

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD, TELANGANA.**

Academic Regulations for B. Tech. with Honors program

1. Objectives

The key objectives of offering B. Tech. with Honors program are:

- To expand the domain knowledge of the students laterally and vertically.
- To increase the employability of undergraduate students with expanded knowledge in one of the core Engineering disciplines.
- To provide an opportunity to students to pursue their higher studies in wider range of specialisations.

2. Academic Regulations for B. Tech. Honours degree

- 1) The weekly instruction hours, internal & external evaluation and award of grades are on par with regular 4-Years B. Tech. program.
- 2) For B. Tech with Honors program, a student needs to earn additional 20 credits (over and above the required 160 credits for B. Tech degree). The broad guidelines for the courses of Honours program, their respective credits weightage and semester-wise break-up of the course are enclosed as Annexure. All these 20 credits need to be completed in III year and IV year only.
- 3) After registering for the Honours programme, if a student is unable to pass all courses in first attempt and earn the required 20 credits, he/she shall not be awarded Honours degree. However, if the student earns all the required 160 credits of B. Tech., he/she will be awarded only B. Tech degree in the concerned branch.
- 4) There is no transfer of credits from courses of Honours program to regular B. Tech. degree course & vice versa.
- 5) These 20 credits are to be earned from the additional courses offered by the host department in the college or from a closely related departments in the college as well as from the MOOCS platform.
- 6) For the courses selected under MOOCS platform following guidelines may be followed:

- a) Prior to registration of MOOCS courses, formal approval of the courses, by the University is essential. University before the issue of approval considers the parameters like the institute / agency which is offering the course, syllabus, credits, duration of the programme and mode of evaluation etc.
- b) Minimum credits for a MOOCS course must be equal to or more than the credits specified in the Honours course structure provided by the University.
- c) Only Pass-grade/marks or above shall be considered for inclusion of grades in the Honours grade memo.
- d) Any expenses incurred for the MOOCS courses are to be met by the students only.
- 7) The choice to opt/take the Honours program is purely on the choice of the students.
- 8) The student shall be given a choice of withdrawing all the courses registered and/or the credits earned for Honours program at any time; and in that case the student will be awarded only B. Tech. degree in the concerned branch on earning the required credits of 160.
- 9) The students of every branch can choose Honours program in their respective branches if they are eligible for the Honours program. A student who chooses an Honours program is not eligible to choose a Minor program and vice-versa.
- 10) The B. Tech. with Honours program shall be offered from the AY 2021-22 onwards. The students who are pursuing their III year I semester in the current academic year can register for the Honours program if they fulfil the eligibility criteria.
- 11) A student can graduate with Honours if he/she fulfils the requirements for his/her regular B. Tech. program as well as fulfils the requirements for Honours program.
- 12) The institute shall maintain a record of students registered and pursuing their Honours programs branch-wise. The same report needs to be sent to the University once the enrolment process is complete.
- 13) The department shall prepare the time-tables for each Honours program offered at their respective departments without any overlap/clash with other courses of study in the respective semesters.

3. Eligibility conditions of the students for the Honours degree

- a) A student can opt for B.Tech. degree with Honours, if she/he passed all subjects in first attempt in all the semesters till the results announced and maintaining 7.5 or more CGPA.

- b) If a student fails in any registered course of either B. Tech. or Honours in any semester of four years program, he/she will not be eligible for obtaining Honors degree. He will be eligible for only B. Tech. degree
- c) Prior approval of mentor and Head of the Department for the enrolment into Honours program, before commencement of III year I Semester (V Semester), is mandatory.
- d) If more than 30% of the students in a branch fulfil the eligibility criteria (as stated above), the number of students given eligibility should be limited to 30%. The criteria to be followed for choosing 30% candidates in a branch may be the CGPA secured by the students till II year I semester.
- e) The department concerned should be preferably NBA accredited and shall offer at least one M. Tech. Program.
- f) Successful completion of 20 credits earmarked for honours program with atleast 7.5 CGPA along with successful completion of 160 credits earmarked for regular B. Tech. Program with at least 7.5 CGPA and passing all subjects in first attempt gives the eligibility for the award of B. Tech. (Honors) degree.
- g) For CGPA calculation of B. Tech. course, the 20 credits of Honours program will not be considered.

4. Registration for the course in Honors program

- a) At the beginning of each semester, just before the commencement of classes, students shall register for the courses which they wish to take in that semester.
- b) The students should choose a course from the list against each semester (from Honours course structure) other than the courses they have studied/registered for regular B.Tech. programme. No course should be identical to that of the regular B. Tech. course. The students should take the advice of faculty mentors while registering for a course at the beginning of semester.
- c) The maximum No. of courses for the Honours is limited to two (three in case of inclusion of lab) in a semester along with regular semester courses.
- d) The registration fee to be collected from the students by the College is **Rs. 1000/-** per one credit.
- e) A fee for late registration may be imposed as per the norms.

ANNEXURE

Academic Regulations for Honors degree in B. Tech. programs

S. No.	Year / Semester	Course to be chosen from/ studied	Mode of Learning	No. of Credits
1	III-1	PE-1 or PE-2	Blended/Conventional	3
2	III-2	Research Methodologies	Conventional	3
3	III-2	PE-3	Conventional	3
4	IV-1	PE-4	Conventional	3
5	IV-1	PE-5	conventional	3
6	IV-2	Technical Paper writing	Under the mentorship of a supervisor	2
7	IV-2	PE-6 or an Interdisciplinary subject as suggested by University	MOOCS	3
Total Credits				20

Note:

- i. Professional Elective (PE) course should be selected (which is not studied) from each Professional Electives list provided in regular B. Tech. course.
 - ii. Courses can be chosen as in above table.
1. Technical paper writing:
 - a) The student shall take up a problem/topic of engineering branches (inter-disciplinary nature) and apply the knowledge which they acquired while pursuing their engineering branch. It is expected to analyse, design and develop an application for the identified problem and write a technical paper/document.
Alternatively, the student i) shall identify a research topic, analyse the problem, carryout the experiments, write a technical paper and publish in /communicate for a Scopus indexed journal/any journal with decent reputation or ii) Demonstrate a talent/an idea/development of an innovative product.
 - b) The evaluation shall be done by the same committee which is constituted for project evaluation, along with the final semester project work.
 - c) The students should start exploration for the Technical Paper Writing immediately after the semester exams of III-II semester. Only the evaluation part shall be carried in IV-II semester.
 2. The institute shall offer a course on Research Methodologies by combining the students of all branches (if the number of students is more, multiple parallel sessions may be conducted). The time slots in the time-tables of respective branches should be aligned. The external evaluation of Research Methodologies course shall be done by the University.
 3. If the blended course option is chosen, for the subject in III-I semester, the learning should be partially in online mode and partially in offline mode. The external evaluation shall be done by the University; however, for the internal evaluation component, online assessment should also be taken into account while finalising the internal marks by the course teacher.

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RESEARCH METHODOLOGIES

Prerequisite: None

Course Objectives:

- To understand the research problem
- To know the literature studies, plagiarism and ethics
- To get the knowledge about technical writing and induce paper publication skills

Course Outcomes: Gain the sound knowledge of the following important elements:

- Distinguish research methods
- Carryout literature review thoroughly to identify contemporary research problems
- Data collection and analysis
- Write and publish a technical research paper
- Review papers effectively

UNIT - I

INTRODUCTION:

Objective of Research; Definition and Motivation; Types of Research; Research Approaches; Steps in Research Process; Criteria of Good Research.

UNIT - II

RESEARCH FORMULATION AND LITERATURE REVIEW:

Problem Definition and Formulation; Literature Review; Characteristics of Good Research Problem; Literature Review Process; Plagiarism, Ethics in Research.

UNIT - III

DATA COLLECTION:

Primary and Secondary Data; Primary and Secondary Data Sources; Data Collection Methods; Data Processing; Classification of Data.

DATA ANALYSIS:

Statistical Analysis; Multivariate Analysis; Correlation Analysis; Regression Analysis; Principle Component Analysis; Samplings

UNIT - IV

RESEARCH DESIGN:

Need for Research Design; Features of a Good Design; Types of Research Designs; Induction and Deduction.

HYPOTHESIS FORMULATION AND TESTING:

Hypothesis; Important Terms; Types of Research Hypothesis; Hypothesis Testing; Z-Test; t-Test; f-Test; Making a Decision; Types of Errors; ROC Graphics.

UNIT - V

PRESENTATION OF THE RESEARCH WORK:

Business Report; Technical Report; Research Report; General Tips for Writing Report; Presentation of Data; Oral Presentation; Bibliography and References; Intellectual Property Rights; Open-Access Initiatives; Plagiarism.

TEXT BOOKS:

1. Research Methodology. Methods & Technique: Kothari. C.R.
2. Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science & engineering students"

REFERENCES:

1. Practical Research: planning and Design (8th Edition) – Paul D. Leedy and Jeanne E. Ormrod.
2. A Hand Book of Education Research – NCTE
3. Methodology of Education Research – K.S. Sidhu.
4. Tests, Measurements and Research methods in Behavioural Sciences- A.K. Singh.
5. Statistical Methods- Y.P. Agarwal.
6. Methods of Statistical Ananalysis- P.S Grewal.
7. Fundamentals of Statistics – S.C. Gupta, V.K. Kapoor.
8. Intellectual Property Rights by Deborah E. Bouchoux, Cengage Learning.
9. Managing Intellectual Property – The Strategic Imperative, Vinod V.Sople, 2nd Edition, PHI Learning Private Limited.
10. Research methodology – S.S. Vinod Chandra, S. Anand Hareendran