

ESTD : 1977

VELAGAPUDI RAMAKRISHNA  
**SIDDHARTHA ENGINEERING COLLEGE**  
(Autonomous)

KANURU, VIJAYAWADA - 520 007

(Sponsors : Siddhartha Academy of General and Technical Education)

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An ISO 21001 : 2018 Certified Institution

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Dt : 20/1/25

## Best Practice - 1

### Title of the Best Practice: Accelerating Innovation through Industrial Collaborations

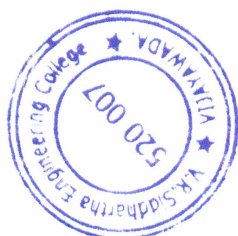
Industry professionals actively contribute as Board of Studies (BOS) members, in developing the curriculum to equip students with advanced skills. Programs like student internships, faculty training in industries, workshops by industry experts, have enhanced placement opportunities fostering a culture of innovation and readiness for the industry.

### Objectives of the practice

- To transfer research outcomes into market-ready products for commercialization and patents, thereby addressing the objectives of Viksit Bharat 2047 and enhancing the institution's visibility.
- To establish innovation hubs and incubators that encourages start-ups and entrepreneurship in collaboration with industries
- To facilitate funding for research projects, innovation labs, and technology advancements.
- To provide students with internship opportunities for hands-on, real-world experience
- To bridge the gap between academics and industry by designing relevant, practical curriculums with industry experts.

### The Context

In alignment with NEP 2020 and objectives of Viksit Bharat 2047, which emphasize the importance of industry collaboration in fostering innovation, academic institutions are increasingly partnering with industry, focusing on key areas like skill development, employment, and inclusive human resource development. Additionally, industrial collaboration supports the goals of Industry 4.0 and Industry 5.0, which highlight the importance of automation and human involvement for sustainable development.



## The Practice

- Institution has already signed several Memorandums of Understanding (MoUs), with industry partners, clearly defining roles, expectations, and the terms of collaboration.
- Industry-related courses are included in the curriculum and delivered by industrial persons to provide students with practical skills and prepare them for the job market.
- Multiple industry-collaborated labs in the institution is providing hands-on experience to meet the industry requirements.
- Internships and collaborative projects are enhancing the research and innovation skills of the students even during their studies.
- Funding have been secured from both the government and industry partners, to support joint research initiatives

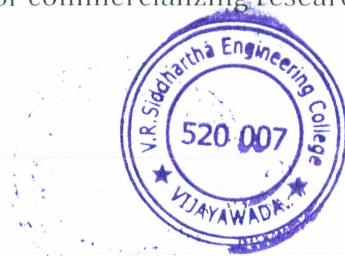
## Evidence of success during the year

S.No	Industrial Collaboration Outcomes through MoUs	Total
1	Number of MoUs signed with industry partners	27
2	Student Internships	2879
3	Publications & Patents	Publications - 449 Patents - 46
4	Funding secured from both government and industry partners	177.77 Lakhs
5	MoU related placement in industry	512
6	Industrial offered courses	5
7	Workshops, seminars, and events conducted to foster the exchange of ideas and best practices between academia and industry	47

## Problems encountered and Resources required

### Problems Encountered

- Industries often focus on profit and marketability, while academia prioritizes long-term research.
- Disagreements may arise over ownership of intellectual property such as patents and research outcomes, especially when industry seeks exclusive rights while academia wants to share results
- Institutional policies and legal requirements may conflict, during the process of formalizing collaborations or commercializing research



- Small scale, medium scale, and large scale industries are scant in the vicinity of the college, making collaboration challenging.
- To secure collaborations with large-scale industries that can provide funding, the institute may need to look beyond the state and explore opportunities in more competitive regions.

### **Resources Required:**

- The institute provides a supportive ecosystem, including necessary resources, mentorship, and infrastructure, to foster innovation and academic success for students.
- Industry-oriented courses are already a part of the curriculum, and there is a need to add sustainable practices in the curriculum to align with sustainability goals.
- The institution conducts workshop and training programs to keep students and faculty updated on the latest industrial trends and knowledge
- The institute organizes “HACKATHON” to address industry-related problems, encouraging students to apply their skills in real-world scenarios.

### **Best Practice - 2**

#### **Title of the Best Practice: Promoting Student Research**

Student research plays a crucial role in societal development by driving innovation and addressing real world problems. The institute is committed to promote student research by providing them with the necessary resources, and guidance, to explore research opportunities beside academics. Undergraduate and Post Graduate students are encouraged to explore innovative ideas and contribute to advancing knowledge in their fields, through mentorship from faculty and access to research platforms.

#### **Objectives of the practice**

- To create a research-driven environment within the institute.
- To develop critical thinking, problem solving skills, data analysis, and research writing.
- To encourage students to share their research with the wider academic community through publications
- To help students build strong academic resumes by publishing their research, which can benefit future career opportunities
- To equip students with valuable experience and credentials for pursuing higher education, research positions, or careers in industry.





## The Context

To effectively address NEP2020 guidelines, we want to empower our student research beyond academics. This involves providing students with the tools, guidance, and opportunities to conduct interdisciplinary, industrial and societal research and share their findings through journals or conferences. This approach aims to develop students' research and writing skills, fostering a deeper understanding of their field of study and prepares them for future careers in research or industry. This practice also strengthens the institute's reputation as a hub of innovation and academic excellence.

## The Practice

- Projects, internships, EPICS (Engineering Projects in Community Service) are integrated into the curriculum to expose students to real-world problems and innovative solutions
- Faculty guide students in selecting research topics and writing research papers
- Additionally, workshops and training sessions on research methodologies, academic writing, and the publication process are conducted to equip students with the necessary skills
- Collaboration between students, faculty, and industry experts is encouraged to enhance the quality, relevance, and impact of their research projects.
- Students are supported in submitting their research papers to academic journals and conferences, with the institute covering the conference fees.

## Evidence of success during the year

S.No	Outcomes	Total
1	Student Publications	449 in SCI & Scopus Indexed journals and International Conferences
2.	Models Developed	204
3.	Innovation-Recognitions /Awards/Prizes	10
4	Student Start-ups	2




## **Problems encountered and Resources required**

### **Problems Encountered**

- Balancing academics with research activities, particularly when students are involved in internships, placement training programs or part-time jobs, which limit time available for research.
- Most students have limited exposure to research methods and academic writing, making it harder for them to conduct research and publish papers.
- Language Barriers are an issue for students from rural backgrounds.
- In some cases, faculty members may have limited experience in guiding students through the research and publication process, especially in specialized fields.

### **Resources Required /Available**

- Well-equipped research labs, access to research software, and subscriptions to academic journals and databases are established to support student research.
- Training is provided for students and faculty to improve their ability to guide students in research and publication
- Financial support for model development and publication fees for students.
- Industry collaborations and MoUs are made to provide real-world research opportunities for students.
- Dedicated time slots are provided in the curriculum for doing research activities

  
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