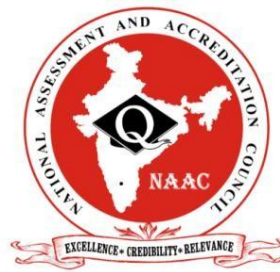# ANNUAL QUALITY ASSURANCE REPORT (AQAR)

## 2017 – 2018

*Submitted to*



## NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission
P. O. Box. No. 1075, Nagarbhavi, Bangalore - 560 072 India

**Submitted by**



## INSTITUTE OF AERONAUTICAL ENGINEERING
**(Autonomous)**

(Approved by AICTE, Programs accredited by NBA, New Delhi and Affiliated to JNTUH, Hyderabad)
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**The Annual Quality Assurance Report (AQAR) of the IQAC**

All NAAC accredited institutions will submit an annual self-reviewed progress report to NAAC, through its IQAC. The report is to detail the tangible results achieved in key areas, specifically identified by the institutional IQAC at the beginning of the academic year. The AQAR will detail the results of the perspective plan worked out by the IQAC. *(Note: The AQAR period would be the Academic Year. For example, July 1, 2012 to June 30, 2013)*

## Part – A

AQAR for the year (for example 2016-17)  :

1. Details of the Institution

| | | | |
|---|---|---|---|
| 1.1 | Name of the Institution | : | **Institute of Aeronautical Engineering** |
| 1.2 | Address Line 1 | : | Dundigal |
| | Address Line 2 | : | Medchal - Malkajgiri Dist. |
| | City/Town | : | Hyderabad |
| | State | : | Telangana |
| | Pin Code | : | 500043 |
| | Institution e-mail address | : | principal@iare.ac.in |
| | Contact Nos. | : | 040-29705852 - 54 <br> 8886234501-02 |
| | Name of the Head of the Institution | : | **Dr. LV Narasimha Prasad** |
| | Tel. No. with STD Code | : | 040-29709851 |
| | Mobile | : | 9703618753, 9490182900 |
| | Name of the IQAC Co-ordinator | : | **Dr. Y Mohana Roopa** |
| | Mobile | : | 9573988829 |
| | IQAC e-mail address | : | **iqac@iare.ac.in** |
| 1.3 | NAAC Track ID | : | TSCOGN23211 |
| 1.4 | NAAC Executive Committee No. & Date: | | EC(SC)/10/A&A/59.1, dated 15-11-2015 |
| 1.5 | Website address | : | https://www.iare.ac.in |
| | Web-link of the AQAR | : | http://www.iare.ac.in/IQAC/AQAR2016-17.doc |

1.6   Accreditation Details                    :

| S No | Cycle | Grade | CGPA | Year of Accreditation | Validity Period |
|------|-------|-------|------|-----------------------|-----------------|
| 1 | 1st Cycle | A | 3.05 | 2015 | 6years |
| 2 | 2nd Cycle | | | | |
| 3 | 3rd Cycle | | | | |
| 4 | 4th Cycle | | | | |

1.7   Date of Establishment of IQAC        :        **10 April, 2014**

1.8   Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((for example AQAR 2010-11submitted to NAAC on 12-10-2011)

   i.    AQAR _____ _____ (DD/MM/YYYY)

   ii.   AQAR_____ _____ (DD/MM/YYYY)

   iii.  AQAR_____ _____ (DD/MM/YYYY)

   iv.   AQAR_____ _____ (DD/MM/YYYY)

   **Not Applicable as First NAAC accreditation was received on 15 November, 2015**

1.9   Institutional Status

   University                              **No**

   Affiliated College                      **Yes**

   Constituent College                     **No**

   Autonomous college of UGC               **Yes**

   Regulatory Agency approved Institution  **Yes** (AICTE)

   Type of Institution                     **It is a Co-education College Rural**

   Financial Status                    :   **Totally Self-financing**

1.10  Type of Faculty/Programme          :   **Engineering and Management**

   Others   (Specify)                   :   --

1.11 Name of the Affiliating University
 (for the Colleges)                                                       :    **Jawaharlal Nehru Technological**
                                                                                  **University Hyderabad (JNTUH),**
                                                                                  **Hyderabad, Telangana**

1.12 Special status conferred by Central/                        :    **UGC, New Delhi**
 State Government-UGC/CSIR/DST/                                       **DST - FIST**
 DBT/ICMR etc Autonomy by State/
 Central Govt /University

## 2.    IQAC Composition and Activities

| | | |
|---|---|---|
| 2.1 | No. of Teachers | **04** |
| 2.2 | No. of Administrative/Technical staff | **04** |
| 2.3 | No. of students | **01** |
| 2.4 | No. of Management representatives | **01** |
| 2.5 | No. of Alumni | **01** |
| 2.6 | No. of any other stakeholder and community representatives | **01** |
| 2.7 | No. of Employers/ Industrialists | **02** |
| 2.8 | No. of other External Experts | **01** |
| 2.9 | Total No. of members | **15** |
| 2.10 | No. of IQAC meetings held | **04** |

2.11  No. of meetings with various stakeholders:

| Number | Faculty | Non-Teaching Staff | Students | Alumni | Others |
|---|---|---|---|---|---|
| **04** | **01** | **01** | **01** | **01** | --- |

2.12  Has IQAC received any funding from UGC during the year?**No**
 If yes, mention the amount

2.13  Seminars and Conferences (only quality related)
 (i) No. of Seminars/Conferences/Workshops/Symposia organized by the IQAC

| Total Nos. | 14 | | |
|---|---|---|---|
| | | | |
| International | National | State | Institution Level |
| --- | **02** | **02** | **10** |

(ii) Themes:

**Quality practices in Teaching-Learning and Research**

- Statistical techniques in research
- Human Values and professional Ethics
- Quality Management
- Advanced Topics in Software Engineering
- Search Engines and Information Retrieval
- Mechanical Design of Robotics System
- Transport Phenomena and Material Processing
- Distributed Generation, Fuel Cells and Renewable Energy Systems
- Electrical Machinery and Electrical Apparatus
- High Voltage and Insulation Technology
- Intelligent control systems
- Power Quality and Electromagnetic Compatibility
- Disaster Prevention and Mitigation
- Architectures, Protocols, and Algorithms to Cope with Mobile & Wireless Networks
- Energy Saving Protocols for Ad hoc and Sensor Networks
- Recent Trends in Mobile and Wireless Applications

2.14    Significant Activities and contributions made by IQAC:

**IQAC has done the following activities:**

- Audit to monitor and ensure the quality of student's activities, department activities and staff members for periodic assessment for performance in academic activities timely, efficient and progressive performance of academic activities.
- Nurturing the entrepreneurial skills of students.
- Initiated a Science & Technology Start-Up Park (STSP), a technology business incubator facility to support start-ups in the areas of different technologies.
- Initiated the Industry-Institute Partnership Centre (IIPC) of the institute is a dedicated to promote the close interaction of industry and various departments of the institute.
- In addition to the regular classes and laboratories the additional practice laboratories are accommodated for technical trainings to the students:
  - METE : Modelling and Experimental Tools in Engineering
  - ATP: Advance Technical Programming Lab
  - Weekly Tests (Sunday Tests) - Danush test (Technical/Aptitude/English)
  - New Research Lab on IoT and Data Analytics
  - Field work/ Internships
  - Oral presentation
  - Technical Seminars/ Symposiums/ Workshops

- ▪ Technical paper presentations/ Group discussions
- ▪ Providing access to e-journals and e-books
- ▪ NPTEL courseware and are accessible online in digital library
- ▪ Subject materials are available in digital form in the institution website
- ➢ Effective content delivery using ICT Tools.
- ➢ Transparent Online Student feedback system.
- ➢ Facilitation and support to the students for their co-curricular activities.
- ➢ Developing the general awareness and communication skill of students.
- ➢ The students and faculty membership subscription of professional bodies is sponsored by the college.
- ➢ The Faculty was encouraged to undertake research at the national and international level by presenting and publishing research papers and also submit research proposals to any funding agencies.
- ➢ The value of green initiatives was highlighted by the IQAC and various drives like Tree plantation, Say No to Plastic and Cleanliness Drives were executed.

2.15  Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year.

| Plan of Action | Achievements |
|---|---|
| Improve the usage of ICT tools in content delivery | • The learning becomes more visualized and interactive.<br>• More than 8000 E-books, Journals, Videos were downloaded and archived in central library for the usage of students and faculty members. |
| Regular Internal Auditing | • IQAC conducts end semester audit on course contents, records and associated files. This process aids to regularise the academic and administrative systems. |
| Transparent Online Student feedback system. | • A systematic and transparent feedback system implemented using ICMS Software.<br>• By this approach, the actual realities of academic and administrative issues are explored.<br>• It is an effective tool for self development and enhancing the skill of faculty members. |
| Facilitation and support to the students for their co-curricular activities. | • Institution laboratory and associated facilities provided to the students during working hours and beyond working hours for their project developments, article preparations etc.,<br>• Financial assistance provided to the faculty, students to attend national and international level skill development programs.<br>• By the above mentioned initiatives, the publications and achievements of students in co-curricular activities increased by 50% than in the previous academic year. |

| Nurturing the entrepreneurial skills of students. | • Dedicated Entrepreneurship Development Cell formed in 2014. It inculcates the entrepreneurial ideas among students. <br> • With the promotion of this Cell, Four of our student projects were shortlisted for SAE India 2018, organized by Aero Design Challenge India |
|---|---|
| Developing the general awareness and communication skill of students. | • In this smart phone era, the reading habit and the eagerness to know about what is happening around the world, is diminishing. To revive that we encourage the students to read newspapers daily and even we allotted a period in a day. <br> • By this approach, the general awareness among students is founds lightly improved and their communication skills enhanced than earlier. |

2.16  Whether the AQAR was placed in statutory body :**Yes**

|  | Yes | No |
|---|---|---|
| Management | ✓ |  |
| Syndicate |  | ✓ |
| Any other body |  | ✓ |

Provide the details of the action taken   :   The Governing Body approved the AQAR for the year 2016-17 for submitting in to NAAC

# Part – B

# CRITERION – I

1. Curricular Aspects

1.1 Details about Academic Programmes

| Level of the Programme | Number of existing Programmes | Number of programmes added during the year | Number of self-financing programmes | Number of value added / Career Oriented programmes |
|---|---|---|---|---|
| PhD | - | - | - | - |
| PG | **7** | Nil | **-** | - |
| UG | **7** | Nil | **-** | - |
| PG Diploma | - | Nil | - | - |
| Advanced Diploma | - | Nil | - | - |
| Diploma | - | Nil | - | - |
| Certificate | - | Nil | - | - |
| Others | - | Nil | - | - |
| **Total** | **14** | - | **-** | - |

1.2 (i) Flexibility of the Curriculum :

CBCS/Core/Elective option / Open options Choice Based Credit System/Core / Professional Elective / Interdisciplinary courses/ Open Electives / MOOC

1. The Institute follows Credit Based System and continuous evaluation following a semester pattern. The undergraduate curriculum for the 2016 batch includes choice based open elective courses.

2. The elective courses are introduced on need basis any time in the curriculum on obtaining academic council approval. Electives are free to be chosen from the list, a student is allowed to take one elective offered by other departments, with the concurrence of the Chairpersons of both the departments.

3. Electives are offered from various streams of engineering. Students are free to select based on their interest. Flexibility in curriculum for students taking internship in various industries.

4. Fast-track courses for project interns at Industry. Various branches of UG students take up this opportunity and student go for internships in reputed companies.

5. Adopting inter-disciplinary and multi-disciplinary approach in planning and designing of curriculum

(ii) Pattern of programmes:The Institution follows semester system for U.G. and P.G. Courses

| Pattern | Number of programmes |
|---|---|
| Semester | 14 (All programs UG and PG) |
| Trimester | Nil |
| Annual | Nil |

1.3   Feedback from stakeholders*        :    Feedback is being obtained from Alumni,
       (On all aspects)                              Parents, Employers and Students

       Mode of feedback                   :    Online

1.4   Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

The regular curricula revision and up gradation takes place at the interval of every 2 years. The Board of Studies (BOS) of the concerned department consists of all the teaching staff play a substantive role in the department.

1.   It is desirable for a candidate to have 100% attendance in each course. In every course (theory/laboratory), student has to maintain a minimum of 75% attendance including the days of attendance in sports, games and NSS activities to be eligible for appearing in Semester End Examination of the course.

2.   Award of additional marks for paper publication, winners in technical, sports and cultural competitions.

3.   Changes in evaluation pattern based on number of theory or tutorial hours.

4.   A candidate shall put in a minimum required attendance at least three (3) theory courses for getting promoted to next higher class / semester. Otherwise, s/he shall be declared detained and has to repeat semester.

5.   A student shall be deemed to have satisfied the minimum academic requirements and earn the credits for each theory course, if s/he secures.

     i. Not less than 35% marks for each theory course in the semester end examination.

     ii. A minimum of 40% marks for each theory course considering both internal and semester end examination.

6.   A student shall be deemed to have satisfied the minimum academic requirements and earn the credits for each Lab / Term Paper / Mini Project / Project, if s/he secures

     i.   Not less than 40% marks for each Lab / Term Paper / Mini Project / Project course in the semester end examination,

     ii.  A minimum of 40% marks for each Lab / Term Paper / Mini Project / Project course considering both internal and semester end examination.

7.  If a candidate fails to secure a pass in a particular course, it is mandatory that she/he shall register and reappear for the examination in that course during the next semester when examination is conducted in that course. It is mandatory that she/he should continue to register and reappear for the examination till s/he secures a pass.

8.  Performances of students in each course are expressed in terms of marks as well as in Letter Grades based on absolute grading system. The UGC recommends a 10-pointgrading system with the following letter grades as given below:

Grade Points Scale (Absolute Grading)

| Range of Marks | Grade Point | Letter Grade |
|---|---|---|
| 100 – 90 | 10 | S (Superior) |
| 89 – 80 | 9 | A+ (Excellent) |
| 79 – 70 | 8 | A (Very Good) |
| 69 – 60 | 7 | B+ (Good) |
| 59 – 50 | 6 | B (Average) |
| 49 – 40 | 5 | C (Pass) |
| Below 40 | 0 | F (Fail) |
| Absent | 0 | AB (Absent) |
| Authorized Break of Study | 0 | ABS |

1.5   Any new Department/Centre introduced during the year.**Yes**

➢   IARE- Business Incubation Centre is an initiative supported by Maruthi Educational Society and MTE Industries, Hyderabad. It aims to nurture technology and knowledge based entrepreneur's right from ideation stage to starting a business venture. The incubation centre will focus (not limited to) on working with the start-ups in the areas of:

Smart Manufacturing Rapid Prototyping Composite material Embedded Systems Internet of Things Agriculture Smart Grid Instrumentation and Sensors Avionics.

➢   The Institute of Aeronautical Engineering, Hyderabad starts a Science & Technology Start-Up Park (STSP), a technology business incubator facility to support start-ups in the areas of information technology, electronics and mechanical engineering enabling "Smart Manufacturing via the Make in India Initiative". It aims at offering students with innovative ideas and an opportunity to become entrepreneurs. Promising candidates, who have exciting ideas, can start right from the first year.

# CRITERION- II

**2.    Teaching, Learning and Evaluation**

2.1    Total No. of permanent faculty         :

| Total | Assistant Professors | Associate Professors | Professors | Others |
|---|---|---|---|---|
| 281 | 198 | 44 | 39 | -- |

2.2    No. of permanent faculty with Ph.D.    :    **58**

2.3    No. of Faculty Positions Recruited (R) and Vacant (V) during the year

| Assistant Professors | | Associate Professors | | Professors | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|
| R | V | R | V | R | V | R | V | R | V |
| 24 | - | 15 | - | 10 | - | - | - | 49 | - |

2.4    No. of Guest and Visiting faculty and Temporary faculty: **02**

2.5    Faculty participation in conferences and symposia:

| No. of Faculty | International level | National level | State level |
|---|---|---|---|
| Attended Seminars/ Workshops | 62 | 221 | 81 |
| Presented papers | 173 | 50 | 0 |
| Resource Persons | 8 | 7 | 21 |

2.6    Innovative processes adopted by the institution in Teaching and Learning:

 ➢   Monitoring Teaching-Learning outcomes through Course Outcomes-Programme Outcomes  and Programme Specific Out comes  based Attainments in Outcome Based Education format

 ➢   Students not only need the knowledge of reading and writing, rather they need to learn fundamental skills like teamwork, problem solving, research gathering, time management, information synthesizing, utilizing high tech tools etc. To improve these

skills different pedagogies and learning techniques are adopted by teachers such as: Audio-Visual Aids, Case Studies, Group Discussions, Problem Solving and Project based learning, Review of Research Papers and Articles, Library related research activities, Experimental learning to reinforce the fundamentals skills of the subjects.

➢ The Institute runs a Science & Technology Start-Up Park (STSP), a technology business incubator facility to support start-ups in the areas of information technology, electronics and mechanical engineering enabling "Smart Manufacturing via the Make in India Initiative". It aims at offering students with innovative ideas and an opportunity to become entrepreneurs. Promising candidates, who have exciting ideas, can start right from the first year.

➢ ICT Integrated Teaching

➢ e-assignments for students

➢ Open Elective System

➢ Blending learning with e-resources through 24X7 available free access to E-Library

➢ Fostering the culture of knowledge acquisition through wider self exposure to latest knowledge through the library and on-line subscribed books and journals.

➢ Encourage the students to participate in Curricular/Co-curricular/Extracurricular activities by giving weight age for each activity to improve their overall performance.

➢ Arranging guest lecturers in thrust area and also motivating students to participate in soft skill programs.

➢ Advanced communication skills training as part of curriculum

➢ Integrating the laboratory component with the theory course, so as to complement each other and hence enhance student learning

➢ Certificate Courses in advanced area as part of curriculum

➢ Students are actively involved in research activities and research outcomes are published in International Journals/Conferences

➢ Technical associations, professional societies and clubs (such as IEEE, IET, SAE, CSI) functioning with the students as the executive committee members and the faculty taking up the role of a facilitator helps for developing-Organizational abilities, Leadership qualities, Time and Financial management, Inter personal communication.

➢ Including questions based on competitive examinations like GATE / CAT / IES and other into the assessments, if few courses.

➢ Providing opportunity for faculty to innovate in assessment component, through a maximum of 30% in the internal assessments, which can be different from the regular written examination / quiz, which however needs to be specified in advance, before the commencement of the semester.

➢ In addition to the regular classes and laboratories the additional practice laboratories are accommodated for technical trainings to the students:

- METE : Modelling and Experimental Tools in Engineering

- ATP: Advance Technical Programming Lab

- Weekly Tests (Sunday Tests) - Danush test (Technical/Aptitude/English)

- New Research Lab on IoT and Data Analytics
- Field work/ Internships
- Oral presentation
- Technical Seminars/ Symposiums/ Workshops
- Technical paper presentations/ Group discussions
- Providing access to e-journals and e-books
- NPTEL courseware and are accessible online in digital library
- Subject materials are available in digital form in the institution website

- Awards of best student projects
- Financial support to student for participating in competitions
- Funding for multi-disciplinary projects
- Hands-on workshop by industry personnel
- Industrial / Site Visits
- Inter-departmental students projects
- Internships during the semester breaks
- Project Based Learning
- Preparing PPTs, hand-outs of every lecture and making them available to the students through online
- Guest lectures by experts from the Industry and add-on-courses are organized to cover content beyond syllabus
- Linkages / MoU with leading industries to bridge the gap in the curriculum
- Wi-Fi facility available in the campus allows students to access technical resources.
- Enhance corporate collaborative projects

2.7   Total No. of actual teaching days during this academic year: **186**

2.8   Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, and Online Multiple Choice Questions)

- Question papers based on blooms taxonomy
- End semester examination question papers are set by external experts
- Online Multiple Choice Questions
- Double Valuation System
- Dummy Number System
- Online Mark Entry System for Internal and External System

- ➢ Hall Ticket with Student Photos
- ➢ Bar code system for coding and decoding of scripts
- ➢ The college publishes the Rules and Regulations for all programs. In addition to the academic rules and regulations, the regulations governing examination, evaluation and mal practices etc., have been manifested. A comprehensive (up dated) examination manual is in place.
- ➢ The college conducts regular orientation and awareness programs to bring awareness about the Rules and Regulations.
- ➢ Online Registrations for Institution Electives.
- ➢ All answer papers of end semester examinations undergo double valuation including by an external evaluator
- ➢ Answer sheets are subjected to third evaluation by another examiner, if there are undue discrepancies noted in the double evaluation made by the examiners
- ➢ Recounting, Revaluation and personal identification
- ➢ **Some of the other noteworthy reforms in examinations:-**
- o Computerization of mark sheet printing and Transfer Certificate
- o Photographs are also captured and put in database at the time of enrolment.
- o Proper upkeep of permanent record introduced.

2.9    No. of faculty members involved in curriculum restructuring / revision / syllabus development as member of Board of Study/Faculty/Curriculum Development workshop:

Being an Autonomous Institute, the up gradation and review of curriculum is a continuous process, as every year there would be some departments coming up for revisions. Hence the BOS, Faculty Body and Academic Council meetings take place at least twice a year. On an average, 30 to 40% courses of the institute would be updated or revised in two years for once.

All the senior faculty members are on the Boards of Studies. All HODs are on the Academic Council.

2.10    Average percentage of attendance of students:        **82%**

The huge number of students spread across a number of departments, a consolidated attendance data does not exist. However, at the Faculty and Department level the attendance is monitored.

2.11  Course / Programme wise distribution of pass percentage:

**B.Tech. - I Semester (2017-2018)**

| Title of the Programme | Year of I Semester | Total no. of students appeared | Division | | | | |
|---|---|---|---|---|---|---|---|
| | | | Distinction | I | II | III | Pass |
| Aeronautical Engineering | I | 119 | 68 | 22 | 12 | - | 85.71 |
| | II | 131 | 64 | 22 | 18 | - | 79.39 |
| | III | 113 | 75 | 19 | 11 | - | 92.92 |
| | IV | 158 | 81 | 61 | 8 | - | 94.94 |
| Computer Science and Engineering | I | 238 | 135 | 51 | 21 | - | 86.97 |
| | II | 239 | 142 | 40 | 19 | - | 84.10 |
| | III | 224 | 161 | 25 | 11 | - | 87.95 |
| | IV | 148 | 111 | 16 | 6 | - | 89.86 |
| Information Technology | I | 117 | 49 | 16 | 15 | - | 68.38 |
| | II | 52 | 21 | 8 | 12 | - | 78.85 |
| | III | 51 | 29 | 3 | 7 | - | 76.47 |
| | IV | 52 | 32 | 7 | 5 | - | 84.62 |
| Electronics and Communication Engineering | I | 238 | 121 | 49 | 16 | - | 78.15 |
| | II | 245 | 178 | 19 | 17 | - | 87.35 |
| | III | 257 | 197 | 36 | 5 | - | 92.61 |
| | IV | 190 | 123 | 46 | 0 | - | 88.95 |
| Electrical and Electronics Engineering | I | 109 | 65 | 19 | 11 | - | 87.16 |
| | II | 64 | 37 | 8 | 8 | - | 82.81 |
| | III | 53 | 39 | 2 | 4 | - | 84.91 |
| | IV | 51 | 32 | 10 | 1 | - | 84.31 |
| Mechanical Engineering | I | 112 | 44 | 34 | 12 | - | 80.36 |
| | II | 137 | 80 | 22 | 17 | - | 86.86 |
| | III | 118 | 75 | 19 | 11 | - | 88.98 |
| | IV | 121 | 43 | 34 | 21 | - | 80.99 |
| Civil Engineering | I | 119 | 41 | 31 | 20 | - | 77.31 |
| | II | 133 | 84 | 12 | 18 | - | 85.71 |
| | III | 101 | 67 | 14 | 12 | - | 92.08 |
| | IV | 91 | 65 | 11 | 4 | - | 87.91 |

| Title of the Programme | Total no. of students appeared | Division | | | | |
|---|---|---|---|---|---|---|
| | | Distinction | I | II | III | Pass |
| **M.Tech (PG Courses)** | | | | | | |
| Aerospace Engineering | 64 | 28 | 36 | - | - | 100.00 |
| Computer Science Engineering | 49 | 18 | 30 | - | - | 97.96 |
| Embedded Systems | 30 | 15 | 13 | - | - | 93.33 |
| Power Electronics and Electrical Drives | 13 | 13 | - | - | - | 100.00 |
| CAD/CAM | 19 | 4 | 15 | - | - | 100.00 |
| Structural Design Engineering | 18 | 12 | 3 | - | - | 83.33 |
| Master of Business Administration (MBA) | 86 | 37 | 47 | - | - | 97.67 |

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

IQAC contributes monitors and evaluates the teaching-learning process.

To create and maintain quality of education in institutions is one of the major challenges of higher education. In order to institutionalize the process of quality enhancement, the Internal Quality Assurance Cell (IQAC) was established in our college in 2014. The IQAC is a Nodal Agency for monitoring the working of the Institution and is committed to overall quality enhancement in the Institution.

**IQAC has evolved its own mechanism for monitoring and evaluating the Teaching Learning process. It ensures that quality teaching and this takes place through**

➢ Development and application of quality parameters for the various academic and administrative activities of the Institute.

➢ Suggestions methods for quality teaching/ learning, evaluating and analysing results and suggesting measures for improvements.

➢ Analysis of student's feedback and stakeholder's feedback.

➢ Monitoring of student and staff attendance on a daily basis.

➢ Arrangement for feedback responses from students, parents and other stakeholders on quality-related institutional processes

➢ Dissemination of information on the various quality parameters of higher education.

➢ Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles

- ➢ Documentation of the various programmes/activities of the Institute, leading to quality improvement

- ➢ Acting as a nodal agency of the Institute for coordinating quality-related activities, including adoption and dissemination of good practices

- ➢ Development and maintenance of Institutional database through Intellectual College Management System (ICMS) for the purpose of maintaining /enhancing the institutional quality

- ➢ Development of Quality Culture in Institute

- ➢ Preparation of the Annual Quality Assurance Report (AQAR) of the Institute based on the quality parameters/assessment criteria developed by the relevant quality assurance body (like NAAC, NBA) in the prescribed format

- ➢ IQAC plays a significant role in improving the quality of higher education. It also initiate the plans and supervises various activities which are decided in the meetings conducted regularly

- ➢ IQAC keeps an eye on the regular teaching process and suggest innovative ways to improve the same

- ➢ It also evaluates the teaching and learning pedagogies through seminars / tutorials / mid-semester tests

- ➢ It also gives emphasis on group discussion, PPT, online examinations, etc. Informal structure also exists for feedback of teachers through tutorials

- ➢ Various workshops are organized to make students conscious about drifting career options.

- ➢ IQAC also endeavours on library up gradation

- ➢ It conducts training workshops/ seminars/ expert lectures for teachers also to enhance their knowledge and too aware about new technologies.

- ➢ The IQAC prepared the stakeholders for implementation of Choice Based Credit System (CBCS).

2.13 Initiatives undertaken towards faculty development

| Faculty / Staff Development Programs | Number of faculty benefitted |
|---|---|
| Refresher courses | 20 |
| UGC – Faculty Improvement Program | 2 |
| HRD Programs | 102 |
| Orientation Programs | 39 |
| Faculty exchange Program | - |
| Staff training conducted by the university | 78 |
| Staff training conducted by other institutions | 2 |

| Summer / Winter schools, Workshops, etc. | 92 |
|---|---|
| Others | 52 |

2.14  Details of Administrative and Technical staff

| Category | Number of Permanent Employees | Number of Vacant Positions | Number of permanent positions filled during the Year | Number of positions filled temporarily |
|---|---|---|---|---|
| Administrative Staff | 29 | - | - | - |
| Technical Staff | 94 | - | - | - |

# CRITERION – III

3.    Research, Consultancy and Extension

   3.1    Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

IQAC encourages the faculty and students to do research work and publish papers.

**As recommended by IQAC**

- Lectures on various latest topics by subject experts were organised by departments for creating awareness about the recent advances in different fields
- IQAC provides information about various research proposals and scope for publications to the faculty members through the Institute's Research and Development Centre (RDC)
- IQAC analyses research publications, research projects and promotes quality research
- Students were encouraged to visit educational institutes like IIT, IIIT, Etc.
- Updating the faculty on new areas of research through Seminars and Guest Lectures
- Prepared Suggestive list of reputed journals at department level to improve quality of journal publications
- Periodic Research cluster meetings in the departments
- Industry and academia visits to foster Interaction with experts in the domain
- Faculty Research Interest groups are formed to promote research interest among faculty
- Scopus indexed publications are compiled
- Access to publications from E-Journals, IEEE (Institute of Electrical and Electronics Engineers), SPRINGER, IMechE (Institution of Mechanical Engineers), INDERSCIENCE, ELSEVIER, MCGRAW HILL, ASME (American Society for Mechanical Engineers), ASCE (American Society for Civil Engineers), ASTM (American Society for Testing and Materials), J-Gate, ACM (Association for Computing Machinery), Proquest, Nature, Taylor & Francis Online Journals, Wiley online library, Free Access Journals.
- Students are encouraged to carry out Mini-& Major project work in house and with collaborations with industry and academia
- Quality Assurance is being the key driver in the education process all over the globe, to ensure & certify the research generated (UG and PG projects / Thesis), the Institution has procured plagiarism check software (Turnitin) to ensure and follow the global pratictices to Research (UG and PG project / Thesis). All the research / project reports are subjected to plagiarism check before signing Thesis reports

**List of Interactions**

| SNo | Name of the Expert | Designation and Organization | Dates of Interaction | Duration (in hours) | Event Details |
|-----|-----|-----|-----|-----|-----|
| 1 | Dr. Gopala Krishna | Professor, Koneru Laxmaiah University, Vijayawada | 04-08-2017 | 4 | Awareness on DST(INSPIRE) - Creative pursuit of science and Technology towards attract talent of youth |
| 2 | Mr. T Srinivas | Airhub, New Delhi | 09-08-2017 | 5 | Power generation project preparation |
| 3 | Dr. Rajeev Sharma | DST, New Delhi | 26-08-2017 | 4 | How to write Effective Research Proposal for Funding |
| 4 | Mr. T Srinivas | Airhub, New Delhi | 02-09-2017 | 3 | Innovative Projects in commercial view |
| 5 | Dr. H B Singh | Scientist-E, DST, New Delhi | 15-12-2017 | 5 | Awareness on Cognitive Science |
| 6 | Dr. K G Srinivas | Professor, Guru Gobind Singh Indraprastha University, New Delhi | 13-02-2018 | 4 | How to manage Research Project |
| 7 | Dr. T V Suresh Kumar | Professor, MS Ramaiah Institute of Technology, Bangalore | 15-02-2018 | 5 | Tips to improve Under Graduate research |
| 8 | Dr. Krishna Kanth Pulicherla | DST Technology Division, New Delhi | 09-06-2018 | 4 | How to write Effective Research Proposal for Funding |
| 8 | Dr. Mohan Babu | Professor CR Engineering College, Tirupati | 09-07-2018 | 3 | How to prepare the proposals to DST |

Initiation has been taken to augment Research culture in the College and in this direction; Research Clusters were formed among all the departments. Currently, the College has 12 clusters.

Further, it is planned to strengthen the existing clusters by involving UG and PG students to participate in the clusters.

**The following are the Research Clusters formed during 2017-18:**

| S No | Name of the Cluster | Focus Areas |
|-----|-----|-----|
| 1 | VLSI & Embedded Systems | • System-on-chip Design<br>• Reconfigurable Computing<br>• Intelligence Systems for on board Data Processing &Control<br>• Automotive Systems<br>• Smart Cities, Medical & Military Applications |

| 2 | Signal Processing | • Digital Image Processing |
|---|---|---|
| | | • Radar and Lidar Signal Processing |
| | | • Bio-signal Processing |
| | | • Speech Signal Processing |
| 3 | Communications | • Cognitive radio, Network protocol |
| | | • 5G communication, Bigdata |
| | | • OFDM and 4Gcommunication |
| | | • Efficient communication for telemedicine |
| 4 | Energy Systems | • Solar, Wind & PV Integration. |
| | | • Energy storage and management systems. |
| | | • Energy Harvesting; |
| | | • Renewable / Alternate energy |
| | | • Solar Thermal Energy Technology and Energy Material Development |
| 5 | Power Systems | • Power Quality |
| | | • Voltage stability, SVC compensation and Soft Computing techniques applied to power systems |
| | | • Contingency analysis, state estimation and optimal operation. |
| | | • Power Electronics applied to power systems |
| | | • Smart Grid and Micro Grid |
| 6 | Computer Vision | • Video Analytics |
| | | • Image and Video retrieval Process |
| 7 | Software Development | • Software Engineering |
| | | • Software Testing |
| | | • Optimization Techniques |
| | | • Software Application |
| 8 | Network Security | • Improvement of Quality of Service(QoS) |
| | | • Analysis of cyber security issues |
| | | • Protection method of Cybersecurity |
| | | • Forensics analysis on Cyberattacks |
| 9 | Data Mining | • Data Analytics |
| | | • Machine Learning |
| | | • Web Mining |
| 10 | Manufacturing | • Micromachining |
| | | • Tool Design |
| | | • Optimization Techniques |
| | | • Industrial automation |
| | | • Mechatronics |
| | | • Robotics |
| 11 | Water and Environment | • Water Resources Engineering &Management |
| | | • Environmental Engineering |

| | | | |
|---|---|---|---|
| | | • Water Treatment | |
| | | • Remote sensing and GIS | |
| 12 | Geotechnical and Transportation | • Geotechnical Engineering | |
| | | • Transportation Engineering | |

3.2   Details regarding major projects

| | Completed | Ongoing | Sanctioned | Submitted |
|---|---|---|---|---|
| Number | -- | **3** | **3** | -- |
| Outlay in Rs. Lakhs | -- | **167.67** | **99** | -- |

3.3   Details regarding minor projects

| | Completed | Ongoing | Sanctioned | Submitted |
|---|---|---|---|---|
| Number | -- | **3** | -- | -- |
| Outlay in Rs. Lakhs | -- | **34.47** | -- | -- |

3.4   Details on research publications

| | International | National | Others |
|---|---|---|---|
| Peer Review Journals | **192** | **10** | -- |
| Non-Peer Review Journals | **06** | **2** | -- |
| e-Journals | **198** | -- | -- |
| Conference proceedings | **13** | **10** | -- |

3.5   Details on Impact factor of publications:

| | |
|---|---|
| Impact Factor Range | 0.26 to 3.11 |
| Average Impact Factor | 01 |
| h-index | 04 Average = 10 |
| Nos in SCOPUS | 186 |
| SCI | 20 |

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

| Nature of the Project | Duration Year | Name of the funding Agency DST, AICTE, UGC | Total grant Sanctioned (lakhs) | Received (lakhs) |
|---|---|---|---|---|
| Major projects | 3 Years | DST | 70.59 | 70.59 |
| Minor Projects | -- | -- | -- | -- |
| Interdisciplinary Projects | -- | -- | -- | -- |
| Industry sponsored | -- | -- | -- | -- |
| Projects sponsored by the University/ College | 1 | IARE | 7 | 7 |
| Students research projects *(other than compulsory by the University)* | 1 | IARE | 5 | 5 |
| Any other (Specify) | -- | -- | -- | -- |
| Total | -- | -- | 82.59 | 82.59 |

| S No | Department Name | Project Name | Scheme ID | Amount Sanctioned | Purpose/ Comments |
|---|---|---|---|---|---|
| 1 | University Grants Commission (UGC), New Delhi | Machine Characterization of Telugu Phonemes | Minor Project | 441000 | Research Project |
| 2 | Programme/s Sanctioned under DST–NIMAT Project 2018–19 | Entrepreneurship Awareness Camp (EAC) | NIMAT | 120000 | Entrepreneurship Awareness Camp (EAC) |
| 3 | AICTE-ISTE Induction/ Refresher Programmes, New Delhi | Recent Advances and Applications in Cognitive Computing | Staff Development Scheme | 300000 | Refresher Program for Faculty |
| 4 | Department of Science & Technology (DST), New Delhi | Fund for Improvement of Science and Technology Infrastructure (FIST) | R & D Infrastructure | 4500000 | FIST |
| 5 | Department of Science & Technology (DST), New Delhi under STEM scheme. | Science Fair for Rural Community | STEM | 1000000 | Science Fair for Rural Community |
| 6 | All India Council for Technical Education (AICTE), New Delhi | Modernization and Removal of Obsolescence Scheme (MODROBS) | Institutional Development Scheme | 98000 | MODROBS |
| 7 | All India Council for Technical Education (AICTE), New Delhi | Sustainable green Construction and assessment in Civil Engineering | Staff Development Scheme | 100000 | Seminar Grant |

| S No | Department Name | Project Name | Scheme ID | Amount Sanctioned | Purpose/ Comments |
|---|---|---|---|---|---|
| 8 | All India Council for Technical Education (AICTE), New Delhi | Conference on Embedded Systems and Applications | Staff Development Scheme | 500000 | Grant of Conference |
| | **Total** | | | **7059000** | |

3.7   No. of books published

i)     With ISBN No.                      :      10

ii)    Chapters in Edited Books        :      12

iii)   Without ISBN No.                  :      Nil

3.8   No. of University Departments receiving funds from:  **- Not Applicable –**

| UGC-SAP | -- |
|---|---|
| CAS | -- |
| DST-FIST | -- |
| DPE | -- |
| DBT Scheme/ Funds | -- |

3.9   For colleges    :

| Autonomy | **Yes** |
|---|---|
| CPE | No |
| DBT Star Scheme | No |
| Inspire | No |
| CE | No |
| Any Others (Specify) | No |

3.10  Revenue generated through consultancy:  **Rs 12,60,139/-**

3.11  No. of conferences organized by the Institution:

| Level | International | National | State | University | College |
|---|---|---|---|---|---|
| Number | 3 | 3 | - | - | - |
| Sponsoring agencies | AICTE | DST | - | - | |

| Govt. Funded Conferences / Symposiums / Skill Development | | | | | |
|---|---|---|---|---|---|
| S No | Name of the Chair Person | Title | Funding Agency | Cost (Rs. in Lakhs) | Sanction Date |
| 1 | Dr. J S R Prasad | Sustainable green Construction and assessment in Civil Engineering | All India Council for Technical Education (AICTE), New Delhi | 1.0 | 08-06-2017 |
| 2 | Dr. Gopala Krishna Pilutla, Professor of ECE | Conference on Embedded Systems and Applications | All India Council for Technical Education (AICTE), New Delhi | 5.0 | 05-06-2017 |
| 3 | Dr. K Gopala Krishna Murti, Professor of ME | Skill and personality development centre for SC / ST Students | All India Council for Technical Education (AICTE), New Delhi | 20.66 | 15-05-2017 |
| 4 | Mr. CH. Jaya Prakasa Rao | Innovation in Science Pursuit for Inspired Research Science Camp | Department of Science & Technology (DST), New Delhi under INSPIRE scheme | 9.75 | 23-05-2017 |
| 5 | Dr. L V Narasimha Prasad, Professor, CSE | International Conference on Big Data Science and Applied Knowledge Based Systems (ICBDSAK-2017) | Department of Science & Technology (DST), New Delhi | 1.0 | 14-07-2017 |
| 6 | Dr. N N Ramesh, Professor, ME | National Seminar on Recent Trends in Welding Processes for Automotive Industries | Department of Science & Technology (DST), New Delhi | 1.0 | 18-06-2017 |

3.12  No. of faculty served as experts, chairpersons or resource persons: **42**

3.13  No. of collaborations: International:- National: **30** any other:--

3.14  No. of linkages created during this year: --

3.15  Total budget for research for current year in lakhs: **153**

3.16 No. of patents received this year:

| TYPE OF PATENT | STATUS | NUMBER |
|---|---|---|
| **National** | Applied | **02** |
| | Granted | **08** |
| **International** | Applied | -- |
| | Granted | -- |
| **Commercialised** | Applied | -- |
| | Granted | -- |

| S No | Name of the Faculty | Dept. | Type of IPR | Title | Application No. | Status |
|---|---|---|---|---|---|---|
| 1 | Mr. C Labesh Kumar | ME | Industrial Design | Drilling, tapping cum threading tool | 294695 | Filed |
| 2 | Mr. M V Aditya Nag | ME | Industrial Design | Engine Mounting Bracket | 294696 | Granted |
| 3 | Mr. C Labesh Kumar | ME | Industrial Design | Tapered Tool | 294697 | Granted |
| 4 | Mr. C Labesh Kumar | ME | Industrial Design | Threaded Tool | 294698 | Filed |
| 5 | Mr. M V Aditya Nag | ME | Industrial Design | "Wall Mount" for Machines | 294699 | Granted |
| 5 | Mr. M V Aditya Nag | ME | Industrial Design | Welding Table | 280258 | Granted |
| 6 | Dr. G Ramu | CSE | Patent | Operating and Control System for A Trike Vehicle | 201841031240 | Published |
| 7 | Dr. G Ramu | CSE | Patent | Device to Regulate Flow of Fluid And Method Employed Thereof | 201841031241 | Published |
| 8 | Dr. G Ramu | CSE | Patent | System and Method for Generating Electric Power To An Electric Vehicle | 201841031239 | Published |
| 9 | Dr. G Ramu | CSE | Patent | System and Method for Monitoring and Providing Electric Power To Power Unit | 201841031627 | Published |
| 10 | Dr.Ch V K N S N Moorthy, D Anitha | ME | Patent | Pneumatic Regenerative braking with heat recovery system (PRBHWHRS) for Automobiles | 201641016249 | Published |

3.17  No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

| Total | International | National | State | University | Dist | College |
|---|---|---|---|---|---|---|
| **3** | **1** | **2** | **0** | **0** | **0** | **0** |

3.18  No. of faculty from the Institution

    i.     Who are Ph. D. Guides         :    **05**

    ii.    Students registered under them   :    **10**


3.19  No. of Ph.D. awarded by faculty from the Institution:    --


3.20  No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

| JRF | SRF | Project Fellows | Any Other |
|---|---|---|---|
|  |  |  |  |


3.21  No. of students Participated in NSS events:

| University level | State Levels | National Levels | International Levels |
|---|---|---|---|
| **68** | -- | -- | -- |


3.22  No.  of students participated in NCC events:

| University level | State Levels | National Levels | International Levels |
|---|---|---|---|
| -- | -- | -- | -- |


3.23 No.  of Awards won in NSS:

| University level | State Levels | National Levels | International Levels |
|---|---|---|---|
| -- | -- | -- | -- |


3.24  No.  of Awards won in NCC:

| University level | State Levels | National Levels | International Levels |
|---|---|---|---|
| -- | -- | -- | -- |


3.25  No. of Extension activities organized

| University Forum | College Forum | NCC | NSS | Any other |
|---|---|---|---|---|
| -- | **02** | -- | **07** | -- |

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

➢ The National Service Scheme (NSS) has been functioning with the motto "NOT ME BUT YOU" in view of making the youth inspired in service of the people and hence NSS Aims Education through Community Service and Community Service through Education. NSS undertakes various activities like tree plantation, blood donation camps, disaster management, national integration camps, immunization, adventure programs etc.

➢ We are proud to note that until this academic year, the NSS units of our institution have conducted the Mega and highly useful "Blood Donation Camps".

➢ Our NSS units have been creating records in mobilizing blood donors in our students. For the last 17 (seventeen) years. We have been donating blood in excess in 800 units in association with Red Cross and ESI. Not alone, during blood donation camps every year, also in the time of need, to save precious human lives, we send voluntary blood donors (our students) to hospitals to donate blood. This service will continue forever, since service to society is our foremost mission.

➢ A team of 6-8 doctors from Malla Reddy Hospital, Suraram visits and holds camp in the village of nearby Dundigal every alternate Sunday. In these camps thousands of rural patients from neigh boring districts come and get free medical advice.

➢ Course on environment education sensitize students about environment.

➢ The faculty members and students are involved in social activities such as the NSS, NCC, Yoga classes.

• Annual and periodic sports meet

• National Service Scheme (NSS) unit has on its rolls 100 student volunteers who actively participate in service oriented activities.

• Regular Camps such as Blood Donation Camp, World Literacy Day campaign for under privileged near Dundigal village; Workshops on the days of National Importance were organized by the NSS Unit during the academic year 2017-18. The following Regular Camps were organized by the Unit:

**Regular Camps:**

| Event | Regular activities conducted | No. of Volunteers Participated | Date |
|---|---|---|---|
| 1 | **Vanamahothsavam Week**, Mass Tree Plantation at IARE | 50 | 25-08-2017 |
| 2 | **Independence Day** at Govt. High School, Dundigal | 50 | 18-09-2017 |
| 3 | **World Literacy** Day campaign at Dundigal | 85 | 17-11-2017 |
| 5 | **International Womens Day** at IARE campus | 150 | 08-3-2018 |
| 6 | **Blood Donation Camp** at IARE campus | 100 | 29-03-2018 |

# CRITERION – IV

4.    Infrastructure and Learning Resources

4.1   Details of increase in infrastructure facilities :

| Facilities | Existing | Newly created | Source of Fund | Total |
|---|---|---|---|---|
| Campus area | 25404.95sqm | -- | Self | 25404.95sqm |
| Class rooms | 81 | -- | -- | 81 |
| Laboratories | 102 | -- | -- | 102 |
| Seminar Halls | 14 | 14 | | 14 |
| No. of important equipment's purchased (≥ 1-0 lakh) during the current year. | - | 15 | Self | 15 |
| Value of the equipment purchased during the year (Rs. in Lakhs) | 84.37 | 69.81 | Self | 154.18 |
| Others | -- | -- | | -- |

4.2   Computerization of administration and library

  ➢  The college has a data management system through Intellect College Management System (ICMS) covering various aspects of academic, administration. Students attendance, continuous internal assessment marks, registration for further programmes and purchase of various requirements of departments are effectively and efficiently managed through ICMS. This system enabled a fool proof mechanism for documenting, monitoring and controlling various transactions which are financial, academic and administrative in nature.

  ➢  All the required drawing halls, colossal corridors, spacious class rooms, laboratories, library, computer centre, seminar halls, E-class rooms and faculty rooms are housed in a total building space of 3,10,000 sq. ft. The Institute has an air conditioned auditorium with 860 seating capacity and air conditioned E-class rooms with 120 seating capacity along with LED projectors. All the class rooms are equipped with LED projectors to ensure an effective teaching learning process.

  ➢  The duplex modern library is fully computerized with bar-coding and Wi-Fi facility. Completely automated library management system makes it possible to borrow books at any time. In addition to these resources, faculty members dynamically upload all their lectures, question banks, lab manuals and research notes on the institute Intellect CMS login. These are available to the students with the simple keying in of a password. The library large enough to accommodate more than 36740 volumes of books, the news papers, back volumes of the periodicals, reference books, current periodicals, more than

7638 online journals of IEEE (163), ASME (29), ASCE (36), ELSEVIER (275), Springer (149), J-Gate (6349), McGraw-Hill(637) and 1526 Indian journals and magazines in print.

➢ NEW-GEN-LIB Software installed in Central Library for automation

➢ Complete Wi-Fi in campus

➢ Digital library with 40 systems to access E-journals, E-books, E-learning, Multimedia Center and photocopying are made available for the convenience of the users. N-LIST E resources (Through INFLIBNET), NPTEL facility (National Programme on Technology Enhanced Learning) to access video lectures and Membership of DELNET (Inter library loan) for resource sharing. Library is fully computerized with bar-coding system.

➢ It has a modern infrastructure with a reading capacity of 500 students and 35000 volume of books. It has subscribed to more than 180 online journals of IEEE, ASME and it is subscribing more than 156 Indian Journals & Magazines in print.


4.3   Library services :

➢ The IARE Library is considered one of the most resourceful centres in twin cities since it caters to the current educational need on a wide scale. The institute has a duplex library which is spacious and voluminous enough to accommodate more than 35000 volumes of books. The first floor has Circulation Books, News Papers, Back Volumes of the Periodicals whereas the Second floor accommodates Reference Books, Current Periodicals, etc.

➢ It has a modern infrastructure with a reading capacity of 500 students and 35000 volume of books. It has subscribed to more than 180 online journals of IEEE, ASME and it is subscribing more than 156 Indian Journals & Magazines in print.

➢ Digital library with 40 systems to access E-journals, E-books, E-learning, Multimedia Center and photocopying are made available for the convenience of the users. N-LIST E resources (Through INFLIBNET), NPTEL facility (National Programme on Technology Enhanced Learning) to access video lectures and Membership of DELNET (Inter library loan) for resource sharing. Library is fully computerized with bar-coding system.

➢ The library has also been Information Centre providing information and intellectual requirements to its students and faculty with user-friendly approach. It offers a fully integrated and dynamic environment for conducting academic study. Multiple copies ensure that resources are easily available in Reference Section and Stack Section as well.

| | Existing | | Newly added | | Total | |
|---|---|---|---|---|---|---|
| | No. | Value | No. | Value | No. | Value |
| Text Books | 28060 | 5892000 | 17749 | 4082270 | 45809 | 9975170 |
| Reference Books | 7312 | 1535520 | 476 | 109480 | 7788 | 164500 |
| e-Books | -- | -- | -- | -- | -- | -- |
| Journals | 153 | 273000 | -- | -- | 153 | 273000 |

| | | | | | |
|---|---|---|---|---|---|
| e-Journals | 330 | 1143526 | -- | -- | 330 | 1143526 |
| Digital Database | -- | -- | -- | -- | -- | -- |
| CD & Video | 1192 | 28000 | -- | -- | 1192 | 28000 |
| Others (specify) | NEW GEN LIBRARY SOFTWARE Rs 1,20,000/- | | | | | |

4.4    Technology up gradation (overall):

The every faculty member of the Institute has been provided with a computer, printer and accessories. Every office of the institute works in a computerized environment.

| | Total Computers | Computer Labs | Internet | Browsing Centres | Computer Centres | Office | Depart ments | Others |
|---|---|---|---|---|---|---|---|---|
| Existing | 1356 | 1081 | 200 mbps | - | 120 | 36 | 119 | 0 |
| Added | 150 | 50 | - | - | 40 | 10 | 50 | 0 |
| Total | 1506 | 1131 | - | - | 160 | 46 | 169 | 0 |

4.5    Computer, Internet access, training to teachers and students and any other programme for technology up gradation (Networking, e-Governance etc.)

➢    The Institute is a Wi-Fi enabled campus which helps management, staff and students to extensively use the internet for their various purposes. The collage has one digital library where students are allowed to browse for the academic requirements. The college has implemented enterprise resource which helps the college to organise, purchase, attendance and other administrative needs which results in greater e-governance.

➢    The leased lines of BSNL (100 Mbps), Apollo (100 Mbps),are playing instrumental role for facilitating over all campus network. The Radware Link Proof Load balancer and Fire wall are used for continuous network support for entire institute without break its impact is seen as smooth video conferencing in the Seminar, workshop in the different departments. The computer centre assisted the institute administration in the different selection processes by conducting written examination.

➢    Awareness programme were organized by the Institute for use of Internet and e-governance amongst the employees and students.

➢    Access to internet and computer facilities to teachers and students of the Institute to internet in all the students' hostels and Library.

➢    Wi-Fi connectivity extended with 200 MBPS

➢    CCTV cameras are installed

➢    Interest free loans are provided to faculty for purchase of Laptops.

4.6 Amount spent on maintenance in lakhs:

| | | |
|---|---|---|
| i | ICT | 47.25 |
| ii | Campus Infrastructure and facilities | 538.85 |
| iii | Equipment | 282.72 |
| iv | Others | 1862.10 |
| | **Total** | **2731.42** |

# CRITERION – V

5.    Student Support and Progression

    5.1    Contribution of IQAC in enhancing awareness about Student Support Services

- ➢ IQAC takes up various decisions for the benefit of students and upliftment of college. This year also various meetings were held by the IQAC team to provide support to students.

- ➢ The Institution publishes its annual information booklet for the new students at the beginning of every academic session. The booklet provides details about the faculty coordinators and their responsibilities as well as information about anti-ragging norms, code of conduct, events for the forthcoming year, staff and their functions etc.

- ➢ An easily accessible upgraded website (www.iare.ac.in) through which the student can access all the information he/she is looking for. All the student relevant information's are also shared through various meetings/ circulars/ notifications. The institute has made provisions to send bulk email and SMS to students.

- ➢ Students are informed about various support services by the Principal, Deans, Head of the Departments, Librarian, Hostel Secretary, Placement & Training Officer and other academic heads during their induction programme. Display of information towards student services are also displayed in notice boards at various locations in the campus.

- ➢ The brochure provides insight into placement records, companies, facilities and other details.

- ➢ The Principal, IARE authored a book on Outcomes – Based Education. The Handbook is a compilation of articles and information on Taxonomies, OBE and Accreditation. The handbook provided over view and importance of OBE from different perspectives and also a brief insight into adaptation that helps effective's implementation of OBE is an institution. The copies of the handbook were provided to the students.

**During the meetings of IQAC held, following decisions were made and implemented:**

- ➢ Strengthen the mentoring system for the benefit of students:
  - ▪ Mentors were allotted at the time of admission of students and mentor's phone numbers were given to the parents at the same time.
  - ▪ A booklet having student's complete academic and personal details was maintained by mentor for every student.

- ➢ All rooms/departments were kept clean and better drinking facilities were provided to the college students.

- ➢ Requirement of more rooms and labs was raised for new courses.

- ➢ The IQAC through the Student Skill Development centre promotes awareness about the various programmes.

- ➢ Further, the IQAC through the institute provides support to students seeking admission into foreign Universities to pursue higher studies.

- The Placements Office is instrumental in providing training to students, identifying placement opportunities and helping the students find excellent placement opportunities

- Each student is assigned a Mentor (faculty advisor) at the time of his / her initial enrolment for advising students on course selection and registration, monitoring academic performance, and offering assistance to students in academics.

- The Student support Services are primarily looked after by the Dean Students affairs. Introduction of student centric welfare schemes, addressing various requirements of residential students and providing necessary support system for student related issues are managed by the Dean of Students affairs in consultation with Deans of the Faculties and Student representatives. The IQAC has a very limited role to play in these activities.

- The IQAC regularly in its meetings plan and review the quality of services offered in Orientation Program to I Year is conducted regularly to create awareness among students about existing facilities and practices of the college

- Student-Mentor System for mentoring academic performance and career oriented counselling of its students.

5.2    Efforts made by the institution for tracking the progression

- Progression of students in attendance and academic performance is monitored continually and a well defined mechanism is developed placed in the system. Percentage of attendance of students will be calculated and the names of those who have put up less than 75% will be displayed on all notice boards and also their signatures will be taken. The parents of these students are also informed by sending SMS through councilors.

- To improve the attendance of students in the classes, automated messages were sending to parents about their ward's attendance. Phone numbers of the parents were also taken at the time of admission.

- The separate machinery for tracking the progression of students. The examination system has in built mechanism for monitoring the progression.

- The results of final examinations are analyzed and students with bad performance are sent for remedial teaching.

- The institution continuously monitors the progress of the students through various academic and para-academic committees. The student mentors keep track of the students' progress on regular basis. The Institution ensures proper implementation of the support system to the students. Remedial and special classes in addition to personal counseling are conducted.

**The Institution monitors the progression of students through**

- Regular monitoring of class attendance

- Recording end-semester examination results

- Encouraging the students to write research papers

- Rewarding the students for publishing the research papers

- ➢ Continuous assessment is conducted for student
- ➢ Remedial and Reinforcement classes are conducted every semester to improve learning outcomes among slow learners.
- ➢ Day-to-Day evaluation strictly followed in laboratories.
- ➢ Advanced learners are encouraged to take up new and on-demand courses beyond curriculum and also to pursue higher education.
- ➢ Apart from MID Exams, Assignments and End exams, continuous in-house assessment through tests, assignments, Group Discussions, Presentations etc. and continuous feedback.
- ➢ Daily Attendance tracking through Campus Automation System and alerting the students, parents through SMS.
- ➢ The Management conducts regular review of compliance to strategic plan (both LTG and STG) and also evaluates the student achievements from the AQAR.

5.3 (a) Total Number of students:

| UG | PG | Ph.D. | Others |
|---|---|---|---|
| **4131** | **239** | -- | -- |

Men    :  **3010**

Women :  **1360**

| Last Year | | | | | | This Year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **General** | **SC** | **ST** | **OBC** | **Physically Challenged** | **Total** | **General** | **SC** | **ST** | **OBC** | **Physically Challenged** | **Total** |
| **1659** | **495** | **141** | **1398** | **--** | **3693** | **2071** | **508** | **128** | **1424** | **--** | **4131** |

Demand ratio            Dropout %  **NIL**

(b) No. of students outside the state    :    **934**

(c) No. of international students    :    **--**

5.4   Details of student support mechanism for coaching for competitive examinations (If any)

**No. Of Students beneficiaries :       80**

- ➢ The college is putting its continuous efforts to enhance the number of students qualifying through GATE examinations

- College organises sessions related for coaching for competitive exams which includes Awareness of Indian Engineering Services Exam & GATE, Career opportunities through University Entry Scheme in Army, Navy and Air force, Higher Education Opportunities in US. Special classes are arranged for soft skill development for the students.
- Classes are conducted for students to train them for placements and competitive exams through Advanced English Communication Skills Lab and Finishing School.

| S No | Program | No of hours | Remarks |
|------|---------|-------------|---------|
| 1 | Technical Training | 168 | It covers programming skills and other domain concepts |
| 2 | Aptitude | 125 | To improve problem solving skills to crack competitive exams |
| 3 | Industry Interaction | 83 | Pre-placement talks by various corporate, guest lectures |
| 4 | Communication | 45 | To improve English language efficiency (written and oral) |
| 5 | Assessments | 42 | Cocubes, Aspiring Minds, etc. Have conducted assessments and micro analysis was given to focus on needy |
| 6 | Career Guidance | 19 | To know industry perspective and expectations, other career paths |
| 7 | Personality | 12 | Psychometric test, analysis and counselling |
| | **Total** | **494** | |

No. of students beneficiaries        :        412

5.5   No. of students qualified in these examinations

| NET | SET/SLET | GATE | CAT |
|-----|----------|------|-----|
| | | 56 | 08 |
| **IAS/IPS Etc** | **State PSC** | **UPSC** | **Others** |
| | | | 78 |

5.6   Details of student counselling and career guidance

The mentor-mentee system facilitates the counselling of all the students in academic and personal issues. Also teacher provide career guidance during counselling.

No. of students benefitted               :     **4131**

➢ Counselling sessions are allocated in the regular academic schedule (1 session / week) for both undergraduate and post graduate students to discuss and motivate the students on the academic and co-curricular performance.

➢ Student counselling system is in place. Around 20 students are attached to each faculty and the faculty will provide focused counselling and guidance by interacting with the students at regular intervals.

➢ Counselling and guidance provided by the class advisors and chairperson on various issues. Students sought the support of the faculty and are provided counselling services.

➢ The main focus is on campus placements. The institution has exclusive Training and placement cell and all eligible and enrolled students for such placements are trained by experts.

➢ The Institution / Department wise conducted research Initiation Workshop for Under Graduate Students - UG projects: Selection, Methodology and Formulation: Workshop February 22-24, 2016

➢ Parents are updated about the performance by the mentors by meetings and communication through Registered Post, SMS and Mails.

➢ Certificate courses are conducted for career advancement.

➢ Entrepreneurship Development Cell, in order to nurture the idea of entrepreneurship among the students, IARE started an entrepreneurial cell in the year 2014. The cell aims at creating entrepreneurial ecosystems in the campus to develop and support new and future entrepreneurs. The cell also intends to equip the faculty who are interested in and passionate about implementing programs by providing various training with the help of DST-NIMAT, MSME-CITD and other networks.

➢ The cell provided platform for students to develop entrepreneurial skill sets

➢ Conduct activities like workshop, Lecture series, Idea competition etc.

5.7  Details of campus placement

| On campus | | | Off Campus |
|---|---|---|---|
| Number of Organizations Visited | Number of Students Participated | Number of Students Placed | Number of Students Placed |
| 32 | 911 | 520 | 41 |

5.8    Details of gender sensitization programmes

- ➢ Commemoration of Women's Day
- ➢ International Women's Day was organized by the College on 8th March, 2017. The celebrations started with much fervour and vibrant events like Food Carving, Group Discussion, Best Innovative Ideas, Quiz, Jam on Business Ideas, Painting, Singing, mobile Apps/Models were organized for women faculty, staff and students. Prizes were given to the winners.
- ➢ The Women empowerment cell conduct programmes on gender sensitization and gender specific issues. The Centre has made remarkable progress in generating material on gender sensitization and creating awareness.
- ➢ A course on Gender sensitisation is introduced for all II year B.Tech Students.
- ➢ The Institute has also constituted a Women's Grievance Cell. The Women Grievance Cell has been provided a Mobile number. This number can be used as helpline number by the women employees and students to lodge their grievances.
- ➢ Women's Cell for to handle sensitive issues at day-to-day work
- ➢ An exclusive women's cell is set up and is fully functional and it organizes various programs sensitizing students on gender and it has been and has given remarkable result.
- ➢ "Anti-Sexual Harassment Committee" was constituted in the College. The Institute authority keeps sensitizing the students about gender issues whenever address to the students.

5.9    Students Activities

5.9.1   No. of students participated in Sports, Games and other events          **Sports**

| State/ University level | National level | International level |
|:---:|:---:|:---:|
| **82** | **36** | -- |
| **No. of Students participated in cultural events** | | |
| **State/ University level** | **National level** | **International level** |
| -- | -- | -- |

5.9.2  No. of medals /awards won by students in Sports, Games and other events**Sports**

| State/ University level | National level | International level |
|---|---|---|
| **09** | -- | -- |
| No. of students participated in cultural events | | |
| State/ University level | National level | International level |
| -- | -- | -- |

5.10  Scholarships and Financial Support

|  | Number of students | Amount |
|---|---|---|
| Financial support from institution | **12** | **6,00,000** |
| Financial support from government | **2072** | **8,74,88,600** |
| Financial support from other sources | -- | -- |
| Number of students who received International/ National recognitions | -- | -- |

5.11  Student organised / initiatives

**Fairs**

| State/ University level | National level | International level |
|---|---|---|
| -- | **03** | -- |

**Exhibition**

| State/ University level | National level | International level |
|---|---|---|
| **06** | -- | -- |

5.12  No. of social initiatives undertaken by the students:**09** (Through Technical Associations)

5.13  Major grievances of students (if any) redressed:

- The grievances and students concerns are promptly resolved at the levels of Mentors, Head of the Department, Dean-Student affairs, Principal as the case may be. The Student representatives are invited to the meetings of Governing Body, Academic Council and their views are taken note and duly considered.

- The Institution has also constituted a Grievance Redressal Committee (GRC) for the purpose of redressal of grievance of students, parents and others. The aggrieved student/s and other approach the convener of the Grievance Redressal committee for redressal of their grievance. The committee after through enquiry submits its findings/ recommendations to the Principal. So far the committee has conducted meetings regularly (re constituted committee).

- Terms of Reference for GRC is provided hereunder

- The purpose of GRC is to redress the grievance of students, parents and others

- The aggrieved students / parents and others may represent their grievance to the convener of the committee either in writing or email to grieveredressal@iare.ac.in

- The GRC shall enquire into the application seeking redressal of grievance and submit its recommendations to the principal for further needful action at his end.

- The Convener, GRC shall call for a meeting as and when representations seeking redressal of grievance is received and submit the recommendations to the principal for further needful action at his end.

- The GRC shall meet at least once in three months and submit its report to the Principal irrespective of whether any representation / Complaint is received or not.

# CRITERION – VI

6.   Governance, Leadership and Management

6.1   State the Vision and Mission of the institution

**Vision:**
To be one of the Nation's premier engineering colleges by achieving the highest order of excellence in Teaching and Research.

**Mission:**
Through multidimensional excellence, we value intellectual curiosity, pursuit of knowledge building and dissemination, academic freedom and integrity to enable the students to realize their potential. We promote technical mastery of Progressive Technologies, understanding their ramifications in the future society and nurture the next generation of skilled professionals to compete in an increasingly complex world, which requires practical and critical understanding of all aspects

6.2   Does the Institution has a Management Information System **YES**

➢   The Academic administration at IARE is completely automated using In-house developed academic Intellect College Management System (ICMS), for academic and administrative purposes. Access to student and parent portals of Intellect CMS login for staff and student performance & attendance result in increased rapport with stakeholders.

➢   The information regarding the details of all faculty, staff and students has been computerized and the required data shall be retrieved in the form required and as and when needed.

➢   Academic Administration system which encompasses admission, timetable, course registration, placement management, hostel management, inventory and purchase management, facilities management, evaluation, grading, certificate generation, finance, budgeting and fee collection

➢   Intellect Campus Management System (ICMS) is in place. The following modules are used and all the activities are automated through the CAMS software.

   •   Automatic generation of ID cards

   •   Office records digitized for archiving

   •   Online registrations of Institutional Electives

   •   Online registrations of Cluster / Department Electives

   •   Records maintained manually (at record room) converted into digital format

   •   Tools developed for conducting conference and workshop

   •   Digitalization of HOD diary

   •   Online registration portal for conducting international conference and workshop

   •   Online registrations

   •   E-learning system

   •   Academics

   •   Examinations

- Finance and Accounting
- Student relationship management systems
- Library Automation system
- Web Portal and Alumni Management system
- Purchased and Stores Management System
- Planning and Development
- Administration
- Student Admission and Support
- Training and Placement
- Library & information science

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

- The IQAC was instrumental in ensuring that the opinion of various stakeholders is obtained before designing the curriculum.
- The Curriculum was discussed at various levels and then presented to the Board of Studies, which includes members from other institutes and industries. This was sent to the Academic Council for approval.
- Course objectives are mapped with the course outcomes. A course end survey is conducted at the end of every course and necessary measures are taken for improvement. The results of mid exams were mapped with course outcomes and the achievement levels are indexed
- Revised Curriculum design and development for IARE-16 regulations were performed for I, II Year UG programs in the academic year 2016-17.
- Strictly adhering to Outcome Based Education Principles while setting question papers.
- Choice Based Credit Systems (CBCS) based regulations are under implementation
- Internalizing the concepts of blooms taxonomy for student development and evaluation
- Periodic feedback on curriculum from stakeholders such as experts from academia, industry, alumni, students and senior teachers.
- The curricula are drafted after several discussions, meetings and interactions with the stake holders:
  - Informal discussions with alumni / students
  - Discussions during DAB that has representation from industry, academia, alumni besides faculty and students (as invitee)
  - DAB is followed by detailed discussions during the BOS

- Subsequently the curriculum is approved after detailed discussions during the AC
- Final approval / ratification of curriculum is by the Governing Body

➢ Several brain storming sessions are conducted both at department and institution level involving faculty, students, alumni, industry representatives, professional and academic experts.

➢ The curriculum design is based on the following

  i) Model curriculum prescribed by AICTE

  ii) Curricular structure

  iii) Syllabus for various competitive exams like GATE, IES, etc.

  iv) Syllabus of various reputed Indian and International Universities

6.3.2    Teaching and Learning

In order to ensure quality teaching & Learning, Innovative teaching methods are implemented. Active Learning methods are implemented to bring innovation with in classrooms. Continuous seminars/ lectures / workshops are arranged for the faculty to enable them to create a learner centric environment.

**Teaching:**

**The practices established are sustained through:**

➢ At the beginning of the academic year, an orientation Program on Pedagogy and practices is conducted for improved teaching skills among newly recruited faculty.

➢ E-Learning solution of automatic recording and distribution of classroom lectures on the flipped class model

➢ Creation of Departmental Advisory Board (DAB) for advice in academic matters

➢ Value Added Program

➢ Animation / Power Point / Smart Classroom facility

➢ To motivate and help students to do minor educational projects in related area / topics

➢ Workshops by Alumni on Current Trends / Technology

➢ Facilitating Internships during the semester breaks

➢ Funding for multi-disciplinary projects

➢ Awards for best student projects

➢ Usage of modern Teaching aids and practices along with self-learning material during teaching.

➢ Concepts beyond syllabus are introduced to students through Self-Learning to generate interest among students.

- Faculty members are trained by Industry to impart industry ready-skills to its students
- Implementing outcome based teaching
- New equipment were purchased by utilizing the DST-FIST financial support
- Blending learning with e-resources through 24X7 available free access to Central Library.
- A detailed evaluation report regarding Mid-Semester tests and regular assignments are formulated in advance and communicated to students
- Monthly attendance record is maintained to identify students who are irregular.

### Learning:

- Peer learning among students facilitated by activities of professional and technical associations.
- Project based learning being practiced to enhance student skillset.

6.3.3    Examination and Evaluation

- The office of the Controller of Examinations was established in the year 2016 after the conferment of Autonomous status to the institute.
- The college strictly follows examination and evaluation schedule set by Institute. The examination and evaluation schedule is mentioned in the college calendar.
- Automation of the examination cell to ensure timely declaration of results to keep the academic calendar on schedule.

**Preparing academic calendar which includes all the academic related activities.**

- Conducting the Continuous Internal Examinations (CIE) and Semester End Examinations (SEE). Processing and publishing results in time.
- Issuing certificates such as Grade Sheet, Consolidated Statements of Grade, Provisional Certificate and Transcripts.
- Sending a list of successful candidates with their Cumulative Grade Point Average (CGPA) to the Jawaharlal Nehru Technological University Hyderabad, Hyderabad for issuing Original Degree Certificate.
- Evaluation of marks comprises internal marks obtained from continuous assessment and external marks secured in End semester examination.
- The final grade is determined by considering marks obtained both in internal tests and end semester examination.
- The Controller of Examinations (COE) office is responsible for the announcement of academic calendar, preparation of question papers,

conduction of Continuous Internal Examination (CIE) tests and Semester End Examinations (SEE), valuations of answer scripts, announcement of results, printing and issuing of grade sheets to the students and recommendations to the University for the Award of degrees. There shall be examinations at the end of each semester, for odd semesters in the month of October/November; for even semesters in April/ May. A candidate who does not pass the examination in any course(s) may be permitted to appear in such failed course(s) in the subsequent examinations to be held in October / November or April / May. However candidates who have arrears in Practical's shall be permitted to take their arrear Practical examination only along with Regular Practical examination in the respective semester.

➢ Right from the conferment of autonomy, the institution has established the office of controller of examination. The controller of examinations is overall in-charge of conduct of examination. The Institution has introduced wide ranging examination reforms.

➢ The academic rules and regulations applicable to autonomous programs (amended) was released during 2016.

➢ In addition to academic rules and regulations, the regulations governing examinations, evaluation and mal-practice etc., have been manifested.

6.3.4    Research and Development

➢ Funding from various state and national agencies like UGC, DST- FIST for research development was availed to the maximum. Incentives were given to the teaching faculty on publishing SCOPUS index journal papers in National and International - Rs.10000 for a publication.

➢ The Institute has established Research & Development Centre at the Institution level to promote Research & Innovation among the faculty & students.

➢ The weekly meeting of Researchers was successful for mutual knowledge sharing in interdisciplinary scientific research.

➢ The institution facilitates faculty participation in research by granting leave and providing financial assistance for attending seminars, conferences, FDPs etc. Adequate infrastructure like well-equipped laboratory, computing facilities and library are made available to carry out research. Faculty members also act as PhD supervisor for internal and external candidates.

➢ Planning for the establishment of research centers sponsored by the institute in the thrust areas of the departments.

➢ New research clusters involving students at UG and PG level.

➢ Research incentives and awards to members of faculty for publishing in reputed and high impact factor journals

➢ Conducting research meetings on weekly basis to facilitate inter-disciplinary research.

➢ Members of faculty mentoring students to transform innovative ideas into products.

6.3.5    Library, ICT and physical infrastructure / instrumentation

### Modern Central Library

The IARE Library is considered one of the most resourceful centres in twin cities since it caters to the current educational need on a wide scale. The institute has a duplex library which is spacious and voluminous enough to accommodate more than 35000 volumes of books. The first floor has Circulation Books, News Papers, Back Volumes of the Periodicals whereas the Second floor accommodates Reference Books, Current Periodicals, etc.

➤ It has a modern infrastructure with a reading capacity of 500 students and 35000 volumes of books. It has subscribed to more than 180 online journals of IEEE, ASME and it is subscribing more than 156 Indian Journals & Magazines in print.

➤ Digital library with 40 systems to access E-journals, E-books, E-learning, Multimedia Centre and photocopying are made available for the convenience of the users. N-LIST E resources (Through INFLIBNET), NPTEL facility (National Programme on Technology Enhanced Learning) to access video lectures and Membership of DELNET (Inter library loan) for resource sharing. Library is fully computerized with bar-coding system.

➤ The library has also been Information Centre providing information and intellectual requirements to its students and faculty with user-friendly approach. It offers a fully integrated and dynamic environment for conducting academic study. Multiple copies ensure that resources are easily available in Reference Section and Stack Section as well.

➤ The library has a collection of good number of books meeting the requirement of students and faculty. New titles and volumes of text books are added every year continuously, by allocating required budget to procure books and journals.

➤ Information and Communication Technology has been made an integral part of teaching learning process by converting some of the conventional class rooms into e-class rooms. These rooms have been equipped with LCD projectors, digital boards and audio systems.

➤ Our library has an impressive collection of books, journals, newspapers and huge variety of books. College library also has e-journals database, wide variety and collection of online to access e-journals.

➤ Sufficient systems are there for data entry, transaction, and gate register. Printers are there for generation of barcode labels, Issue and Return Bill printers and Ordinary printers. Electronic security gate has been installed and every book is embedded with a magnetic strip for security purpose.

➤ A wall mount television is placed at the entrance of the library to display important information. Eight CCTV"s is placed at the necessary place. In Digital Library there are 90 systems for the benefit of the users to browse the E-resources.

### ICT:

The institute regularly increases ICT facilities for classrooms, tutorial rooms and Laboratories. Presently, each Department has 2 class rooms that are equipped with LCD Projector-audio system, Wi-Fi facility and wired internet/ network facility, each department is provided Laptops for faculty usage in interactive teaching.

### Computer Centre

Our students have unrestricted, round-the-clock access to air-conditioned computer laboratories equipped with structured fibre optic and UTP cabling network and other relevant software. The students are privileged to have access to our state-of-the-art computer laboratories, which are home to over 1170 computers (APPLE, DELL, LENOVA and HP make), 11 servers, 117 printers and over 32 laptops (SONY, DELL, SAMSUNG, ACER and HP make) with a dedicated network. The Overall ratio of computers to students is nearly more than the number recommended. The Computer laboratories are being upgraded from time to time to provide the best computational infrastructure.

The Computer Centre houses powerful servers, which provide computational environment comprising of multiple operating systems - Microsoft Windows, Linux and Unix, and can be accessed from any of the nodes attached to the servers across the campus.

The Department of Information Technology maintains an institutional membership in the MSDNAA. What this means for our students is that you have access (free of charge) to all the latest Microsoft development tools. You may check out the original CD's for the package you desire (24 hour checkout only), and you will be given a label with its activation code.

### Hardware Facility at Computer Centre:

Windows Server: Hewlet Packard ML 350 G5 Server, Dual Quad Core XEON E5410 Processor @ 2.33 GHz Linux Server: Hewlet Packard ML 350 G5 Server, Dual Quad Core XEON E5410 Processor @ 2.33 GHz Office Automation Server: HP Proliant ML 110 G4 Server, Xeon Dual Core Processor @ 1.8 GHz Online Exam Servers: Two numbers of Wipro NetPower Intel Xeon Dual Processor @ 2.8 GHz ECAD Server: Wipro NetPower Intel Xeon Processor @ 2.8 GHz Internet Server: Wipro NetPower Intel Xeon Processor @ 2.8 GHz HP Colour Laser Printers TVSE Dot Matrix Printers HP Scanners Sony DLP Projectors

### Software Facility at the Computer Centre:

Microsoft Academic Alliance Software (MSDN), Red Hat Enterprise Linux, WINDOWS Advanced Server, IBM Rational Rose UML 60 user Software, IBM Rational Tester, Oracle 10 G 500 user Database Software, Macromedia Flash, Visual Studio, C, C++, Java Language Compliers, MS OFFICE MS Office, MS Office Visio Professional 2003, .NET Professional, Professional CADENS, VLSI

Tools, Norton Semantic Endpoint Protection Anti Virus, ANSYS Academic Teaching Introductory V12.x (Ansys Multi physics, Fluent Full capability solver, Ansys CFX full capability solver, AnsysAutodyn, Ansys Workbench, Ansys Meshingtools (including ICENCFD, MCAD Geometry Interface) PRO/ENGINEER University Lab Bundle, MATLAB 100 Users (Control Systems Toolbox, Signal Processing Toolbox, DSP Systems Toolbox, Communication Systems Toolbox, SIMULINK, Simpower Systems, Neural Networks, Image Processing, Wavelet etc.).

6.3.6     Human Resource Management

➢ The Institute has a well-defined policy to academically recharge and rejuvenate teachers (e.g. providing research grants, study leave, nomination to national/international conferences/seminars, in-service training, organizing national/international conferences etc.

➢ As per the institution policy each faculty can get two deputations (one for national and one for international seminar/conference) in a year. They are provided with financial support towards travel and registration.

➢ The Institute also provides financial support for organizing national/international symposia and conferences from the General development Grant.

➢ To improve the faculty profile by encouraging faculty members to complete Ph.D's and enhance Research Publications through in-house and international collaboration. To arrange FDPs for achieving these objectives.

➢ Recruitment of the employees, the salaries, benefits of the employees are given as per UGC norms. Teachers also attend orientation and refresher courses in the university to enhance their skills for teaching and learning.

➢ The faculty and staff requirements are assessed based on the workload as per the AICTE norms.

➢ Before commencement of every academic year the faculty and staff requirements are assessed and the vacancies are advertised in leading dailies besides placing the same in the Institution's website. Duly constituted selection committees recruit the faculty and staff.

➢ A self-devised faculty-self appraisal system is followed to mentor and monitor faculty competence.

➢ Quality enhancement measures like deputing to Faculty development programs in subject and capacity building domains etc.

➢ Effective system of performance appraisal through Annual Performance Index (API).

6.3.7     Faculty and Staff recruitment

➢ The institute has a well written policy on appointment of staff, training and development, compensation and handling grievances. Secretary and Correspondent of the college are providing leadership and able

administration to carry out various requirements of effective Human Resource management in place.

- ➢ Advertisements inviting applications from qualified candidates are published in leading newspapers. Applicants who meet the eligibility criteria stipulated by the AICTE are called for an interview- cum- trial teaching session. The selection panel consists of the Principal, Secretary, members of the Management, Head of the concerned department, a senior member of the faculty and an external subject expert. Candidates deemed suitable to meet the institutions requirements are appointed.

  - o Strictly adhere to the UGC Norms
  - o First Step-General Interview by Principal of the Institute
  - o Second Step-Subject and skill interview by department
  - o Third Step-Demonstration
  - o Fourth Step-Interview by Management
  - o Finally filtered candidates were called for selected candidate
  - o The Management approves the Budget for such newly created posts. The qualification, eligibility criteria, pay and pay scale are as per AICTE (Faculty) and State Government norms.

6.3.8    Industry Interaction / Collaboration

- ➢ The Departments and Placement Cell of the college facilitates exposure of Industrial atmosphere to students and subsequent help in placement of young graduating Engineers in Industries across the Country.

- ➢ In an attempt to bring the industries and the employers to the campus and interact with the staff and students, industry Expo is organized in the college regularly. At that time, a department level interactive session was organised for the teaching staff of the department along with the outside participants. This provided constructive feedback on the curriculum and suggestions for their improvement. The board of studies usually consists of at least a member from the industry to ensure the industry need is taken care of in the curriculum development. Industry representation is also ensured at the time of restructuring of curriculum at a periodical interval.

**The collaboration focuses on achieving the following functions:**
- ➢ To build and maintain excellent rapport with the Top Management of various Organizations and Industries and forge collaborative Industry-Academia alliances
- ➢ Initiating Memoranda of Understanding with major companies, research agencies and institutions to fetch funded projects and bring about improvement in infrastructure and teaching methodologies to enhance exposure of students and faculty to industry practices and developments in technology
- ➢ Facilitating visits by senior industry leaders for interaction with faculty and Students

- Securing sponsorships from industry for technical events like conferences, seminars, symposia, workshops and student contests through strategic relationships
- Seeking the help of companies to spare working products / prototypes for academic demonstration purposes
- Facilitating in-plant training, industry visits, summer and final semester internship for students across all disciplines and campuses
- To diagnose and assess the problems being faced by the organizations in different functional areas and design appropriate methods/ approaches to address those specific problems of the organizations.
- To assess the training needs of organizations in different functional areas and accordingly design suitable training programs to inculcate the latest concepts and techniques in the relevant field of management.

6.3.9  Admission of Students

### Admission Procedure

Upon recommendations of University Grants Commission (UGC), New Delhi and the State Government, Jawaharlal Nehru Technological University Hyderabad has conferred Autonomous Status to the Institute from Academic year 2016-17, whereby the College will award Degree on behalf of Jawaharlal Nehru Technological University Hyderabad.

Admissions to the Institute are made along with the other engineering colleges in the state through a common entrance test conducted by the Govt. of Telangana.

### The Eligibility Criteria for Admission to B.Tech Courses :

The minimum qualification for admission to first year of the B.Tech course is a pass in the Intermediate (10 + 2) conducted by the board of Intermediate education, Govt. of Telangana or any other examination recognized as equivalent thereto with Mathematics, Physics and Chemistry as optional subjects.70 % of the seats are allotted based on the merit in the Engineering and Medical Common Entrance Test (EAMCET) conducted by Govt. of Telangana. 30 % of the seats are earmarked for Management / NRI candidates. In addition to the above, Diploma holders are admitted in second year of B.Tech to the extent of 20% of intake   based on the merit in the Engineering Common Entrance Test (ECET), under lateral entry scheme conducted by Govt. of Telangana.

### The Eligibility Criteria for Admission to M.Tech Courses:

M.Tech - Aerospace Engineering: B.E / B.Tech in Aeronautical Engineering / Mechanical Engineering with valid GATE score / based on the rank obtained in the test conducted by JNTU.

M.Tech- Computer Science & Engineering: B.E / B.Tech in Computer Science and Engineering with valid GATE score / based on the rank obtained in the test conducted by JNTU.

M.Tech- Embedded Systems: B.E / B.Tech in Electronics and Communications Engineering / Electrical and Electronics Engineering / Computer Science and Engineering / Information Technology / Electronics and Instrumentation Engineering with valid GATE score / based on the rank obtained in the Test conducted by JNTU.

M.Tech- Power Electronics and Electric Drives: B.E / B.Tech in Electrical and Electronics Engineering with valid GATE score / based on the rank obtained in the test conducted by JNTU.

M.Tech- Computer Aided Design / Computer Aided Manufacturing (CAD/CAM): B.E / B.Tech in Mechanical Engineering with valid GATE score / based on the rank obtained in the test conducted by JNTU.

M.Tech - Structural Engineering: B.E / B.Tech in Civil Engineering / Construction Engineering with valid GATE score / based on the rank obtained in the test conducted by JNTU.

**The Eligibility Criteria for Admission to MBA Course:**

➢ The minimum qualification for admission to first year of the MBA is a pass in undergraduate course (10 + 2 + 3).

➢ 70% of the seats are allotted based on the merit in the Integrated Common Entrance Test (ICET) conducted by Govt. of Telangana

➢ 30% of the seats are earmarked for Management / NRI candidates.

6.4   Welfare schemes for

| Teaching | • Group Insurance Policy |
|---|---|
| | • Uniforms for the supporting staff |
| Non-teaching | • Advance to meet emergency expenditure |
| | • Financial aid to educate the children of supportive staff |
| Students | • Student Welfare Fund for fee waivers and concession. |
| | • Conduct of student initiated techno-cultural events at institute level |
| | • Organize orientation programs for the first year students on all matters relating to academics, student discipline and services |

6.5   Total corpus fund generated          :     **Rs. 254.85 lakhs**

6.6   Whether annual financial audit has been done    :     **Yes**

6.7    Whether Academic and Administrative Audit (AAA) has been done?

| Audit Type | External | | Internal | |
|---|---|---|---|---|
| | Yes/No | Agency | Yes/No | Authority |
| Academic | -- | -- | Yes | IARE |
| Administrative | -- | -- | Yes | IARE |

6.8    Does the University/ Autonomous College declares results within 30 days?

For UG Programmes          :      **Yes**

For PG Programmes          :      **Yes**

6.9    What efforts are made by the University/ Autonomous College for Examination Reforms?

The faculty and student feedback is taken, analysed & implemented on regular basis post examination to continuously keep improving the examination process. More stringent rules have come for stopping the use of unfair practices in the examination by students.

Under the Grievance Redressal Process, photocopy of the answer book is supposed to be collected by the respective student in person. It was later decided that the answer book under this process could be either scanned and sent to the respective server login, or a person authorized by the student concerned should be given the photocopy of the answer book on receipt of application with fees applicable only when the results of final / re-examinations of final trimesters / semesters are declared and when students are not expected to be on campus

  ➢   Revaluation
  ➢   Recounting
  ➢   Grading System
  ➢   External Evaluation
  ➢   Early publication of results online

6.10   What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

  ➢   The autonomy review committee from the University provides insights on areas of concern in autonomous colleges. It enables the autonomous colleges to revive its autonomy in a meaningful and relevant manner
  ➢   The Institute does not have any provision for according the status of autonomy to the institution
  ➢   The Institution is fully independent and autonomous.

- Bringing in a change by introducing Choice based Curriculum
- Providing options like Finishing School to take value added courses for better employability
- Providing more options for elective courses

**Innovation in curriculum (content, delivery and assessment) to meet the needs of the changing global need**

- In view of having Academic Autonomy, there exits scope for continuous revision of curriculum
- Every two years, the curriculum goes through revision, to include additional courses / additional course Outcomes, to ensure graduates acquire have the essential expected Global skills
- Introduced Co-Engineering Labs (Co-labs) replacing the conventional workshops
- The curriculum of various reputed Indian and International Universities have been referred to while designing the curriculum
- The prescribed syllabus for various competitive exams like GATE, IES, IAS, GRE etc. were also referred
- Linkages / MOU with leading industries to bridge the gap in the curriculum

**Academic Excellence through autonomy**

- Effective implementation of Autonomy lead to effective implementation of OBE
- Effective implementation of OBE lead to accreditation by NBA
- Curriculum re-visited to include recent advances
- Stake holders suggestions considered during curriculum design
- Departmental Advisory Board created for academic mentoring and monitoring
- Regular participation in IUCEE webinars

**Innovative Practices Deployed**

- Academic Audits (Internal / External) for continuous improvement
- Awards for best student projects
- Course based laboratories
- Departmental Advisory Board (DAB) for academic mentoring
- Industry participation on various Boards of Governing Body, Academic Council and Board of Studies.
- Extension Lecturers
- Financial support to student for participating in competitions
- Funding for multi-disciplinary projects

- ➢ Industrial / site visits
- ➢ Inter-Departmental student projects / Internships during Semester breaks
- ➢ Offering Elective Courses along with the Industry / Hands-on workshops
- ➢ Open Ended Experiments in laboratories
- ➢ Outcomes Based Education (OBE)
- ➢ Project Based Learning
- ➢ Mentoring System-Progression of a student is continuously monitored

6.11 Activities and support from the Alumni Association

The college has its Alumni Association tends to strengthen stake holder relationship. The association actively participates in decision making and concentrates on college development. The Alumni Association contributes various services to the institution in general and to the students opting for higher studies and getting employment in particular. Involvements of Alumni are as follows

- ➢ Involvement in curriculum development.
- ➢ Conducted seminars for the students.
- ➢ Conducting interactive sessions for students and providing opportunities for students in worldwide universities.
- ➢ Support for projects.
- ➢ Feedback for the Alumni is being continuously received for academic
- ➢ Development and career opportunities for students (as a BOS member).
- ➢ Contributing of learning resources to the department library.
- ➢ Information about placement / job openings across the country.
- ➢ Recommendations for curriculum modifications based on industry requirement.
- ➢ Arranging industrial visits/ educational trips.
- ➢ Invited talks are arranged.
- ➢ Internships for students.
- ➢ Alumni mentoring the students, conducting mock interviews, providing industrial and professional tips etc.
- ➢ Conducting guest lectures for students as part of Career Vision approach.

6.12 Activities and support from the Parent – Teacher Association

Parents Meet was conducted on 17 October, 2016 and 26 March, 2017. More than400parents attended the programme and interacted with the respective Student Counsellors and HODs.

To foster and promote good relationship among the members of the teaching staff, students and parents/guardians, Parent Teacher Meetings are organized from time to time in the college wherein parents are informed about their wards' academic performance and attendance records. Feedback from parents as well as from students is taken.

- Feedback on facilities
- The Parent – Teacher Association, the backing force of our institution, aims at the promotion of over- all development of the students.
- PTA meetings were organised regularly.
- Several attractive cash awards and scholarships were instituted for the students who excel in academics and extra- curricular activities.
- Alumni also helped in connecting their Industries to Institute.
- Feedback on student progression
- Feedback about the curriculum, infrastructure, etc.
- Acting as positive role models to current students
- Every Department conducted at least two meetings per year and got their suggestions to improve the quality of education, discipline etc.

6.13 Development programmes for support staff

- Staff Development Programs in skills and communications.
- Training programs are conducted on regular basis either by the faculty of by the technical people from the equipment / instruments suppliers to up-grade their skills in handling and maintaining them in laboratories.
- Adequate training and instructions are given on regular basis particularly when ever laboratory curriculum is changed meeting the requirements.
- Basic computer training is provided to the supporting staff. It enables the staff to effectively use the computer for various departmental works.
- Staff members are encouraged to pursue higher education and short term courses for knowledge upgradation. Financial support is given for acquiring higher qualification.
- Providing ESI, EPF facilities for supporting staff members.
- Rain water harvesting has been in place to assure an independent water supply during water restrictions
- Necessary steps taken towards several plantations across the campus. The vehicle traffic is restricted in the campus in view to reduce carbon emission. Well grown plants around the campus are maintained to reduce the effect of pollution. The greenery initiation has been implemented in a phased manner.

6.14 Initiatives taken by the institution to make the campus eco-friendly

Institution itself has taken stringent measures for the conservation of nature and natural resources. The measures are as follows:

➢ Planting trees in the campus
➢ Separate bins are kept in the campus for segregating waste
➢ Phasing out of incandescent lamps and partial phasing out tube-lights in favour of CFLs
➢ Minimizing of air conditioner use through management controls
➢ All lab equipment's are switched off, when not in use. Laser printers in campus are run on lower energy consumption mode to avoid loss of energy. Digitalization is encouraged so that use of stationary is minimal.
➢ Maintenance of the rainwater harvesting facility

# CRITERION – VII

7. Innovations and Best Practices

   7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

   ➢ Quality Enhancement in Engineering Education (QEEE) –Implementation of the program at IARE

   ➢ The campus student forums participated in wide range of co-curricular, extra-curricular, social and community development activities. The topics ranged from Engineering, Science, Environment, Literature, Music, Culture, Dance, Photography etc., Throughout the year numerous events are organized for the students to pursue their hobbies, through the societies

   ➢ Lecture captures system for facilitating online learning for students.

   ➢ Initiative towards establishment of new research labs/ centres in the thrust areas of the Institution

   ➢ Monitoring Research activities at institute level through research advisors

   ➢ Parent Orientation Meet by Senior Management enlightening best practices of the institution

   ➢ Hackathon – A continuous online assessment process.

   ➢ Story Board

   ➢ Training Programmes for students First-Rate Placements

   ➢ College Website redesigned & updated.

   ➢ More Video Conferencing Facility

   ➢ The College has developed an in-house feedback system to collect the course wise feedback from student and automatically analyze the results and generate the faculty report about that course.

   ➢ Some of the teachers have adopted modern pedagogic styles and ICT in their classes.

   ➢ Promote and enhance the inter-disciplinary learning by the faculty members as well as the students through inter-department lectures.

   ➢ In addition to the regular classes and laboratories the additional practice laboratories are accommodated for technical trainings to the students:

      • METE : Modelling and Experimental Tools in Engineering
      • ATP: Advance Technical Programming Lab
      • Weekly Tests (Sunday Tests) - Danush test (Technical/Aptitude/English)
      • New Research Lab on IoT and Data Analytics
      • Field work/ Internships
      • Oral presentation
      • Technical Seminars/ Symposiums/ Workshops

- Technical paper presentations/ Group discussions
- Providing access to e-journals and e-books
- NPTEL courseware and are accessible online in digital library
- Subject materials are available in digital form in the institution website

The impact of such innovative practices leads to get exposure on new modern methods of teaching/practice and better understanding of the knowledge within the allotted time. It helps to assess and improve the teaching-learning process that happens from the formative to summative period.

7.2  Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

- The IQAC kept track of the schedules/plans and implementation of the various academic and administrative activities and intervened whenever necessary with suggestions to ensure the maintenance of quality parameters.
- Open Auditorium Completed
- Internet Facility is increased
- More Video Conferencing
- Basket Ball Court is under construction
- In order to improve teaching Learning processes, the faculty were trained in skill development training.
- FDP's were conducted on the use of Moodle
- Active learning methodologies were implemented to improve learning processes
- As against the plan to increase the no. of faculty, their strengths have been improved considerably.
- The classrooms are ICT enabled and are equipped with Audio- Visual aid.
- Promotion of quality research culture was also planned. This has been accomplished by the increase in the no. of quality research papers. A large no. of faculty is also engaged in research projects.
- In order to improve attendance, results, placements, classroom and lab quality, quality indices have been developed for monitoring them. Similarly the curricula/ Syllabi are oriented to suit the needs of the program and the outcomes match the objectives.

7.3  Give two Best Practices of the institution (please see the format in the NAAC Self-study Manuals)

1. **Title of the Practice: Usage of Intellect Campus Management System (ICMS) Software**

   **Objectives**

   ICMS tool is meant to simplify the task of collecting and disseminating voluminous day to day data. In today's fast pace of communication, it is

important that information is delivered in a correct and timely manner. These tools make the entire process simpler, with a single interface to satisfy all the needs.

## The Context

The challenge is to communicate with the stakeholders, mainly students and parents in a simple and effective manner. The process of delivering updates related to the latest class time table, attendance, test performances, assignment submission schedule could be easily monitored. So is gathering feedback from the students, which otherwise is cumbersome process.

## The Practice

- ➢ The class time tables and faculty allotted for each section are entered prior to commencement of the semester.
- ➢ Class attendance updated on a daily basis and parents intimated about the absentee status.
- ➢ Internal Test marks entered after each test is sent to students/parents.
- ➢ Assignment copy is uploaded and published.
- ➢ Feedback from students could be collected at periodic intervals and the results shared with concerned faculty for improvement.

## Evidence of Success

- ➢ The practice leads to more simplified communication.
- ➢ A comprehensive solution too many issues.
- ➢ Handling and managing data is simplified and is appreciated by students
- ➢ Problems Encountered and Resources Required
- ➢ The matters that impede the process could be any of the following:
- ➢ Initial training is needed to handle the tool.
- ➢ Timely uploading of information is very essential.
- ➢ No confirmation of the message being read, until personally acknowledged.
- ➢ Feedback from students without awareness of the process or simply out of mischief could diminish the effectiveness of the feedback taken.

## Problems Encountered and Resources Required

- ➢ Skilled and motivated manpower to handle the task.
- ➢ Time allocation for these activities.
- ➢ A place with a dedicated system with internet connectivity.
- ➢ Stakeholder involvement in the whole process.

### 2. Title of the Practice: Compensatory Classes – a program meant for slow learners

**Objectives**

To enable slow learners to complete the courses in their own pace and provide an opportunity to students who are unable to sit for the end semester examinations due to lack of attendance.

**The Context**

\Compensatory courses may be announced by a Department, by the HODs, with the approval of the Principal. The course will be conducted during the regular academic session either during the weekends or in the evenings after the regular classes as decided by the Principal and the number of hours that will be conducted will be 75% of the hours specified in the curriculum for a course. Maximum two courses will be permitted to a student during the semester and the student has to have at least 75% attendance in these courses.

**The Practice**

➢ The evaluation process for compensatory courses consists of only end semester examinations and no internal assessment process. Student shall have to score the passing minimum in the end semester examination only and the marks scored in which will be given full weightage.

➢ Courses will be offered by the departments only to students detained for lack of attendance in those courses. No student should register for more than two compensatory courses offered during a semester and totally not more than 8 courses in the normal duration of study.

➢ Compensatory courses will be announced after the publication of results of end semester examinations of odd/even semester and the conduct of these courses will not go beyond the last working day of the semester. A student will have to register within the time stipulated in the announcement.

**Evidence of Success**

➢ Students are able to achieve a pass percentage as near to the regular one

➢ Out of 7/8 courses in a semester, they can do 1 /2 under compensatory courses thereby lightening their burden according to their capacity during regular study

➢ Students who suffer from lack of attendance due to unfortunate circumstances like medical problems, loss of near and dear ones in the family make use of these courses

**Problems Encountered and Resources Required**

➢ Even some capable students sometimes opt for these courses practice of which is    be discouraged.

➢ Being a small group, faculty sometimes tend to be liberal in awarding marks in these courses

7.4   Contribution to environmental awareness / protection

- The college is located in a rural area, being a Green Campus enhances and ambient and environmental quality.
- The campus is maintained as smoke free by parking car &two wheeler in separate parking area and plastic pollution free by continuous education to the students.
- The college is implementing energy conservation activities by utilizing solar energy and minimum utilization of conventional energy resources.
- The practice of rain water harvesting, food waste management techniques are being followed in the campus.
- IARE seeks to provide an education that combines social, cultural and environmental awareness with the mission to promote wisdom, spiritual growth and contribution to the common good.
- demonstrate its strong commitment to environmental responsibility through the following activities:
  - Strive within the limits of practical considerations to conserve energy and resources, reduce waste, purchase environment friendly products and minimize adverse impact on the surrounding environment.
  - Recognize and promote efforts to increase a deep, aesthetic, spiritually based awareness of our connection to the environment among the students of this institute.
  - Every year plantation program is conducted in the campus.
  - E-Waste management

7.5   Whether environmental audit was conducted?        **Yes**

7.6   Any other relevant information the institution wishes to add. (for example SWOT Analysis)

**Strengths:**
- Well experienced, qualified and dedicated staff.
- One of the few colleges in India offering UG and PG in Aeronautical engineering.
- Reasonable fee structure.
- Payment and leave facilities as per AICTE norms
- Lush green and clean campus.
- Well equipped, furnished library with rich collection of reference books publication sand journals
- Auditorium with good capacity

**Weakness:**
- Placement in core industries
- Percentage of interdisciplinary projects
- Facility of incubation center
- Functional MoUs with foreign universities and organizations.

**Opportunities:**

➢ Developing research culture amongst students and teaching staff.
➢ Applying for more funded projects.
➢ Promoting environmental sustainability and increasing environmental awareness.
➢ Inculcating human ethics, values and discipline in students.
➢ Improvement in involvement of Alumni in the development of Institute.

**Threats/Challenges:**

➢ Placement Issues
➢ Saturation in the Engineering education market.
➢ Increased in disciplined behaviour amongst students.
➢ Reduction in attention span of students.

8. **Plans of institution for next year**

➢ To promote research-oriented activities.
➢ To further enhance MOU's and collaborations international universities / organizations for academic and research.
➢ To promote innovation, creativity and entrepreneurship among students.
➢ To improve the quality of faculty publications
➢ To Strengthen the students projects as patentable
➢ Implementing continuous evaluation technique in class rooms and for faculty performance
➢ Well-furnished IQAC office setup
➢ Improving the staff Quality by making them to participate for various skill development programs.
➢ Improving the placement opportunities by improving the their Technical skills
➢ Upgrading laboratories
➢ Strengthen Industry Institute Interaction through Installing of Industry Institute Partnership Cell (IIPC).
➢ Conducting Entrepreneurship training and certification programme to students from their first year onwards through Entrepreneurship Development Cell (EDC)
➢ Plan to obtain Research Centre Recognition for CSE, ECE, Mechanical, Civil departments
➢ To seek further funding from national and International agencies

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