**Goals and action plans on the SWOC analysis**

**Mechanical Engineering**

**1. Weakness**

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| **S.No** | **Weaknesses** | **Short Term Goals** | **Long Term Goals** | **Action Plans** |
| **1** | Research output needs a substantial improvement | * Organize training programs on latest developments in their domain annually. * Encourage for quality research paper publications from the faculty of **SIG (Special Interest Group)** | * Research grant of minimum 10 Lakhs from each SIG. * Each faculty to have one quality research paper in SIG group annually. | * Training programs are planned in the emerging areas to create awareness and expertise. * Apply research proposals for getting research grants by encouraging staff to work in their area of expertise. * Staff are encouraged to publish quality publications in national/international journals as well as conferences by getting sponsorship from the institute. * Incentives will be given as per the institute norms for the good quality publications and successful project proposals |
| 2 | Strong Alumni base need for the institute growth. | * Interactive session to be arranged with batch of 2 - 3 alumni with the graduating students. * Invite and involve alumni as resource persons for delivering guest lectures, conduct seminars and workshops. | * Alumni to deliver lectures or seminars on current industry needs and latest trends of industry. * Generate Alumni sponsored fund to establish advanced/research facility. | * To make alumni network stronger by planning interaction programs for current student groups with alumni * To make the student community aware of latest industry requirements and opportunities. * Department requisites for advanced/ state of art facility to be sponsored by alumni. |

**2. Opportunities**

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| **S.No** | **Opportunities** | **Short Term Goals** | **Long Term Goals** | **Action Plans** |
| **1** | Motivate the faculty without PhD to pursue the PhD as a priority. | * 60% of the faculty should have of Ph D | * 100% of the faculty should have of Ph D | * Faculty are encouraged to accelerate the research as a part of their doctoral program. |
| 2 | MOUs with higher level institutions with an objective of deputing faculty for carrying out PhD/collaborative projects/Research shall be encouraged. | * Collaborate with industries and higher-level institutions to make MOUs to conduct research and publications. | * Collaborate with industries and higher-level institutions to carryout joint research/ funded projects | * Faculty are encouraged to visit the industries/higher level institution to collaborate for research and consultancy projects * Faculty are encouraged to prepare collaborative proposals for funding agencies. * WS/FDP/STTP to be organized by inviting the industry experts and faculty from higher-level institutions as resource persons on latest technologies and emerging trends. |
| 3 | Efforts shall be made to invite core industries for campus placements. | * Number of core companies for campus placements to be increased. | More core companies are invited with attractive packages. | * Improve the technical background of students in emerging areas by encouraging them to register online courses like NPTEL, Coursera, MOOCS etc. * Staff will be given instructions to intensify mentoring sessions to make aware of students on current industry needs and guide them to improve their technical skills. * M.Tech programs strengthened by getting quality in admission and providing good prospects after awarding the degree. |
| 4 | A High-End Research Centre such as Material Characterization may be established to strengthen the opportunities of getting sponsored projects. | * Establish Research centre on materials characterization. | Research facilities for Materials Characterization to be created through sponsored projects | Advanced tools or software and State of art equipment is made available in the laboratories. |
| 5 | Staff welfare measures such as Housing Loan, Vehicle Loan, etc. may be given a thought promoting loyalty of the employee to the institution. | * Staff shall be provided vehicle loan based on repayment without interest | Staff shall be provided Housing loan, vehicle loan apart from urgent financial support on medical grounds based on repayment with standard bank interest. | Staff requests are recommended for favourable action. |
| 6 | Funding:  students to promote innovation - Student participation in Innovation, Incubation and Entrepreneurship activities | * Generate entrepreneurs * Encourage students to innovations and apply for patents. | * Encourage startups & Technology incubation. * Encourage students to apply for Intellectual Property Rights and patents. | Student innovations are encouraged to create academic/research projects from developing ideas to products. |

**3. Challenges**

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| **S.No** | **Challenges** | **Short Term Goals** | **Long Term Goals** | **Action Plans** |
| 1 | Industry-Institute interaction may be improved | * Industrial visits are organized for students. * All doctorates should be associated with at least one industry. | * For each course 2-3 guest lectures will be delivered by Industry personnel. | * Invite industry personnel to deliver the guest lectures. * Invite industry personnel to deliver few topics of the course for B.Tech and M,Tech programs. * The coordinator of industrial visits will be identify the list of industries related to the Mechanical Engineering in and around the Hyderabad to carry out internships and projects. |
| 2 | Attracting quality students for admissions in the recent advancements and opportunities in the field of Computer Science and IT | * To provide training in emerging technologies in the area of computer science and IT. | * To conduct academic projects (interdisciplinary) with applications of emerging technologies in the area of computer science and IT. | * Encourage students to carryout interdisciplinary projects. * Train the students in the emerging technologies in the field of computer science and IT. |
| 3 | Improving sponsored research projects, consultancy, quality publications and patents in order to improve NIRF ranking opportunity. | * Faculty are encouraged to carryout sponsored/ consultancy projects. | * Acquire research grant from funding agencies. | * Faculty are encouraged to publish papers, patens/IPR writing proposals to funding agencies, Industry interactions etc. * Faculty as supervisors of B.Tech and M.Tech academic student projects with a motto of quality projects and converting them into a publications. |
| 4 | Improving Core and quality placements | * Number of core companies for campus placements to be increased. * More core companies are invited with attractive packages | * Establish corporate training center for MNC companies in the core sector | * Industry need based curriculum is considered during revision. * Department offers minor and honors degrees for UG students by choosing allied area of emerging technologies. * Department need to be discussed with MNC companies to establish corporate training center in the institute. |