

Industry-Institute-Interaction Cell



BHAGWAN MAHAVIR UNIVERSITY

VIP Road, Vesu, Surat-395007

Gujarat, India

September, 2019



BHAGWAN MAHAVIR UNIVERSITY	Eff. Date: 01/05/2022
	Issue No. : 01
Industries and Institute Interactions cell	Rev. No. : 00
	Rev. Date.
	Doc. No.: BMU/III CELL/P/01

1. About University:

- Bhagwan Mahavir Education Foundation (BMEF), Surat is a leading educational trust of south Gujarat, which was established in 2002. The trust is committed to provide quality education to its students while contributing significantly to industrial and societal growth. To accomplish the vision of the foundation, Bhagwan Mahavir University was established in 2019 as per Gujarat Private University Act 19 of 2019 (Amendment) in continuation with Gujarat Act. No. 8 of 2009. The group runs 24 reputed institutions, which are built in 20 acres of the state-of-the-art campus located in the prime area of Surat city.
- Bhagwan Mahavir University (BMU) imparts knowledge and skills to more than twelve thousand (12,000) students through various Undergraduate, Post Graduate and Doctoral Programs across various streams like Engineering, Pharmacy, Applied and Basic Sciences, Business and Management, Computer Science & Applications, Paramedical, Physical Education, Education, etc.
- Bhagwan Mahavir University is committed to inclusion and innovation in education through philanthropy and pioneering initiatives. As the world of business and jobs changes rapidly, we are evolving to make our students not just job ready but also life ready, to help them see learning as a continuous process and to become future- ready professionals.
- Bhagwan Mahavir University is also a pioneer in ushering innovative learning practices that build skills, develop inventive thinking, enhance employability as well as foster an entrepreneurial mindset. Our university promotes interdisciplinary studies, with a focus on industry-relevant and skills-oriented curriculum. In order to give a stimulating learning environment, the university provides excellent facilities on campus and a very creative approach to learning by engaging new practices that are revolutionizing educational delivery all over the world.
- Bhagwan Mahavir University strongly believes in inculcating the vital attitude of lifelong learning in our students. Therefore, we provide our students with ample opportunities to

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develop self-motivation and creativity. The students are sensitized to a unique learning process where the self is seen as a creator and leader; as such an attitude will continue to yield much dividend throughout their lives. We believe that education is the greatest enabler of social transformation and progress at all levels. We are also ever conscious of a University's great role towards shaping mindsets and building character, which in turn build the Nation.

- Bhagwan Mahavir University collaborates with the industry which gives faculty members and students an exciting opportunity to see their research have real-world impact.
- The Bhagwan Mahavir University Central Placement Cell acts as an interface between the students, faculty, and the corporate world to initiate continuous interaction with the industry, sharing the industry experiences, understanding industry needs and providing the required support to the corporate world. We believe in equipping our students to meet industry demands, goals and expectations and become a great asset for an organization by taking any challenging assignments entrusted to them to their fullest expectation. Our focus is to groom young future leaders who are value driven human beings and competent professionals with deep passion for humanity, who will lead the world.

2. Purpose and Scope of this document:

- The purpose and objective of preparing this document is to establish the common understanding and clarity of purpose within the BMU leadership & team members.
- The applicability of this document is purely within the boundaries of BMU.

3. BMU – Vision, Mission & Core Value

- The statute of the BMU has following basic founding values which becomes source of inspiration and guiding principles to take growth further;

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❖ **Vision:**

- To emerge as a “Centre For Excellence” offering technical education and research opportunities of quality standards to students and to serve the society by educating young and budding students with latest technological advancements for dynamic and global careers.

❖ **Mission:**

- To impart sound technical competency and quality education for students to enhance the employability and ethical values.
- To pursue continuous development of infrastructure and enhance state -of-art equipment’s to make our student technologically superior.
- To collaborate with industry, government, R& D institutes, international alliances to achieve global excellence.
- To achieve overall excellence in education by continuously upgrading the teaching learning process that will enhance education level which in turn, will contribute to social and economic betterment of society.
- To focus on multifaceted development of students and make them to become leaders in the global community.
- To provide an inspiring and stimulating environment that encourages knowledge acquisition and makes this institute a preferred one for knowledge seekers.

❖ **Quality Objectives:**

- The main objective of BMU is to facilitate teaching, research, and entrepreneurship in the interdisciplinary areas encompassing engineering.
- To provide quality technical education.
- To prepare students to develop all round competitiveness.
- To extend the frontiers of knowledge through Research and Development.
- To encourage creative talent and establish epicenter of excellence in Learning & Research.

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- To inculcate in the minds of students a sense of value and to equip them to serve the society well.

❖ **Innovation in Education:**

- Establishing the Community Colleges to provide vocational education
- Focus on job oriented, work related, skill based and life enriching education
- Establishing choice based credit system
- Revised curriculum at every three year
- Establishing the eco system in future for any students, any exam, any time, any course, any where
- Creation of Autonomy & Uniqueness Through;
- Innovative Programmes Matching Societal Needs
- Curricula of International Standards
- Value and Ethics in Management
- Thrust on Research and Development
- Profound Nurturing of Human Resources
- Effective Relationship with Society

❖ **NEP 2020**

- UGC under the NEP 2020 provision has directed all HEIs wide para 11.12 of final draft as under;
- HEIs will focus on research and innovation by setting up start-up incubation centers; technology development centers; centers in frontier areas of research; greater industry-academic linkages; and interdisciplinary research including humanities and social sciences research. Given the scenario of epidemics and pandemics, it is critical that HEIs take the lead to undertake research in areas of infectious diseases, epidemiology, virology,

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diagnostics, instrumentation, vaccinology and other relevant areas. HEIs will develop specific hand holding mechanisms and competitions for promoting innovation among student communities. The NRF will function to help enable and support such a vibrant research and innovation culture across HEIs, research labs, and other research organizations.

❖ **University – Industries Linkages: Opportunities & Challenges**

- Universities and Higher Educational Institutes are crucibles of new knowledge. They work at the cutting edge of science and develop human resource at higher levels with required skills. Industry in turn uses these resources – knowledge-base and trained manpower – to translate the new knowledge into useful and patentable applications as well as technologies to enhance their competitiveness, besides creating jobs. Such close linkages are mutually beneficial in a variety of ways. The industry would gain: (i) new knowledge at affordable prices; (ii) trained manpower with requisite skills in new and emerging areas of science; and (iii) access to best of the R&D facilities. Industry can accelerate translational research by leveraging the knowledgebase from universities to remain competitive. It can also make R&D more costeffective and source early stage innovation support through public funds to reduce risk etc.
- On the other hand, universities would benefit from:
 - (i) Increased flow of financial resources for their research activities;
 - (ii) Opportunity to work on relevant industrial problems;
 - (iii) Identification of research areas of interest to industry;
 - (iv) Enhanced capacity to train manpower better aligned to industry needs;
 - (v) Internship opportunities as well as enhanced employment opportunities for their students;
 - (vi) Development of courses / curriculum with industry inputs;

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- (vii) Engaging the industry personnel for teaching assignments (as practicetrack faculty) etc. Whilst, the elite institutions to some extent have been able to forge engagement with industry, the tier II and III Universities find it hard to engage with the industry due to lack of networking, resources, and capability. Similarly, large corporations engage with top tier institutions, the bulk of SMEs are unable to engage with quality institutions either for consulting, research or student internship/apprenticeship. Although such interactions at all levels are necessary for generating industry-relevant knowledge at affordable cost and developing human resource with required skill sets, presently such interaction is at a sub-optimal level.
- Hitherto universities are looked upon as teaching and manpower-training centers. Recognition of the standard of a university and its quality of education is directly linked to its inherent R&D strengths and its continuous knowledge renewal with new research, many universities have created excellent research facilities with modern equipment and are contributing well to basic research. Thus, they are making good efforts to enhance their research quotient. Thanks to the National Institutional Ranking Framework (NIRF) of the MHRD-GOI, a university's performance is no more measured solely on the number of graduates and post-graduates it produces. It is a comprehensive measure that includes Teaching, Learning & Resources; Research & Professional Practice; Outreach & Inclusivity; Graduation Outcomes; and Perception. Thus, number of PhDs produced, research papers published, patents, technology leads generated, industry linkages established, revenue generated, start-ups catalyzed, entrepreneurial ecosystem enabled etc. are all being given due importance and weightage. An enhanced university–industry linkage could substantially contribute to all these performance indicators and contribute to better ranking of universities.
 - Micro, Small and Medium industries dominate the Indian industrial sector. The MSME Ministry's 2017-18 Annual Report says, MSMEs are contributing to 29% of GDP; 45% of

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Manufacturing Output; and 40% of Exports. The 6.34 Cr. units are providing jobs to 11.10 Cr. people [8.45 Cr. Male (76%) and 2.65 Cr. Female (24%)], by no measure, a mean achievement! A matter to rejoice is, of these units, those in rural areas are more, at 3.25 Cr. (I.e. 51%) than the 3.09 Cr. (i.e. 49%) outfits in Urban areas. More than 20% of the total units are owned by women! However, a matter of concern is, due to their small size and low profitability, MSMEs are not in a position to make significant investments in R&D, owing to the nature of research being long drawn, risky and expensive with uncertainty about the end result. Universities with good research facilities and expert faculty could provide the required R&D support for MSMEs enabling them to compete in the marketplace. Though well placed to serve this segment very effectively, there is no significant structure and mechanism in the universities to serve this constituency or recognition to venture into this initiative.

- In universities publications are of primary importance for career progression. There has been considerable growth in the number of publications and their quality, over the years. However, the rate of patent-filing in the university system is very low due to lower priority attached to technology development, innovation and patenting. Attracting the best faculty, both young and experienced, to participate in the innovation and industry-oriented R&D has been a challenge. The university system in the western world as well as in high-growth economies like China, Korea and Taiwan encourage and support innovation and industry-oriented research and duly recognize such efforts. Therefore, a supportive environment and an appropriate incentive structure are essential for attracting faculty to applied research to catalyze enhanced interaction between university and industry.
- However, there are several organizational bottlenecks in forging such interaction and these need to be addressed. For example, there needs to be formalization of modalities for: (i) recognizing industry-oriented R&D work and reports as academic outputs for performance evaluation of faculty; (ii) sharing of revenues earned through industry-oriented work with

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the involved staff; (iii) IPR sharing policy etc. These aspects, if unresolved, stand as hurdles on the path for fostering institute-industry interaction.

- It is important to recognize that mutual trust is very essential for building strong university industry linkage. Unfortunately, such trust cannot be built over night. It must be built assiduously over a period. Universities must make a conscious effort to put in place appropriate structures and measures that foster such mutual trust.

❖ **Industries and Institute Linkage Cell :**

- In light of the liberal economic and industrial policy recently adopted by the Govt. of India, the industrial scenario is fast changing. Industries are compelled to export a part of their production and compete with multinationals for the internal market. The emphasis has shifted to quality products and well trained manpower to produce such products. There has been a greater need for industries to depend on technical institutions for R&D and for supply of highly qualified and skilled manpower. Retraining of the work force has become major activity for all industries. There is, thus a good opportunity for institute to interact with industries for mutual benefits.
- The Industry-Institute Interaction would accrue mutual benefits when a symbiotic relationship is developed between the two systems. The ultimate aim of this relationship will be the creation of confidence in industry by the Institute which would result industries involving voluntarily the Institute at various stages of its development.
- The development of such symbiotic relationship requires, firstly, careful understanding of the industry needs such as relevant R&D, cost effectiveness, time bound programmes, technology upgradation etc. by the Institute and, in turn, understanding the capabilities and limitations of the institute by the Industry. Recognizing the above, following thrust areas have been identified which require immediate attention :
 - ✓ Reorientation of curriculum

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- ✓ Exchange of Experts between the Institute and Industry
- ✓ Involvement of Teaching Staff in Industry
- ✓ Institute to gain Confidence of Industry
- ✓ Institute as a Consultant in R&D
- ✓ Technological Database
- ✓ Continuing Education Programme
- ✓ Establishment of Linkages
- ✓ Institute's Self-Reliance in Finances
- ✓ A typical mode of interaction between Institute, industry and other organizations is presented in Figure is being followed to accomplish the desired goal of economic development of our country on sustainable basis. Programme design
- ✓ Curricula matters
- ✓ Identification of research projects
- ✓ Process and approach for Industrial Practice/Internship
- ✓ Placement opportunities
- ✓ Setting up of innovation centers
- ❖ **Objectives of Cell:**
 - To cultivate symbiotic relationship between college and industry as well as college and other research institutes.
 - To help industries to solve their problems through research, training and consultancy.
 - To provide ample opportunities for industry exposure to students and faculty through industry visits, summer internship and industry projects.
 - To involve industry professionals in curriculum design, delivery and assessment so as to make students industry ready.
 - To help industry professionals to upgrade their qualification, knowledge and skill through higher education, continuing education and training.

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❖ **Role of Cell:**

- To provide support to all the Department for Industry initiatives
- To liaison with Industries & Industry Association for identifying opportunities to collaborate
- To promote involvement of Industry experts in Institutional processes.
- To facilitate Departmental initiatives for improving Industry Interaction
- To give industrial exposure to faculty members and students, thus enabling them to tune their knowledge to cope with the industrial culture
- To organize workshop on trending technologies by experts in the field
- To assist the Departments in organizing workshops, conferences and symposia with joint participation of the industries
- Encouraging Engineers/Professionals from industries to visit institution to deliver lectures
- To organize industrial visits for Faculty members and students
- To coordinate/identify industrial partners for proposing 'Centre for Excellence'.
- To assist the Training and Placement Division
- Visit of industry executives and practicing engineers to the institute for seeing research work and laboratories
- Memorandum of Understanding between the institute and industries to bring the two sides emotionally and strategically closer
- Visits of faculty to industry for study and discussions or delivering lectures on subjects of mutual interest.
- Visiting faculty/professors from industries.
- Practical training of students in industries.
- Projects Sponsorship for students
- Visiting faculty/professors from industries.

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- Collaborative Programmes with Industry
- Encouraging engineers from industry to visit Engineering Institution to deliver Guest Lectures & Workshops.

1. Strategies of Cell:

- In the fast changing industrial scenario, due to various liberal economic and industrial policy adopted by the Govt., the industries are compelled to export a part of their production and compete with multinationals for the internal market in terms of quality products, mass productions and skilled manpower.
- As a result, industries are relying on technical institutions for R&D support and for supply of highly qualified and skilled manpower in order to compete with contemporary multinationals. Retraining of the workforce has become major activity for all industries. There is, thus a good opportunity for institute to interact with industries for mutual benefits.
- The Industry-Institute Interaction would accrue mutual benefits when a symbiotic relationship is developed between the two systems. The development of symbiotic relationship requires, firstly, careful understanding of the industry needs such as relevant R&D, cost effectiveness, time bound programmes, technology upgradation etc. by the Institute and, in turn, understanding the capabilities and limitations of the institute by the Industry. Recognizing the above, following thrust areas have been identified which require immediate attention:
 - ✓ Exchange of Experts between the Institute and Industry
 - ✓ Reorientation of curriculum
 - ✓ Involvement of Teaching Staff in Industry
 - ✓ Institute to gain Confidence of Industry
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- ✓ Establishment of Linkages
- ✓ A typical mode of interaction between Institute, industry and other organizations is presented in Annexure – A is being followed to accomplish the desired goal of economic development of our country on sustainable basis.

2. Key Focused area of Industries-Institute Linkage Cell:

- BMU has always emphasized on strong industry institute relationship .The institute encourages its faculty and students to interact with industry in all possible ways with the spirit of deriving mutual benefit. The major modes of interaction are listed below:
- Professional consultancy by the faculty to industries.
- Industrial testing by faculty & technicians at site or in laboratory.
- Participation of industry professionals in curriculum design, delivery and assessment.
- Joint research programmes and field studies by faculty and people from industries.
- Industry exposure to students and faculty through industry visits, summer internship, practical training and industry projects.
- Visits of industry executives and practicing engineers to the Institute for seeing research work and laboratories, discussions and delivering lectures on industrial practices, trends and experiences.
- Memorandum of Understanding between the Institute and industries to bring the two sides emotionally and strategically closer.
- Human resource development programmes by the faculty for practicing engineers.
- Workshops, conferences and symposium with joint participation of the faculty and the industries.
- Professorial Chairs sponsored by industries at the Institute.
- R&D Laboratories, Center of Excellence sponsored by industries at the BMU.
- Scholarships/fellowships instituted by industries

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- Academia and industry need to recognize each other's strengths and strive towards greater trust and communication
- India needs structural changes so that business enterprises are able to spend government funding on research and development
- Collaboration must be taken beyond fundamental research and Industries defined student's project.
- Collaborative projects by Industries and academia and Faculties Training
- Success stories of industry-academia collaboration across the nation must be documented
- Key thematic areas for collaboration include the Engineering, Pharmacy, Management & Commerce, Education, Liberal Arts, Architecture & Planning, Information Technology, Health Care, Environment, and the social sector keeping in mind the larger development challenges in the country.
- Development of skills should also be brought to the forefront in addition to focus on higher technical education

3. Expected areas of collaborations /Outcomes:

- The Industries and Academic meeting and interactions are aims to establish the collaboration or deciding the way forward on the following strategic areas listed as under.
- Key areas related to academic processes & quality improvement, research & innovation, entrepreneurship, skill building & employability as well as institutional mechanisms were identified for future discussion. These were as follows:

A) Academic processes & quality improvement

- Cross visits between Industries and academic
- Curricular reform: seek active involvement and support of industry in shaping academic programs

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- Understanding the Industries aspirations from Academia and working for bridging the gaps.
- Visiting faculty from industry to impart education practical implementation
- Run academic programs for industry through the special arrangement
- Educational processes and system improvement though active participation in University Internal Quality Assurance Systems
- Sandwich courses – postgraduate (PG) programs for industry executives
- Faculty development through corporate participation

B) Research & Innovation

- Participation in product based research
- Sabbaticals for faculty for Industry-related research
- Establishing collaborative research centers with state-of-art research tools & facilities
- Enhance research funding at early stage from government – incentivize private sector for translational research
- PPP in research; problem identification by government; force competition between public and private institutions for solutions
- Implementation of right research processes will assist in achieving better results in addition to better monetary return
- Establishing the Product Development Cells in institutions
- Use public and private sector facilities for research and training
- Institutes have to cultivate a fundamental behavioural change in students that will lead to a life-long attitude towards problem identification and solving
- Sponsored research sabbaticals by corporations for employees in Centers of Excellence (CoEs)
- Joint academia-industry guide for research

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C) Entrepreneurship & Start-up

- Develop and establish framework for end-to-end support of aspiring Entrepreneurs through collaborative approach with CED and Government nodal agencies
- Establishing the business counseling cell to support aspiring entrepreneurs
- Ecosystem for faculties to set up start-ups and commercialize their own research
- Design, develop and implement training module for enhancing the skills of tribal communities under the various State/central government initiatives.

D) Skill Building and Employability

- To enhance employability, summer internships should be made an integral part of the curriculum
- Partnership between industry and academia for industry ready/right-skilled human resource
- Industry participation in skilled based curriculum preparation
- Frequent dialogue between academia and industry through seminars and workshops
- Providing internship / apprenticeship opportunities
- Participation in on Campus and Off Campus talent acquisition drive
- Academia to develop curriculum so that corporate sectors' training requirement can be reduces reduced
- National Vocational Education Qualification Framework (NVEQF) and mainstreaming skills into education
- Skill knowledge providers
- Sector-specific initiatives
- Make manufacturing sector attractive to students of Management and Engineering

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- Developing the capabilities in students and faculties for Industrial problem identification and solving.

E) Infrastructure

- Facilitating the development of special purpose skill development physical resources in academic institutions
- Utilization of facilities for skill development of community

F) Institutional Mechanisms and Critical Success factors

- Innovation rich, multi-disciplinary approach, break silos in academia institution, can't just be pure research – leads to application focus
- Create Special Purpose Vehicles(SPVs) to connect institutions with industry
- Establishing Industries friendly governance processes within the BMU
- Addressing the grass root level issues to develop the attitude and right spirit within the faculties & staff members
- Adopting flexibility and ability to change
- Ability to implement the key initiatives at gross root level
- Institutionalization of processes to increase participation in government as well as private sponsored initiatives

G) Corporate Social Responsibilities through the Academic Institutions

- Collaborative approach for Implementing Corporate Social Responsibilities Initiative through the University – by leveraging resources of Academic institutions
- Enhancing the skills of tribal and unskilled community through the collaborative approach with state/central government agencies/Private & Public sector organization/NGOs.

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