Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1 Average percentage of students from other States and Countries during the last five years

Response: 0.38

2.1.1.1 Number of students from other states and countries year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
06	05	05	02	05

File Description	Document
List of students (other states and countries)	View Document
Institutional data in prescribed format	View Document
Any additional information	View Document

2.1.2 Average Enrollment percentage (Average of last five years)

Response: 35.49

2.1.2.1 Number of students admitted year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
184	312	265	316	371

2.1.2.2 Number of sanctioned seats year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
816	816	816	816	816

File Description	Document
Institutional data in prescribed format	View Document

2.1.3 Average percentage of seats filled against seats reserved for various categories as per

applicable reservation policy during the last five years

Response: 69.26

2.1.3.1 Number of actual students admitted from the reserved categories year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
180	281	265	316	371

File Description	Document
Institutional data in prescribed format	[View Document](#)

2.2 Catering to Student Diversity

2.2.1 The institution assesses the learning levels of the students, after admission and organises special programs for advanced learners and slow learners

Response:

The college arranges Orientation Program for the parents and students admitted into first year of all streams before the commencement of the classes regarding facilities, faculty expertise, rules and regulations of the college and also shares information regarding affiliating University.

The students and parents are encouraged to express their expectations and elicit other information during the program and to provide a platform to access the stream line of activities of the course and act accordingly. The requirements of students are identified and addressed at the earliest by way of adopting strategic approach that involves bridge programs, Communication skills, Personal development and Motivational sessions. The Institution has a working mechanism which continuously monitors and evaluates the students.

The capabilities of the students are categorized into slow learners and advanced learners basing on their performance in class room discussions, class room seminars, class committee meetings and class tests.

The advanced learners of the college are promoted:

- In addition to the regular material, add-on materials also provided.
- Encouraged to write research articles and paper presentations.

- Peer teaching and group presentations are encouraged by teachers.
- Given the lead role to plan and organize fests/events, departmental seminars / conferences which gives them an opportunity to interact with the academia and industry experts.
- They are well groomed to represent the college during seminars, paper presentations and student fests organized by other colleges.
- Providing books, e-Resources readily available and accessible in digital library for better understanding of critical and advanced concepts.
- Offering special coaching for examinations like CAT, MAT, TOEFL, IELTS, GRE, GATE, PGECET, AMCAT and COCUBES.
- Encouraged to take up the certification courses.
- The Institution established Entrepreneurship Development Cell to encourage the advanced learners to become an entrepreneur.
- Students are encouraged by awards and rewards for their meritorious performance.
- Additional reference books are issued from library on recommendation of HODs.

Initiative programs for Assisting slow learners:

- Identifying the academically weak students based on their classroom performance, students are divided into groups and counselors (faculty members) are assigned to each group right from first year to final year.
- The counselors provide requisite guidance and assistance by way of arranging specially designed notes, video lectures and personal attention drawn by the faculty concerned.
- Remedial classes are conducted in subjects where failures are more in external examinations.
- An awareness is created in parents about remedial actions.
- Apart from the conventional teaching, the students are taught with the modern teaching aids like LCD, working models, posters, simulations etc.
- They are provided with question banks, course materials, model question papers and e-books. Bridge courses are arranged for the lateral entry students in the II year to cope up with regular students.

2.2.2 Student - Full time teacher ratio

Response: 9.62

2.2.3 Percentage of differently abled students (Divyangjan) on rolls

Response: 0

2.2.3.1 Number of differently abled students on rolls

File Description	Document
Institutional data in prescribed format	[View Document](#)

2.3 Teaching- Learning Process

2.3.1 Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences

Response:

Faculty members are shifting the focus to a student centric learning process in place of conventional teaching-learning process of transferring the knowledge to students through classroom lectures. The focus is on knowledge transfer and learning through students active participation and involvement. The faculty provides a platform to the students for exploring independently, learning through self study / guides them to develop effective and life long skills.

- **Active learning:**

The faculty adopt active learning by involving students in the learning process more directly through the activities like extra knowledge sharing, group discussions, mini projects, power point presentations, case studies and simulations on technical content.

- **Collaborative Learning:**

This is implemented by forming student groups who motivate themselves to have combined study among them. These groups are also motivated to take group wise challenging assignments, inter departmental projects, various projects expos.

- **Inquiry-based Learning:**

Students are encouraged to search and make use of resources (internet) beyond the classroom for investigation of open questions/problems for developing their critical thinking and increasing understanding levels by conducting review of research papers, surveys etc.

- **Cooperative Learning:**

The faculty focus on cooperative learning methodologies. Students work together to maximize their own and each other's learning in student chapters and also while performing various activities using think-pair-share, round table techniques, etc.

- **Problem based Learning:**

In projects/competitions, participating students are assigned different tasks, assignments, portfolios, activities in which students engage in complex, challenging problems and collaboratively work towards their solutions by using inter-disciplinary knowledge such as design and implementation of Software/Apps, Design and building Robots etc.

- **Experiential Learning:**

Field based experiential learning like Internship, service learning and class based experiential learning like

seminars, case studies, simulation, labs and presentations are practiced.

- **Project based Learning:**

Students work on application of theory learned through projects/model building/simulation in the form of design and fabrication of some systems. It helps to bridge the gap between theoretical concepts and its practical applications. The effective phases of survey, case study, implementation, testing and report writing ensure the required project–based learning among the students. Some subjects are gained through implementation of mini-projects.

- **Experimental Learning:**

The faculty members maintain foster learning environment by engaging in rich experiential content of teaching through experimentation, demonstration, visual aids, periodical industrial visits, organizing exhibitions as well as presenting papers. Usually, students present seminars on contemporary topics as well as state-of-the-art technologies.

2.3.2 Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc.

Response: 99.16

2.3.2.1 Number of teachers using ICT

Response: 118

File Description	Document
List of teachers (using ICT for teaching)	[View Document](#)
Provide link for webpage describing the " LMS/ Academic management system"	[View Document](#)

2.3.3 Ratio of students to mentor for academic and stress related issues

Response: 9.31

2.3.3.1 Number of mentors

Response: 123

File Description	Document
Any additional information	[View Document](#)

2.3.4 Innovation and creativity in teaching-learning

Response:

Creativity and innovation bring about interest and motivation to learners as well as trainees, which eventually lead to learning approach. Perhaps the simplest way to transform a class in a powerful way is to adopt active learning strategies that get students working with course material in the classroom either individually or in groups. Active learning strategies unlike open class discussions are timed, structured and designed to give students a chance to learn by implementing on a specific piece of content in a specific way.

Students learn material better when they are engaged actively rather than absorb it passively. The Institution introduced e-learning platforms to facilitate independent learning where students can access online courses to enhance the spirit of learning on advanced concepts. Thus e-learning platforms bridge the gap between classroom learning and advanced learning.

Teaching–learning is a phenomenon where the teacher and the student are learning. Through this method, the teacher is refining his/ her subject knowledge and effective teaching skills, where as the student finds it easier to understand the subject and its application. Our teaching faculty endeavor is to follow this method meticulously so that both the participants get benefited and value addition to their efforts.

Traditional teaching has been replaced with more innovative and creative ways of disseminating, sharing and facilitating knowledge with students. As both of them are involved with commitment through this method, an interest has been created in the student and the teacher to encourage the student to come out with new and innovative ideas. This method also motivates both the teacher and the learner.

The faculty find out innovative learning ways by using teaching aids to encourage the students' involvement. In this endeavor, our faculty demonstrate live/practical/ day-to-day example to discuss any topic, along with technology. This teaching-learning innovative methods would certainly encourage the students to raise questions and get answers to their queries with working model development. This kind of method would certainly enhance their innovative skills and creative ideas.

The following are the technologies and facilities for effective teaching and learning:

- All the Departments are well equipped with ICT-enabled facilities for teaching.
- E-Library resources and online content are used by teachers where the courses need updated information.
- Direct interaction facility with industrial experts.
- Periodical industrial visits.
- Industrial internships in renowned industries.
- Training / Certification programs are provided in every semester on latest trends.
- Real time projects and internship programs are provided to faculty and students.
- Organizing as well as attending workshops and symposiums.
- Guest lectures / seminars / workshops on advanced topics are organized by inviting experts /

resource persons for the benefit of student and faculty.
* Presentations of a particular topic to fellow students.
* Encouraging paper presentations with the academic support and guidance of the faculty at college level, University level and national level conferences.

* Conducting weekend seminars and working model presentations.

2.4 Teacher Profile and Quality

2.4.1 Average percentage of full time teachers against sanctioned posts during the last five years

Response: 99.25

File Description	Document
Year wise full time teachers and sanctioned posts for 5 years	View Document
List of the faculty members authenticated by the Head of HEI	View Document

2.4.2 Average percentage of full time teachers with Ph.D. during the last five years

Response: 16.17

2.4.2.1 Number of full time teachers with Ph.D. year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
14	16	21	22	19

File Description	Document
List of number of full time teachers with PhD and number of full time teachers for 5 years	View Document
Any additional information	View Document

2.4.3 Teaching experience per full time teacher in number of years

Response: 16.04

2.4.3.1 Total experience of full-time teachers

Response: 1908.6

File Description	Document
Any additional information	[View Document](#)

2.4.4 Percentage of full time teachers who received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the last five years

Response: 69.44

2.4.4.1 Number of full time teachers receiving awards from state /national /international level from Government recognised bodies year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
12	10	16	14	28

File Description	Document
Institutional data in prescribed format	[View Document](#)
e-copies of award letters (scanned or soft copy)	[View Document](#)

2.4.5 Average percentage of full time teachers from other States against sanctioned posts during the last five years

Response: 12.85

2.4.5.1 Number of full time teachers from other states year-wise during the last five years

2018-19	2017-18	2016-17	2015-16	2014-15
20	17	14	9	14

File Description	Document
List of full time teachers from other state and state from which qualifying degree was obtained	[View Document](#)
Any additional information	[View Document](#)

2.5 Evaluation Process and Reforms

2.5.1 Reforms in Continuous Internal Evaluation(CIE) system at the institutional level

Response:

The MESis an affiliated institution of JNTUK and follows the evaluation norms of the University. The University has adopted major reforms in evaluation by introducing Credit Based Grading System from the academic year 2016-17 and the Institution has adopted the same.

The College has its own system of continuous internal evaluation of the students within the frame work of University regulations. There are two stage ,Formative and Summative Assessments put in place as per the instructions of the University.

Formative Assessment:

- The IQAC mandates the teachers to use classroom tests for the evaluation of students.
- The College has the practice of conducting Question-Answer sessions and online assessment evaluate the concept clarity of the students.
- Student Seminars to assess presentation skills and ability to participate.
- Syllabus based quiz to assess the ability to think, connect the concepts and interact with the group.
- Assignments are given regularly to track the student progress.
- Mini-projects for each semester.
- Mock Viva-Voce in laboratories.

Summative Assessment:

Continuous assessment in theory subjects:

- As per the JNTUK regulations, two internal mid-term examinations will be conducted. For UG courses as per R13 regulation, the better performance in either of the examinations is considered for internal marks. As per R16 regulation, the better performance will carry 80% and other one carries 20% of weightage in the total 30 marks allotted for internal tests which include a descriptive examination for 15 marks whereas R19 for 10 Marks and an objective online quiz for 10 marks, 5 marks for Assignments and 70 marks for university semester end examinations.

Continuous assessment in practical subjects:

- There shall be a continuous evaluation during the semester for 25 internal marks and 50 semester end examination marks. Out of the 25 marks for internal, 10 marks for day-to-day work,5 marks for record and 10 marks for internal test conducted by the concerned laboratory teacher. The end examination conducted by the internal teacher and the external examiner by JNTUK.
- For R13, R16 the project marksare considered for maximum of 200 marks out of which 60 marks shall be awarded for internal Evaluation and 140 marks awarded for the End Semester Examination.

Attendance Requirements: student eligible to appear for University examinations if he gets minimum of 75% of attendance in aggregate of all the subjects.

Continuous assessment in projects:

As part of the internal assessment of projects which are done in Final year, college follows the University framework.

- Project Review Committee (PRC) consistsof Head of the Department, Project-In-charge and two senior faculty members for all Departments.
- Students are formed with 4 or 5 students in a group to collect and review the literature on a topic and submit the title with objective, plan of action for the title approval to PRC.
- Project Review Committee assesses and approves projects and Guide is allocated.
- Review meetings are conducted for the continuous assessment.
- The Institution conducts the internal and external examinations as Per JNTUK.

2.5.2 Mechanism of internal assessment is transparent and robust in terms of frequency and variety

Response:

There is complete transparency in the internal assessment. The criterion adopted is as directed by the University.

- Faculty members inform the students about the assessment process at the beginning of the semester.
- The internal assessment test schedules are prepared as per the University calendar and is being communicated to the students well in advance.
- To ensure proper conduct of descriptive tests, invigilators are assigned to each examination hall as per university norms. Evaluation is done by faculty members within three days from the date of examination.
- The evaluated answer scripts at random are verified by the HODs to ensure the standard evaluation process.
- The final evaluated answer papers are distributed to students for verification and verified signature is acknowledged.
- The scripts are submitted to the examination section and entered into JNTUK online server, after rectification of the errors in the presence of departmental staff.
- The marks obtained by the students uploaded in the University web portal and the same is displayed on the department notice board along with their attendance and messages will be sent to the parents.
- Day to day performance of the students is assessed for every experiment which includes regularity, performance, viva-voce and the promptness in submitting the record.
- For laboratory courses, the marks scored by the student for each experiment is indicated in the record. The independent learning, practical approach to the real-time applications is assessed through viva-voce.
- For the quality of the projects, the evaluation is done by Project Review Committee along with the

> project Guides.

- To ensure the transparency and refrain from malpractices, the university has introduced jumbling system for theory end-examinations.
- The end examination for the laboratory and projects shall be conducted by the external examiner appointed by the University in the presence of internal examiner.

2.5.3 Mechanism to deal with examination related grievances is transparent, time-bound and efficient

Response:

The college has a three-level grievance redressal mechanism:

Level 1 - Departmental Level: As per the norms, two mid examinations are conducted in each semester and the answer scripts are evaluated within 2 to 3 days. The Institution allows the students to verify their answer scripts and to have a facility of revaluation on any grievance.

Level 2 –Institutional level:

The Institution appoints an Examination Cell In-charge / Supervisor who monitors all the theory examinations / online, displays schedules and giving instructions to the students, for smooth conduct of JNTUK examinations. If students are facing any problems, they are solved by the Observer appointed by University. The grievances during the conduct of theory examinations shall be attended by the Chief Superintendent, forwarded to the University, if required.

Level 3 –University level:

The grievance redressal at the University level is transparent and time-bound. The University system makes provision for recounting, revaluation and challenge revaluation with a prescribed fee. The queries related to result, printing errors, grace marks etc., are forwarded to the University by the Principal. Any queries of students during online examinations are communicated to the JNTUK immediately to get rectified.

2.5.4 The institution adheres to the academic calendar for the conduct of CIE

Response:

The academic calendar will be decided by the Affiliating University JNTUK, which has to be followed meticulously.

- The Principal and the HODs, together in consultation with faculty, prepare the academic and examination calendar, based on the University calendar incorporating curriculum, co-curricular, extracurricular activities.
- Each department has its own schedule following the university calendar. Faculty plans their lesson plans in compliance with the University academic calendar.
- Academic activities are scheduled in tune with the University calendar at the beginning of academic year.
- The academic year shall be divided into two semesters. The Semester that begins in June shall be called as odd semester and the semester that begins in December is known as even semester.
- The duration of the each Semester consists of registration, teaching, continuous internal evaluation, tests, end semester examination, evaluation, result declaration and vacation.
- First mid term examination shall be conducted for the first half of syllabus and second mid term examinations shall be conducted for the remaining syllabus as per the dates and timetable specified by the University.
- The internal examinations for practical sessions will be conducted before the end of theory examinations.
- The end examination shall be conducted as per the timetable scheduled by the University.
- College should upload the internal marks of theory subjects, laboratory work, mini project, technical seminar, comprehensive viva and main project in the stipulated time given by University.
- For MBA, MCA and M.Tech internal exams video footage and statement of attendance is uploaded on the same day to JNTUK portal for transparency.

2.6 Student Performance and Learning Outcomes

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution are stated and displayed on website and communicated to teachers and students

Response:

The college has clearly stated all the Program Outcomes(POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs) under the supervision of Academic Committee. The faculty, industry and alumni are actively involved in defining program outcomes and program specific outcomes in the college. The outcomes are prepared based on the expected graduate attributes, skills set that the students have to acquire values that they must inculcate for becoming good citizens.

- The affiliating University has defined the course outcomes of each course and printed in the academic regulation books.
- The course outcomes of all the programs are made known to the students and staff by displaying on the website of the college.
- Individual copies of the regulation books are distributed to all the students which contain details of the course outcomes.
- Academic Regulation books are also available in the library for student access. Orientation program for all the new students is conducted every year at the beginning of the academic year to educate about all course outcomes.
- At the beginning of the academic year all the faculty members will prepare the course files and laboratory manuals.

- The course file contains Department vision, mission, course syllabus, course outcomes, individual time table, program objectives, program outcomes, various mapping matrices, unit plan, lesson plan, course plan, unit wise material, direct and indirect assessments and student grading sheets.
- The University has adopted OBE(Outcome Based Education) and the same is being implemented. Program Outcomes (POs) and Course Outcomes (COs) are well defined for each program. This information is shared among all the stake holders. The institution also adopted OBE and articulated its Program outcomes which are given below.
- Engineering knowledge.
- Core Problem analysis.
- Design / development of solutions.
- Carrying investigations of complex problems.

2.6.2 Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the institution

Response:

The various Assessment tools are: Direct Assessment and Indirect Assessment:

Direct Assessment Tools:

- Performance in Mid Examinations: This type of assessment is carried out through the mid examinations which are held twice a semester. Each and every mid examination is focused on attaining the course outcomes. Mid examinations include Descriptive, Online (Quiz) and Assignment.
- Performance in Semester End Examinations: Semester end examinations is a metric for evaluating whether all the Course outcomes are attained or not. It is expected that a student should score at least 40% of Maximum marks for UG and 50% for PG of the course for the attainment of course outcomes.
- Laboratory Tests: Day to day evaluation of student's performance in the laboratories with respect to conduct of various experiments is also taken as criterion for attainment of course outcomes.
- Project Evaluation: Evaluation of the student based on the project work is also taken as an important criterion for attainment of course outcomes.

Indirect Assessment Tools:

- Program Exit Survey: Feedback from the students in the form of Program Exit Survey is conducted at the end of B.Tech / M.Tech / MBA / MCA program to analyze all the program outcomes.
- Program Specific Outcomes: This survey is also conducted at the end of B.Tech / M.Tech / MBA / MCA program to analyze all the program specific outcomes.

Mapping of the COs, POs and PSOs is done in strict compliance with the suggestions given by IQAC. The

creation of a programme mapping allows the faculty to have a clear picture of the outcomes. Programme mapping can help the students to understand how far they have been able to achieve the programme outcomes and it also helps them to do some introspection with regard to their performance. It helps the faculty to understand the gaps in the curriculum and suggest remedial measures.

2.6.3 Average pass percentage of Students

Response: 80.49

2.6.3.1 Total number of final year students who passed the examination conducted by Institution.

Response: 293

2.6.3.2 Total number of final year students who appeared for the examination conducted by the institution

Response: 364

File Description	Document
Institutional data in prescribed format	[View Document](#)
Any additional information	[View Document](#)

2.7 Student Satisfaction Survey

2.7.1 Online student satisfaction survey regarding teaching learning process

Response: