For Full-semester Internship (Project) in the final semester, the student should mandatorily register and undergo internship and in parallel, he/she should work on a project with well-defined objectives. At the end of the semester, the candidate shall submit an internship completion certificate and a project report. A student shall

also be permitted to submit project report on the work carried out during the internship. For Project, 200 marks are awarded, out of which 60 marks shall be for Sessional Evaluation and 140 marks for the Semester End Examination. A group of students or even a single student can take up the Internship for full semester. The supervisor shall assess the student for 30 marks (Report: 15 marks, Seminar: 15 marks). At the end of the semester, all projects shall be showcased at the department for the benefit of all students/staff and the same shall be evaluated by the PRC for 30 marks from four reviews. The Sessional marks for Project are the sum of marks allotted by the Supervisor and the marks allotted by PRC. The Semester End Examination (Viva-Voce) shall be conducted by the committee that consists of an External Examiner appointed by Principal and PRC.

8.15   The distribution and weightage of marks are as follows.

S. No	Components	CIE	SEE	Total
1	Theory Courses	30	70	100
2	Lab Courses	30	70	100
3	Mandatory Courses	----	100	100
4	Skill Oriented Courses	----	100	100
5	Summer Internship/Community Service Project	----	100	100
6	Full-semester Internship (Project)	60	140	200

8.16   Script Viewing / Re-evaluation of the Semester End Examination: A student can request for Script Viewing / Revaluation of his/her answer booklet of theory courses only, on payment of a prescribed fee as per norms.

8.17   Supplementary Examinations: A student who has failed a course can appear for supplementary examinations as and when conducted.

8.18   Malpractices in Examinations: Disciplinary action shall be taken in case of malpractices during Sessional/Semester End Examinations as per the malpractice rules.

9. HONORS PROGRAM

Students of a Department/Discipline are eligible to opt for Honors Program offered by the same Department/Discipline. A student shall be permitted to register for the Honors program at the beginning of the IV semester provided that the student must have acquired a minimum of 8.0 CGPA up to the end of III semester without any backlogs. A CGPA of 8 has to be maintained in the subsequent semesters in order to keep the Honors registration active. For pursuing honors degree, the entry level eligibility only is considered in IV

semester. Further during the study of Honors degree, a student should not fail in any course studying under Honors degree. The GPA of Honors degree courses is not considered, only pass or fail is considered. The detailed information regarding the Honors program is available in Appendix - II.

10. MINOR PROGRAM

Students who are desirous of pursuing their special interest areas other than the chosen discipline of Engineering may opt for additional courses in minor specialization groups offered by a department other than their parent department. For example, If a Mechanical Engineering student selects courses from Civil Engineering under this scheme, he will get a Major degree in Mechanical Engineering with a Minor degree in Civil Engineering. A student shall be permitted to register for the Minor program at the beginning of the IV semester provided that the student must have acquired a minimum of 7.75 CGPA up to the end of III semester without any backlogs.

A student can also opt for Industry relevant tracks of any branch to obtain the Minor Degree. For example, a B.Tech. Mechanical Engineering student can opt for the industry-relevant tracks like Data Mining, IoT, Machine learning etc.

The minor tracks can be the fundamental courses in CE, EEE, ME, ECE, CSE etc., or industry relevant tracks such as Artificial Intelligence (AI), Machine Learning (ML), Data Science (DS), Robotics, Electric vehicles, VLSI etc.

For pursuing minor degree, the entry level eligibility only is considered in IV semester. Further during the study of minor degree, a student should not fail in any course studying under minor degree. The GPA of minor degree courses is not considered, only pass or fail is considered. The detailed information regarding the Minor program is available in Appendix - III.

11.   AWARD OF GRADE POINT AVERAGE AND CLASS

11.1   *GRADING*

After each course is evaluated for 100 marks, the marks obtained in each course will be converted to a corresponding Letter Grade and Grade Point as given below, depending on the range in which the marks obtained by the student fall.

Letter Grade: It is an index of the performance of students in a said course.

Grades are denoted by letters A+, A, B, C, D, E and F. If a student is absent for the examination, it is denoted as AB.

Grade Point: It is a numerical weight allotted to each letter grade on a 10-point scale.

For Credit Courses:

Range of Marks (%)	Letter Grade	Level	Grade Point
≥ 90	A+	Outstanding	10
≥ 80 & <90	A	Excellent	9
≥ 70 & <80	B	Very Good	8
≥ 60 & <70	C	Good	7
≥ 50 & <60	D	Fair	6
≥ 40 & <50	E	Satisfactory	5
<40	F	Fail	0
-	AB	Absent	0

For Mandatory Courses/Non-Credit Courses:

Range of Marks	Letter Grade	Result
≥ 40	S	Satisfactory
< 40	N	Not Satisfactory

11.2 CALCULATION OF GRADE POINT AVERAGE

i. Calculation of Semester Grade Point Average (SGPA)

The SGPA is the ratio of the sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student.

$$SGPA(S_i) = \frac{\Sigma(C_i \times G_i)}{\Sigma(C_i)}$$

where C_i is the number of credits of the ith course and

G_i is the grade point scored by the student in the ith course

ii. Calculation of Cumulative Grade Point Average (CGPA)

The CGPA is also calculated in the same manner taking into consideration all the courses undergone by a student over all the semesters of the program.

$$CGPA = \frac{\Sigma(C_i \times S_i)}{\Sigma(C_i)}$$

where S_i is the SGPA of the ith semester and

C_i is the total number of credits in that semester

iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

iv. While computing the SGPA/CGPA, the courses in which the student is awarded zero grade points will also be included.

v. Grade Point Average can be converted into an equivalent percentage using

Percentage of Marks = (CGPA - 0.75) x 10

vi. Illustration of Computation of SGPA and CGPA

Illustration for **SGPA:** Let us assume there are 6 courses in a semester and the grades obtained by a student are as follows:

Course	Credit	Grade Obtained	Grade point	S_i= Credit Point (Credit x Grade)
Course 1	3	B	8	3 X 8 = 24
Course 2	4	C	7	4 X 7 = 28
Course 3	3	D	6	3 X 6 = 18
Course 4	3	A+	10	3 X 10 = 30
Course 5	3	E	5	3 X 5 = 15
Course 6	4	D	6	4 X 6 = 24
	20			139

Thus, **SGPA =139/20 =6.95**

Illustration for **CGPA:** Let us assume the Credits and SGPA secured by the student in all the 8 semesters are as follows:

Semester 1	Semester 2	Semester 3	Semester 4
Credits: 20 SGPA: 6.95	Credits: 19 SGPA: 7.86	Credits: 21 SGPA: 5.68	Credits: 22 SGPA: 6.12

Semester 5	Semester 6	Semester 7	Semester 8
Credits: 20 SGPA: 6.34	Credits: 23 SGPA: 8.0	Credits: 21 SGPA: 6.45	Credits: 14 SGPA: 7.59

Thus,

$$CGPA = \frac{20 * 6.95 + 19 * 7.86 + 21 * 5.68 + 22 * 6.12 + 20 * 6.34 + 23 * 8 + 21 * 6.45 + 14 * 7.59}{160}$$

$$= 6.84$$

11.3 *AWARD OF CLASS*

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of B. Tech. degree, he shall be placed in one of the following four classes:

Class Awarded	CGPA secured from 160 Credits
First Class with Distinction	≥ 7.75 (Without any supplementary appearance)
First Class	≥ 6.75
Second Class	≥ 5.75 to < 6.75
Pass Class	≥ 4.75 to < 5.75

12. TRANSFER OF STUDENTS

12.1 The guidelines given by JNTUK / State Government will be followed for students to transfer from one college to another college.

12.2 In case of transferred students from other Universities/Colleges to AEC, the credits shall be transferred as per the academic regulations and course structure. Students have to obtain the credits of any equivalent courses as prescribed by the college if required.

12.3 There shall be no branch transfers after the completion of the admission process.

13. WITHHOLDING OF RESULTS

If the student has any dues in the college or is involved in indisciplinary /malpractice/ court cases, his result will be withheld.

14. TRANSITORY REGULATIONS

14.1 Discontinued or detained students are eligible for readmission as and when next offered.

14.2 The re-admitted students will be governed by the regulations under which the student has been admitted.

15. GENERAL

15.1 Wherever the words "he", "him", "his", occur in the regulations, they include "she", "her", "hers".

15.2 The academic regulations should be read as a whole for the purpose of any interpretation.

15.3 In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Academic Council is final.

15.4 The college may change or amend the academic regulations or syllabi as and when the need arises and the changes or amendments made shall apply to all the students with effect from the dates notified by the College.

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PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

ACADEMIC REGULATIONS (AR20) FOR B.TECH.(LATERAL ENTRY)

Applicable to the students admitted into B.Tech. III semester from the Academic Year 2021-22 onwards

1. AWARD OF B. TECH. DEGREE

A student will be declared eligible for the award of B. Tech. Degree if the student fulfills the following academic regulations.

1.1   If the student pursued a Program of study in not less than three and not more than six academic years. After six academic years from the year of admission, the student shall forfeit his seat in B.Tech. and his admission stands cancelled.

1.2   The student shall register for 121 credits and secure all the 121 credits.

1.3   A student shall be eligible for the award of B.Tech. degree with Honors or Minor if the student earns 20 credits in addition to the 121 credits. A student shall be permitted to register either for Honors or Minor and not for both simultaneously.

2. PROMOTION RULES

2.1   A student will be promoted to the next semester if the student satisfies the attendance requirement of the present semester.

2.2   A student shall be promoted from VI semester to VII semester if the student fulfills the attendance requirement in VI semester and the academic requirements of 40% of the credits up to VI semester from all the examinations, whether or not the student takes the examinations.

3. AWARD OF CLASS

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of B. Tech. degree, he shall be placed in one of the following four classes:

Class Awarded	CGPA secured from 121 Credits
First Class with Distinction	≥ 7.75 (Without any supplementary appearance)
First Class	≥ 6.75
Second Class	≥ 5.75 to < 6.75
Pass Class	≥ 4.75 to < 5.75

4. All the other regulations applicable to B. Tech (Regular) remain the same for B.Tech.(Lateral Entry) also.

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533437

ABBREVIATIONS

AICTE	**All India Council for Technical Education**
APSSDC	**Andhra Pradesh State Skill Development Corporation**
CBCS	**Choice Based Credit System**
CBSS	**Credit Based Semester System**
CGPA	**Cumulative Grade Point Average**
CIE	**Continuous Internal Evaluation**
GATE	**Graduate Aptitude Test in Engineering**
IIT	**Indian Institute of Technology**
JNTUK	**Jawaharlal Nehru Technological University Kakinada**
MNC	**Multinational Corporation**
MOOCs	**Massive Open Online Courses**
NCC	**National Cadet Corps**
NGO	**Non-Governmental Organization**
NIT	**National Institute of Technology**
NSS	**National Service Scheme**
PRC	**Project Review Committee**
RTI	**Right to Information**
SEE	**Semester End Examination**
SGPA	**Semester Grade Point Average**
UGC	**University Grants Commission**

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PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

APPENDIX - I

Guidelines for the Community Service Project

CONTENTS

1. Introduction

2. Objectives

3. Implementation of Community Service Project

4. Procedure

5. Expected outcomes

6. Time frame for the community service project

7. Assessment methodology for community service project

8. Model of the project report

9. Suggestive list of programmes under community service project

10. Complimenting the community service project, the students may be involved to take up some awareness campaigns on social issues/special groups.

COMMUNITY SERVICE PROJECT

Experiential learning through community engagement

1. INTRODUCTION

• Community Service Project is an experiential learning strategy that integrates meaningful community service with instruction, participation, learning and community development

• Community Service Project involves students in community development and service activities and applies the experience to personal and academic development.

• Community Service Project is meant to link the community with the college for mutual benefit. The community will be benefited with the focused contribution of the college students for the village/ local development. The college finds an opportunity to develop social sensibility and responsibility among students and also emerge as a socially responsible institution.

2. OBJECTIVES

• Community Service Project should be an integral part of the curriculum, as a part of the 2 months of Summer Internships / Apprenticeships / On the Job Training, whenever there is an exigency when students cannot pursue their summer internships. The specific objectives are;

- To sensitize the students to the living conditions of the people who are around them,

- To help students to realize the stark realities of the society.

- To bring about an attitudinal change in the students and help them to develop societal consciousness, sensibility, responsibility and accountability

- To make students aware of their inner strength and help them to find new /out of box solutions to the social problems.

- To make students socially responsible citizens who are sensitive to the needs of the disadvantaged sections.

- To help students to initiate developmental activities in the community in coordination with public and government authorities.

- To develop a holistic life perspective among the students by making them study culture, traditions, habits, lifestyles, resource utilization, wastages and its management, social Problems, public administration system and the roles and responsibilities of different persons across different social systems.

3. IMPLEMENTATION OF COMMUNITY SERVICE PROJECT

- Every student should put in a minimum of 180 hours for the Community Service Project during the summer vacation.

- Each class/section should be assigned with a mentor.

- The mentor should be a faculty member. Incentive could be given to the faculty mentors in terms of Academic Performance Indicators (API) scores. Or could even be made a compulsory in the service conditions laid down at the time of appointment.

- 4 Credits to be allocated for Community Service Project within the Choice Based Credit System (CBCS).

- The 180 hours of Community Service Project could be done in different areas.

- Specific Departments could concentrate on their major areas of concern. For example, Dept. of Computer Science can take up activities related to Computer Literacy to different sections of people like - youth, women, house-wives, etc... Dept. of Zoology or other life sciences departments could concentrate on health awareness, blood groupings, awareness on blood donation or organ donation, etc. Dept. of Mathematics and Statistics could dwell upon empowering the youth with analytical skills, Dept. of

Commerce could create awareness on GST or Income Tax Returns or other taxes or consumerism.

- Sky will be the limit for organizing different programmes, provided the faculties are sufficiently motivated.

- A log book has to be maintained by each of the student, where the activities undertaken/involved to be recorded.

- The log book has to be countersigned by the concerned mentor/faculty incharge.

- Evaluation to be done based on the active participation of the student and grade could be awarded by the mentor/faculty member.

- The final evaluation to be reflected in the grade memo of the student.

- The Community Service Project should be different from the regular programmes of NSS/NCC/Green Corps/Red Ribbon Club, etc.

- Minor project report should be submitted by each student. An internal Viva shall also be conducted by a committee constituted by the principal of the college.

- Award of marks shall be made as per the guidelines of Internship/apprentice/ on the job training

4. PROCEDURE

- A group of students or even a single student could be assigned for a particular habitation or village or municipal ward, as far as possible, in the near vicinity of their place of stay, so as to enable them to commute from their residence and return back by evening or so.

- The Community Service Project is a twofold one –
  o First, the student/s could conduct a survey of the habitation, if necessary, in terms of their own domain or subject area. For ex., a student of Arts will focus on socio-economic conditions, social survey and about the Government's social security schemes. A student of Sciences could take up a survey on the health and hygiene conditions of that habitation, similarly, with other subject areas too. Or it can even be a general survey, incorporating all the different areas. A common survey format could be designed. This should not be viewed as a duplication of work by the Village or Ward volunteers; rather, it could be another primary source of data.

    o Secondly, the student/s could take up a project work related to their domain or subject area.

- The different areas, could be like –

o Agriculture

o Health

o Marketing and Cooperation

o Animal Husbandry

o Horticulture

o Fisheries

o Sericulture

o Revenue and Survey

o Natural Disaster Management

o Irrigation

o Law & Order

o Excise and Prohibition

o Mines and Geology

o Energy

A specific example,

- A student of B.Sc (BZC) will first conduct a survey of his/her habitation which could be related to a specific area or in a comprehensive way of socioeconomic conditions, covering all the areas listed above.

or

- Could conduct an awareness programme on Health and Hygiene or in Organic Farming or in Fisheries or in advocating prohibition of liquor or about renewable energy, or any other activity in an area as per his/her aptitude and the problems identified in the socioeconomic survey conducted.

- A project work shall be done on a particular topic related to his/her domain subject area.

4. EXPECTED OUTCOMES

BENEFITS OF COMMUNITY SERVICE PROJECT TO STUDENTS

Learning Outcomes

- Positive impact on students' academic learning
- Improves students' ability to apply what they have learned in "the real world"
- Positive impact on academic outcomes such as demonstrated complexity of understanding, problem analysis, problem-solving, critical thinking, and cognitive development
- Improved ability to understand complexity and ambiguity

Personal Outcomes

- Greater sense of personal efficacy, personal identity, spiritual growth, and moral development
- Greater interpersonal development, particularly the ability to work well with others, and build leadership and communication skills

Social Outcomes

- Reduced stereotypes and greater inter-cultural understanding
- Improved social responsibility and citizenship skills
- Greater involvement in community service after graduation

Career Development

- Connections with professionals and community members for learning and career opportunities
- Greater academic learning, leadership skills, and personal efficacy can lead to greater opportunity

Relationship with the Institution

- Stronger relationships with faculty
- Greater satisfaction with college
- Improved graduation rates

BENEFITS OF COMMUNITY SERVICE PROJECT TO FACULTY MEMBERS

- Satisfaction with the quality of student learning
- New avenues for research and publication via new relationships between faculty and community
- Providing networking opportunities with engaged faculty in other disciplines or institutions
- A stronger commitment to one's research

BENEFITS OF COMMUNITY SERVICE PROJECT TO COLLEGES AND UNIVERSITIES

- Improved institutional commitment
- Improved student retention
- Enhanced community relations

BENEFITS OF COMMUNITY SERVICE PROJECT TO COMMUNITY

- Satisfaction with student participation
- Valuable human resources needed to achieve community goals
- New energy, enthusiasm and perspectives applied to community work
- Enhanced community-university relations.

ROLE OF STUDENTS:

- Students may not have the expertise to conduct all the programmes on their own. The students then can play a facilitator role and conduct the programmes involving Governmental agencies, Non-Governmental agencies or faculties of their college, etc.
- For conducting special camps like Health related, they will be coordinating with the Governmental agencies.
- As and when required the College faculty themselves act as Resource Persons.
- Students can work in close association with Non-Governmental Organizations like Lions Club, Rotary Club, etc or with any NGO actively working in that habitation.
- And also with the Governmental Departments. If the programme is rolled out, the District Administration could be roped in for the successful deployment of the programme.

- An in-house training and induction programme could be arranged for the faculty and participating students, to expose them to the methodology of Service Learning.

6. TIME FRAME FOR THE COMMUNITY SERVICE PROJECT

Duration: 8 weeks

Schedule:

Socio-Economic Survey of the Village/Habitation (Two weeks): A group of students under the guidance of faculty mentors conduct a Socioeconomic Survey of the Village/habitation. They will interact with people to acquire basic knowledge on the project chosen for study and conduct the survey using a structured questionnaire.

Community awareness campaign (one week): The students group takes up community awareness campaigns based on the above survey conducted by identifying the problems or vulnerable issues. They may also conduct house to house campaign on socially relevant theme. Ex: Government welfare programs, health care, consumer protection, food adulteration, digital transactions, information sources, etc.

Main Project (4 weeks): A group of students choose a topic related to their subject area and conduct a Project which includes, Data collection, interviews, internship in any select unit or department.

Report preparation (one week): The student should submit a project report duly signed by the mentor.

7. ASSESSMENT METHODOLOGY FOR COMMUNITY SERVICE PROJECT

Learning outcomes:

- To facilitate an understanding of the issues that confronts the vulnerable / marginalized sections of the society.
- To initiate team processes with the student groups for societal change.
- To provide students an opportunity to familiarize themselves with urban / rural community they live in.
- To enable students to engage in the development of the community.

- To plan activities based on the focused groups.
- To know the ways of transforming the society through systematic programme implementation.

The following is the evaluation methodology for awarding marks/grades.

There will be only internal evaluation for this internship. Each faculty member is to be assigned with 10 t0 15 students depending upon availability of the faculty members. The faculty member will act as a faculty-mentor for the group and is in-charge for the learning activities of the students and also for the comprehensive and continuous assessment of the students.

The assessment is to be conducted for 100 marks. The number of credits assigned is 4. Later as per the present practice the marks are converted into grades and grade points to include finally in the SGPA and CGPA.

The weightings shall be:

Project Log	20%
Project Implementation	30%
Project report	25%,
Presentation	25%

Each student is required to maintain an individual logbook, where he/she is supposed to record day to day activities. The project log is assessed on an individual basis, thus allowing for individual members within groups to be assessed this way. The assessment will take into consideration the individual student's involvement in the assigned work.

While grading the student's performance, using the student's project log, the following should be taken into account –

a. The individual student's effort and commitment.

b. The originality and quality of the work produced by the individual student.

c. The student's integration and co-operation with the work assigned.

d. The completeness of the logbook.

The assessment for the *Community Service Project implementation* shall include the following components and based on the entries of Project Log and Project Report:

a. Orientation to the community development

b. Conducting a baseline assessment of development needs

c. Number and Quality of Awareness Programmes organised on beneficiary programmes and improvement in quality of life, environment and social consciousness, motivation and

leadership, personality development, etc.

d. Number and Quality of Intervention Programmes (Prevention or promotion programs that aim to promote behavioural change in defined community contexts to address social problems) organised.

e. Follow-up Programmes suggested (Referral Services, Bringing Community Participation)

f. Developing short and mid-term action plans in consultation with local leadership and local government officers.

The **Project Report** shall be prepared as per the guidelines given in the Model Project Report.

The **Project Presentation** is to be made by the student after he/she reports back to the College.

The components for assessment are –

a. assessing the involvement in the project

b. presentation skills

c. final outcome of the project as evinced by the student.

Example:

Name of the Student:	X.YY ZZZ	
Class & Year of Study	II B.A. 2021 - 2022	
Registered Number	000000	
Assessment Component	**Max Marks**	**Marks Secured**
1. Project Log	20	15
2. Project Implementation	30	20
3. Project Report	25	20
4. Presentation	25	20
TOTAL OUT OF 100	**100**	**75**

Letter grade	Grade Point	Credits	Credit Point
O (outstanding)	10	2	20
A+ (Excellent)	9	2	18
A (Very Good)	8	2	16
B+ (Good)	7	2	14
B (Above average)	6	2	12
C (Average)	5	2	10
D (Pass)	4	2	8
F (Fail)	0	2	0
Ab (Absent)	0	2	0

In the above example, 75 marks are converted to letter grade / grade point.

Letter grade	Grade Point	Credits	Credit Point
B+ (Good)	7	2	14

8. MODEL OF THE PROJECT REPORT

PART – A

1. Introduction:

A. About the Village / Habitation. .

2. Socio-Economic Survey of the Village/Habitation.

A. Data collection using prescribed formats.

3. Problems identified and Analyses of the problems.

4. Short-term and long term action plan for possible solutions for the problems identified and that could be recommended to the concerned authorities for implementation.

5. Community awareness programmes conducted w.r.t the problems and their outcomes.

PART – B

1. A mini-project work in the related subject w.r.t the habitation/village. (For ex., a student of Botany may do a project on Organic Farming or Horticulture or usage of biofertilisers or biopesticides or effect of the inorganic pesticides, etc. A student of Zoology may do a project on Aquaculture practices or animal husbandry or poultry or health and hygiene or Blood group analysis or survey on the Hypertension or survey on the prevalence of diabetes, etc.

PART - C

1. Recommendations and conclusions.

2. References

9. SUGGESTIVE LIST OF PROGRAMMES UNDER COMMUNITY SERVICE PROJECT

The following the recommended list of projects for BA, B.Com, and B.Sc programmes. The lists are not exhaustive and open for additions, deletions and modifications. Colleges are expected to focus on specific local issues for this kind of projects. The students are expected to carry out these projects with involvement, commitment, responsibility and accountability. The mentors of a group of students should take the responsibility of motivating, facilitating, and guiding the students. They have to interact with local leadership and people and appraise the objectives and benefits of this kind of projects. The project reports shall be placed in the college website for reference. Systematic, Factual, methodical and honest reporting shall be ensured.

For Arts Students

1. Village demography
2. Healthcare programmes and their implementation
3. School education
4. Youth engagement
5. Women empowerment
6. Women education
7. Domestic violence
8. Culture, traditions, values and ethics
9. Employment of different sections
10. Status of socially deprived sections
11. Implementation of state development programmes
12. Implementation and impact of welfare schemes
13. Public distribution system
14. Social inclusiveness
15. Village governance
16. Health care system and its effectiveness
17. Information sources and their effectiveness
18. Entertainment media and habits
19. Social problems
20. Family and marriage systems across different social groups
21. Religion profile and their role in social development
22. Communal harmony

23. Innovative methods and practices

24. Village industry

25. Safety and security

26. Migration for employment

27. Infrastructure development

28. Facilities for quality life across different social groups

29. Leadership in family, community and social groups

30. Implementation of central schemes

31. Village development plans

32. Child labour

33. Sex education

34. Atrocities against women

35. Awareness of central government schemes and the level of participation

36. Community engagement programmes and their impact

37. Career orientation of youth

38. Skill development programmes and their impact

39. Alcohol and smoking habits and their impact on families and society

40. Crime rate, law and order and safety needs

41. Quality of Elementary education and accessibility

42. Factors considered for electing public representatives

43. Environment protection

44. Inter religious harmony

45. Treatment of aged persons

46. Sanitation systems

47. Tribal studies

48. Telugu literature and mondalics

49. Awareness of epics among youth and children

50. Anthropological survey

51. Music and dance

52. Performing arts

53. Social evils

For Commerce Students

1. Entrepreneurship

2. Agricultural products and marketing

3. Poultry business

4. Dairy business

5. Aquaculture

6. Wage system and Labour Welfare

7. Village industry products and marketing

8. Income and wealth distribution among different sections of the society

9. Entertainment services

10. Communication services

11. Banking services and habits

12. Insurance services and habits

13. Public distribution system

14. Vegetable marketing

15. Savings and Investments

16. Online purchases

17. Digital transactions

18. Use of electrical home appliances

19. Use of electronic home appliances

20. Personal transport

21. Consumer movement

22. Unfair trade practices

23. Food habits

24. Income distribution

25. Wealth distribution

26. Expenditure pattern on different product categories

27. Buying motives

28. Consumer behavior

29. Impact of celebrity advertising

30. Impact of TV on product choices

31. Usage of cell phones

32. Self-employed professionals

33. Construction

34. Leisure time management

35. Tourism

36. Leadership

37. Human resource development

38. Local administration

39. Office management in local governing bodies

40. Exports

41. Handicrafts

42. Handlooms

43. Public transport

44. Private transport

45. Cooperative societies

46. Shifts in occupations

47. Debt burden of different sections of the society

48. Time management

49. Dispute resolution systems

50. Commercial crops

For Science Students

1. Water facilities and drinking water availability

2. Health and hygiene

3. Stress levels and coping mechanisms

4. Health intervention programmes

5. Horticulture

6. Herbal plants

7. Botanical survey

8. Zoological survey

9. Marine products

10. Aqua culture

11. Inland fisheries

12. Animals and species

13. Nutrition

14. Traditional health care methods

15. Food habits

16. Air pollution

17. Water pollution

18. Plantation

19. Soil protection

20. Renewable energy

21. Plant diseases

22. Yoga awareness and practice

23. Health care awareness programmes and their impact

24. Use of chemicals on fruits and vegetables

25. Organic farming

26. Crop rotation

27. Floriculture

28. Access to safe drinking water

29. Geographical survey

30. Geological survey

31. Sericulture

32. Study of species

33. Food adulteration

34. Incidence of Diabetes and other chronic diseases

35. Human genetics

36. Blood groups and blood picture

10. COMPLIMENTING THE COMMUNITY SERVICE PROJECT THE STUDENTS MAY BE INVOLVED TO TAKE UP SOME AWARENESS CAMPAIGNS ON SOCIAL ISSUES/SPECIAL GROUPS.

The suggested programmes are –

Programmes for School Children

1. Reading Skill Programme (Reading Competition)

2. Preparation of Study Materials for the next class.

3. Personality / Leadership Development

4. Career Guidance for X class students

5. Screening Documentary and other educational films

6. Awareness Programme on Good Touch and Bad Touch (Sexual abuse)

7. Awareness Programme on Socially relevant themes.

Programmes for Women Empowerment

1. Government Guidelines and Policy Guidelines

2. Womens' Rights

3. Domestic Violence

4. Prevention and Control of Cancer

5. Promotion of Social Entrepreneurship

General Camps

1. General Medical camps

2. Eye Camps

3. Dental Camps

4. Importance of protected drinking water

5. ODF awareness camp

6. Swatch Bharath

7. AIDS awareness camp

8. Anti Plastic Awareness

9. Programmes on Environment

10. Health and Hygiene

11. Hand wash programmes

12. Commemoration and Celebration of important days

Programmes for Youth Empowerment

1. Leadership

2. Anti-alcoholism and Drug addiction

3. Anti-tobacco

4. Awareness on Competitive Examinations

5. Personality Development

Common Programmes

1. Awareness on RTI

2. Health intervention programmes

3. Yoga

4. Tree plantation

5. Programmes in consonance with the Govt. Departments like –

   i. Agriculture

   ii. Health

   iii. Marketing and Cooperation

   iv. Animal Husbandry

   v. Horticulture

   vi. Fisheries

   vii. Sericulture

   viii. Revenue and Survey

   ix. Natural Disaster Management

   x. Irrigation

   xi. Law & Order

   xii. Excise and Prohibition

   xiii. Mines and Geology

   xiv. Energy

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APPENDIX - II

Guidelines for B. Tech Honors Degree - B. Tech (Hons)

(Applicable from the Academic Year 2019-20 (AR19) and Academic Year 2020-21 (AR20))

I. INTRODUCTION

The goal of introducing B. Tech (Hons) is to facilitate the students to choose additionally the specialized courses of their choice and build their competence in a specialized area in the UG level. The programme is a best choice for academically excellent students having good academic record and interest towards higher studies and research. All the students pursuing regular B. Tech with prerequisite CGPA are eligible to the register Honors degree course. A student has to acquire 20 more credits, in addition to 160 credits required, for the award of the B. Tech Honors degree. The additional courses shall be advanced subjects in the concerned department/discipline. The department concerned will determine required courses for award of Honor degree. The subjects in the Honor degree would be a combination of core (theory and lab) and some electives.

II. OBJECTIVES

The objectives of initiating the B. Tech (Honors) degree certification are:
a) To encourage the undergraduates towards higher studies and research
b) To prepare the students to specialize in core Engineering streams.
c) To attain the high-level competence in the specialized area of Undergraduate programme
d) To learn the best educational and professional skills in the specialized area after thecompletion of his undergraduate courses.
e) To provide the opportunity to learn the post graduate level courses in the specified undergraduate program.

III. APPLICABILITY AND ENROLMENT

(a) To all B. Tech (Regular and Lateral Entry) students admitted in Engineering & Technology.
(b) The department offering Honors shall have at least one M. Tech in concerned stream, for B. Tech (Honors) registration.

(c) Total number of seats offered for Honors programme shall be a maximum of 35% of sanctioned intake of major degree programme.

(d) The allotment of seat into Honors degree is based on the percentage of marks obtained in the major degree programme. Percentage of marks shall be taken up to III semester in case of regular entry students and only III semester in case of lateral entry students.

(e) In the event of any tie during the seat allotment for a Honors degree, the concerned major degree department offering Honors shall conduct a test/interview on the prerequisite subjects of Honors degree and final decision shall be taken.

(f) For applicability of Honors degree, both regular B Tech and Honors degree courses shall be successfully completed.

(g) A student shall report to the concerned Principal of the college, if he/she is not interested to pursue/continue the Honors degree programme.

(h) Transfer of credits from a particular Honors to regular B. Tech or another major degree and vice-versa shall not be permitted.

IV. ENTRY LEVEL

(a) The B. Tech students (both Regular and Lateral Entry) pursuing a major degree program can register for Honors degree at their choice in any same department offering major degree from III semester onwards

(b) Students registering for Honors degree shall select the subjects from same branches/department based on the recommendations of BOS committee. For example, a student pursuing major degree in Electrical & Electronics Engineering shall select subjects in Electrical & Electronics Engineering only and he/she will get major and Honors degree in Electrical & Electronics Engineering

(c) Only those students, who have a CGPA of 8.0 or above, without any backlog, will be permitted to register for Honors degree

(d) Separate grade sheet will be given for the courses registered under Honors.

(e) Students shall not be permitted to register for Honors degree after completion of VI semester.

(f) Students shall be permitted to select a maximum of two subjects per semester from the list of subjects specified for Honors degree.

(g) The students shall complete Honors degree without supplementary appearance

within stipulated period as notified by college exam section for the completion of regular major B. Tech program.

(h) Honors degree shall not be awarded at any circumstances without completing the regular major B. Tech program in which a student got admitted.

(i) If a student is detained due to lack of attendance, he/she shall not be permitted to register the courses for Honors degree.

(j) If a student failed in any registered course of the Honors, he/she shall not be eligible to continue the B. Tech Honors. However, the additional credits and grades thus far earned by the student shall be included in a separate grade sheet.

(k) The subjects completed under Honors degree program shall not be considered as equivalent subjects in case the student fails to complete the major degree program.

(l) Students completed their degree shall not be permitted to register for Honors degree.

V. STRUCTURE OF HONORS IN B. TECH

(a) The student shall earn at least 20 credits for award of Honors degree from same branch/department/discipline registered for major degree.

(b) Students can complete Honors degree courses either in the college or online from platforms like NPTEL/SWAYAM etc.

(c) Of the 20 additional Credits to be acquired, 16 credits shall be earned by undergoing specified courses list in the departments, with four courses, each carrying 4 credits. The remaining 4 credits must be acquired through two NPTEL, which shall be domain specific, each with 2 credits and with a minimum duration of 8/12weeks as recommended by the Board of studies.

(d) The overall attendance in each semester of regular B. Tech courses and Honors degree courses shall be computed separately.

(e) A student shall maintain an overall attendance of 75% in all registered courses of Honors to be eligible for attending semester end examinations. However, condonation for shortage of attendance between 65-75% may be given as per norms. On the recommendations of College Academic Council, the student concerned will be permitted to take the semester end examinations, on payment of condonation fee of Rs. 500/-.

(f) Student having less than 65% attendance in Honors courses shall not be permitted for semester end examinations.

(g) A student detained due to lack of attendance in regular B. Tech program shall not be permitted to continue Honors program.

(h) The teaching, examinations (internal and external) and evaluation procedure of Honors degree courses offered in offline is similar to regular B. Tech courses

(i) Students may choose theory or practical courses to fulfil the minimum credit requirement.

(j) Students shall be allowed to take maximum two subjects per semester pertaining to their Honors degree.

(k) The students registered for Minor shall not be permitted to register for B. Tech (Honors).

VI. CREDITS REQUIREMENT

(a) A student will be eligible to get B. Tech (Honors), if he/she completes an additional 20 credits. These may be acquired either in offline or online like NPTEL/SWAYAM.

(b) The colleges offering Honors degree courses shall be ready to teach the courses in offline at the college in the concerned departments. Curriculum and the syllabus of the courses shall be approved by the Board of Studies.

(c) The online NPTEL/SWAYAM subjects selected by a student shall be approved by concerned BOS. The duration of courses shall be a minimum of 8/12 weeks.

(d) The assessment and certification of the NPTEL shall be as per the prescribed norms of the NPTEL.

(e) Students shall produce a certificate issued by the NPTEL/SWAYAM conducting agency as a proof of credit attainment.

(f) The teaching and evaluation procedure of Honors courses offering in offline mode shall be similar to that of regular B. Tech courses

(g) After successful completion of all Honors degree courses, the students will be awarded B. Tech (Honors).

(h) If a student fails to complete a course offered in online/offline, he/she will not be permitted to continue the Honors degree.

VII. PROCEDURE TO APPLYING FOR HONORS DEGREE

(a) The department offering the Honors will announce courses required before the start of the session.

(b) The interested students shall apply for the Honors course to the HOD of the concerneddepartment

(c) The concerned department will announce the list of the selected students for the Honors.

(d) The whole process should be completed within one week before the start of every session.

(e) Selected students shall be permitted to register the courses for Honors degree.

VIII.   JOINING IN HONORS COURSES IN B. TECH

(a) Each department offering the Honors degree shall submit the final list of selected students to the Principal.

(b) The selected students shall submit a joining letter to the Principal through the concerned HOD.

(c) The department offering Honors shall maintain the record of student pursing the Honors degree.

(d) With the approval of Principal and suggestion of advisor/mentor, students can choose courses from the approved list and shall register the courses within a week as per the conditions laid down in the structure for the Honor degree.

(e) Each department shall communicate the Honors courses registered by the students to the timetable drafting committee and accordingly the timetable will be drafted. Timetable drafting committee shall see that there is no clash in timetables.

(f) If the student wishes to withdraw/change the registration of subject/course, he/she shall inform the same to advisor/mentor, subject teacher, HODs of Honors department and parent department and Principal within two weeks after registration of the course.

IX.   PROCEDURE FOR MONITORING THE PROGRESS OF THE SCHEME

The students enrolled in the Honor courses will be monitored continuously at par with the prevailing practices and examination standards. An advisor/mentor from parent department shall be assigned to a group of students to monitor the progress.

X. ALLOCATION OF SEATS FOR HONORS DEGREE

(a) The college will notify the number of the seats for Honors degree in each department well in advance before the start of the semester.

(b) Total number of seats offered for Honors degree shall be a maximum of 35% of sanctioned intake of major degree program.

(c) Each department of concerned institute will notify the seats for the Honors well before the start of each session as per the following Table

S. No	Name of the course	Sanction seats of major degree program	Seats offered for Honors	Courses offered	Credits for each course

XI. COURSE FEES FOR REGISTRATION OF SUBJECTS IN MAJOR DEGREE

There is no fee for registration of subjects for major degree program offered in offline at the respective colleges.

XII. EXAMINATIONS

(a) The examination for the Honors degree courses offered in offline shall be conducted along with regular B. Tech program.

(b) The examinations (internal and external) and evaluation procedure of Honors degree courses offered in offline is similar to regular B. Tech courses.

(c) A separate transcript shall be issued for the Honors subjects passed in each semester.

(d) There is no supplementary examination for the failed subjects in a Honors degree program.

XIII. EXAMINATION FEES

Examination Fees will be as per the norms of college.

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APPENDIX – III

Guidelines for B. Tech Minor Degree in Engineering

(Applicable from the Academic Year 2019-20 (AR19) and Academic Year 2020-21 (AR20))

I. INTRODUCTION

Looking to global scenario, engineering students should have knowledge of subjects from other branches and some advanced subjects of their respective branch in which they are perusing the degree. To complement the same, the College has decided to take an initiative from 2020-21 in academics by introducing minor to the undergraduate students enrolled in the B. Tech. This gives a provision to the students to pursue minor other than the discipline in which student got admitted. An aspiring student can choose the courses and laboratories in any other discipline and can get a minor in the chosen specialization in addition to regular major B. Tech degree. This way undergraduates are not restricted to learn about courses only in the discipline they get admitted to but can choose courses of their interest to later on take up a career path of their liking. The students taking up a minor course will get additional credits. A student has to acquire 20 more credits, in addition to 160 credits required, for the award of the minor. The department concerned will determine the required courses for award of minor. The subjects in minor program would be a combination of mostly core and some electives.

II. OBJECTIVES

The objectives of initiating the minor certification are:
(a) To diversify the knowledge of the undergraduates.
(b) To make the undergraduates more employable.
(c) To have more educational and professional skills after the completion of his undergraduate courses.
(d) To give a scope to specialize students in other streams of engineering in addition to theones they are currently pursuing.

III. APPLICABILITY AND ENROLMENT

(a) To all B. Tech (Regular and Lateral Entry) students admitted in Engineering & Technology

(b) There shall be no limit on the number of programs offered under Minor. The minor programs in emerging technologies based on expertise in the respective departments may be offered and minor can also be offered in collaboration with the relevant industries/agencies.

(c) Total number of seats offered for a minor program shall be a maximum of 35% of sanctioned intake of major degree program.

(d) If a minimum enrolments criterion is not met, then the students may be permitted to register for the equivalent MOOC courses as approved by the concerned Head of the department in consultation with Board of Studies.

(e) The allotment of seat into minor is based on the percentage of marks obtained in the major degree program. Percentage of marks shall be taken up to III semester in case of regular entry students and only III semester in case of lateral entry students.

(f) In the event of any tie during the seat allotment for a minor, the concerned major degree department offering minor shall conduct a test/interview on the prerequisite subjects of minor and final decision shall be taken.

(g) For applicability of minor, both regular B Tech and minor courses shall be successfully completed.

(h) A student shall report the concerned Principal of the college if he/she is not interested to pursue/continue the minor program.

(i) Transfer of credits from a particular minor to regular B. Tech or another major degree and vice-versa shall not be permitted.

IV. **ENTRY LEVEL**

(a) The B. Tech students (both Regular and Lateral Entry) pursuing a major degree program can register for minor at their choice in any other department offering minor from IV semester onwards.

(b) Students registering for minor shall select the subjects from other branches. For example, a student pursuing major degree in Electrical & Electronics Engineering shall select the subjects specified for minor in Civil Engineering and he/she will get major degree of Electrical & Electronics Engineering with minor of Civil Engineering.

(c) Student pursuing major degree in any engineering branch is eligible to register for minor in any other engineering branch. However, students pursuing major degree in

a particular Engineering are not allowed to register for minor in the same engineering branch.

(d) Only those students, who have a CGPA of 7.75 or above, without any backlog, will be permitted to register for a minor.

(e) Separate grade sheet will be given for the courses registered under minor.

(f) Students shall not be permitted to register for minor after completion of VI semester.

(g) Students shall be permitted to select a maximum of two subjects per semester from the list of subjects specified for minor.

(h) Minor shall not be awarded at any circumstances without completing the regular major B. Tech program in which a student got admitted.

(i) If a student is detained due to lack of attendance, he/she shall not be permitted to register the courses of minor.

(j) If a student failed in any registered course of the minor, he/she shall not be eligible to continue the B.Tech minor. However, the additional credits and grades thus far earned bythe student shall be included in separate grade sheet.

(k) The subjects completed under minor program shall not be considered as equivalent the subjects in case the student fails to complete the major degree program.

(l) Students who completed their degree shall not be permitted to register for minor.

V. STRUCTURE OF MINOR IN B. TECH

(a) The student shall earn at least 20 credits for award of minor from other branch/department/discipline registered for major degree.

(b) Students can complete minor courses either in the college or in online from platforms like NPTEL/SWAYAM etc.

(c) The overall attendance in each semester of regular B. Tech courses and minor courses shall be computed separately.

(d) A student shall maintain an overall attendance of 75% in all registered courses of minor to be eligible for attending semester end examinations. However, condonation for shortage of attendance between 65-75% may be given as per norms. On the recommendations of College Academic Council, the student concerned will be permitted to take the semester end examinations, on payment of condonation fee of Rs. 500/-.

(e) Student having less than 65% attendance in minor courses shall not be permitted for end semester examinations.

(f) A student detained due to lack of attendance in regular B. Tech program shall not be permitted to continue minor program.

(g) The teaching, examinations (internal and external) and evaluation procedure of minor courses offered in offline is similar to regular B. Tech courses

(h) The students may choose theory or practical courses to fulfil the minimum credit requirement.

(i) The students may be allowed to take maximum two subjects per semester pertaining to their minor.

(j) The students are permitted to opt for only a single minor course in his/her entire tenure of B. Tech (Engineering)

(k) The students registered for B. Tech (Hons) shall not be permitted to register for minor.

(l) The student is not permitted to take the electives courses from the parent department fulfil the minimum credit requirement.

VI.   CREDITS REQUIREMENT

(a) A Student will be eligible to get minor along with major degree engineering if he/she completes an additional 20 credits. These may be acquired either in offline or online like NPTEL/SWAYAM.

(b) Of the 20 additional credits to be acquired, 16 credits shall be earned by undergoing specified courses of minor, with four courses, each carrying 4 credits. The remaining 4 credits must be acquired through two NPTEL, which shall be domain specific, each with2 credits and with a minimum duration of 8/12 weeks as recommended by the Board of studies.

(c) The colleges offering minor courses shall be ready teach the courses in offline at their college in the concerned departments. Curriculum and the syllabus of the courses shall beapproved by the Board of Studies.

(d) The online NPTEL/SWAYAM subjects selected by a student shall be approved by concerned BOS. The duration of courses shall be a minimum of 8/12 weeks.

(e) The teaching and evaluation procedure of minor courses offering in offline mode shall be similar to that of regular B. Tech courses

(f) Students shall produce a certificate issued by the NPTEL/SWAYAM conducting

agency as a proof of credit attainment.

(g) The assessment and certification of the NPTEL shall be as per the prescribed norms of the NPTEL.

(h) After successful completion of all minor courses, the student will be awarded with minor degree.

(i) If a student fails to complete a course offered in online/offline, he/she will not bepermitted to continue the minor.

VII.   PROCEDURE TO APPLYING FOR THE MINOR

(a) The department offering the minor will announce specialization and courses before thestart of the session.

(b) The interested students shall apply through the HOD of his/her parent department.

(c) The concerned department will announce the list of the selected students for the minor.

(d) The whole process should be completed within one week before the start of everysession.

(e) Selected students shall be permitted to register the courses for minor.

VIII. REGISTERING FOR MINOR COURSES

(a) Each department offering the minor will submit the final list of selected students to the Principal.

(b) The selected students shall submit a joining letter to the Principal through the concerned HOD offering the minor. The student shall inform same to the HOD of his/her parent department.

(c) Both parent department and department offering minor shall maintain the record of student pursing the minor

(d) With the approval of Principal and suggestion of advisor, students can choose courses from the approved list and shall register the courses within a week as per the conditions laid down in the structure for the minor.

(e) Each department shall communicate the minor courses registered by the students to the time table drafting committee and accordingly time table will be drafted. Timetable drafting committee shall see that there is no clash in time tables.

(f) If the student wishes to withdraw/change the registration of subject/course, he/she

shall inform the same to advisor, subject teacher, HODs of minor department and parent department and Principal within two weeks after registration of the course.

IX. PROCEDURE FOR MONITORING THE PROGRESS OF THE SCHEME

The students enrolled in the minor courses will be monitored continuously at par with theprevailing practices and examination standards. An advisor/mentor from parentdepartment shall be assigned to a group of students to monitor the progress.

X.   ALLOCATION OF SEATS FOR MINOR

(a) The college will notify the number of the seats for minor in the concerned department well in advance before the start of the semester.

(b) Total number of seats offered for a minor program shall be a maximum of 35% of sanctioned intake of major degree program.

(c) The list of the elective for minor will be offered from the list of running majors in the concerned subjects. Each department of concerned institute will notify the seats for the minor well before the start of each session as per the following Table.

S. No	Name of the course	Sanction seatsof major degree program	Seats offered for minor	Courses offered	Credits for each course

XI. COURSE FEES FOR REGISTRATION OF SUBJECTS IN MINOR DEGREE

There is no fee for registration of subjects for minor degree program offered in offline at the respective colleges.

XII. EXAMINATIONS

(a) The examination for the minor courses offered in offline shall be conducted along with regular B. Tech program.

(b) The examinations (internal and external) and evaluation procedure of minor courses offered in offline is similar to regular B. Tech courses.

(c) A separate transcript shall be issued for the minor subjects passed in each semester.

(d) There is no supplementary examination for the failed subjects in a minor program.

XIII. EXAMINATION FEES

Examination Fees will be as per the norms of college.

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Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956

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Website: www.aec.edu.in

Date: 18/01/2023

CREDIT TRANSFER FOR THE SKILL - ORIENTED COURSES

As per the orders of Affiliating University JNTUK dated 17-01-23 regarding credit transfer for the Skill-oriented Courses, all the students studying the Skill oriented courses/ Job oriented Courses under AR20 B.Tech Regulations are hereby informed that the certifications completed through NASSCOM/NPTEL/L&T/any other Industry shall be considered as skill-oriented courses of the curriculum and are facilitated with credit transfer. However, the students should avoid the courses already pursued or offered through the curriculum as it may otherwise lead to duplication and repetition of the same course.

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