SELF STUDY REPORT

FOR

2nd CYCLE OF ACCREDITATION

BIRLA INSTITUTE OF TECHNOLOGY

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
835215
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Submitted To

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BANGALORE

(Draft)

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

Birla Institute of Technology (BIT) Mesra, established in 1955, is one of the oldest engineering institutions of the country (ahead of all but one IITs) and is renowned for being pioneer in many disciplines and initiatives. Located in Mesra, a suburb of Ranchi, the state capital of Jharkhand, BIT Mesra is an entirely residential campus spread in 780 acres lush green area at the confluence of Subarnarekha and Jumar rivers. Mr. B M Birla, the visionary philanthropist, industrialist and founder of BIT selected this location at the centre of coal and mineral bed to boost the post-independence national mission of rapid industrialization focusing on the power and steel sector. Despite being a completely self funded Technological University, BIT Mesra has maintained impeccable record of quality, standard and ethics. In brief, it has carved a niche as a world-class privately funded learning institution for engineering and technology from its inception by excelling in scholastic pursuits to redefine education in the new age through creation of novel curriculum & pedagogy and promoting modern era engineering education for more than six decades.

The reward for nurturing talent and establishing quality education in engineering came either being decorated as one the top of ranking institutions in the country or regarded as the pioneer of path breaking ideas. BIT Mesra was the first to establish a Department of Space Engineering & Rocketry equipped with a static rocket test firing facility to augment the national space mission in 1960's (ahead of ISRO). It is the first institution in India to be granted autonomous status in 1970 through a special provision in the Bihar State University Act. Due to such record of sustained excellence, it achieved the deemed university status in 1986 under section 3 of the UGC Act. The P.N. Tandon committee set up in 2009 to review existing Institutions (deemed to be Universities) ranked BIT as 15th in the highest category of 38 institutions for satisfying the criteria for the Deemed University status with a score of 37 out of a maximum of 45. The all-India nature of the institute has been preserved by ensuring admissions of students from all over the country for all the programs without any prejudice so as to honour the national policies towards pluralities, diversities and inclusiveness.

Vision

To become a globally recognized academic Institution in consonance with the social, economic and ecological environment, striving continuously for excellence in education, research and technological service to the National needs.

Mission

- To educate students at Undergraduate, Post Graduate, Doctoral, and Post-Doctoral levels to perform challenging engineering and managerial jobs in industry. In a nutshell, following are the four primary areas of the Institute mission.

- To provide excellent research and development facilities to take up Ph.D. programmes and research projects.

- To develop effective teaching and learning skills and state of art research potential of the faculty.

- To build national capabilities in technology, education and research in emerging areas.
- To provide excellent technological services to satisfy the requirements of the industry and overall academic needs of society.

1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

Institutional Strength

1. BIT Mesra is counted among the pioneering engineering institutions in the country founded in 1955, ahead of all but one IITs.
2. Carries a tradition of excellence in teaching and innovation over 60 years with national and international repute, aligned towards national developmental goals.
3. Well qualified, experienced, dedicated and long-serving faculty members steer teaching and research programmes.
4. Completely merit based student admission is ensured both for UG courses (based on JEE Main rank through JoSAA/CSAB) and PG programs (through GATE/GPAT/MAT etc.).
5. More than adequate faculty-to-student ratio ensures personal attention for all round development and quality education for all students.
6. Well established global network among over 50000 strong alumni pool (since 1955) with distinguished credentials supports the Institute to maintain global competence and competitiveness and inculcates true spirit of engineering and innovation amongst students.
7. Excellent infrastructure, state-of-the-art classroom, ICT integrated teaching-learning and sharing of resources through campus wide LAN via 1.6 GBPS leased lines aid modern teaching and pedagogy.
8. Flexible course curriculum accommodating minor and in-depth specialization based on students preferences under the Choice Based Credit System (CBCS) imparts special training on professional, local, regional and national needs.
9. Outcome Based Education (OBE) inculcates the true spirit of engineering to fulfill the goals of academic excellence through progessive attainment provisions.
10. Excellent research ecosystem is maintained to focus on national challenges and missions with regular monitoring of research ethics, scientific benchmarks and global standards.
11. Encouragement for pursuing quality research is promoted through in-house patronage and funding (e.g. Ph.D scholarship and awards).
12. Transparent and uniform faculty recruitment and promotion scheme (CAS) through open advertisements promote healthy professional growth opportunities.

13. BIT Mesra was the pioneer in implementing seventh pay scale amongst the private universities.

14. Excellent and modern academic and research support is provided through centralized facilities like Computer Centre, Library, Characterization and Testing Facility, Engineering Workshop, Device Fabrication Laboratory, etc.

15. State of the art sports and extra curricular facilities (such as Playgrounds, stadium, Track and Field, Outdoor and Indoor Courts, Gymnasium, Auditoriums, etc.) are provided for all round physical and sporting activities for students and staff.

16. Green energy (solar) input contributes to 40% of total electrical energy demand, in addition to offering fully automated 33/11 KV Gas Insulated Switchgear (GIS) based substation and distribution system through Supervisory Control and Data Acquisition (SCADA) with 100% power backup.

17. Beautiful, self-governed and well maintained residential campus with over 10000 inhabitants is maintained to ensure a warm and congenial atmosphere conducive for highest academic pursuits through cooperation, dedication, mutual respect and inclusiveness beyond caste, creed and religion amongst students, faculty and staff members.

18. BIT maintained consistent track record of NIRF participation (since inception) and securing rank within top 50 engineering institutions.

19. BIT was the pioneer in establishing the first ever Science and Technology Entrepreneurship Park (STEP) in India in 1974, besides establishing the first Department of Space Engineering and Rocketry.

20. BIT Mesra is a complete Technological University equipped to offer certified qualification from Diploma to Doctoral Degree in almost all engineering disciples.

Institutional Weakness

1. Aging civil infrastructure (academic and residential) needs major upgradation and augmentation.

2. Modernization of teaching and research laboratories (equipment, instrument, etc) is needed.

3. Skill enhancement training and recruitment of qualified technical staff are required for sophisticated research facilities.

4. Fresh recruitment of qualified faculty and staff members and research scholars are warranted.

5. Absence of a strong Humanities Department to support engineering curriculum will soon be addressed.

Institutional Opportunity

1. International faculty and student exchange program for research collaboration with foreign universities.

2. Collaborative doctoral and sponsored research with industry and national laboratories.

3. Promotion of innovation and entrepreneurship through STEP.

4. Utilization of alumni network for raising corpus funds, developing research facilities and instituting chair professorships.

5. Offering support to industry for testing, characterization and consultancy.

6. Establishing new academic programme in emerging technology areas.

7. Engaging UG and PG students in continued phase with research projects.

8. Recruiting top class fresh faculty members to promote a culture of invention and innovation in BIT.

Institutional Challenge

1. Raising sufficient financial resources both for capital and recurring expenses without annual government funding or grants

2. Globalization of education demanding investments to create new infrastructure, curriculum, teaching and pedagogical innovations.

3. Competitions arising from invitations to Foreign universities under General Agreement on Trade in Services (GATS) for higher education.

4. Ever growing competitions from completely government/state funded and newly established IITs, NITs, Central Universities and IIITs.

5. Very limited career opportunities throughout the country for students in the core engineering (outside IT, finance and service sector).

6. Multi-faceted skill demands from different stakeholders within the existing scope of limited time frame, course curriculum and programme.

7. Declining inflow of international and NRI students.

8. Disadvantages arising from geographical location and lack of adequate connectivity with the rest of the country make BIT a less preferred destination for students, employers and prospective faculty and staff members.

1.3 CRITERIA WISE SUMMARY

Curricular Aspects

Curricular Planning and Implementation

Birla Institute of Technology (BIT) offers different programs in the domain of Engineering and Technology, Science, Architecture, Pharmaceutical Sciences, Hotel Management and Catering Technology, Management, etc. These programs consist of courses that address local, regional, national and global developmental needs with the majority of them focusing on employability, entrepreneurship and skill development. More than 90% of the programs were revised based on choice based credit system (CBCS) in the last five years based on Industrial demands, norms and standards of relevant statutory bodies, inputs from stakeholders and consultation with members of Board of Studies and advisors from industries.

Academic Flexibility

New courses are regularly introduced, spread over various programs, every year amounting to an average of around 20% in the last five years. Institute has implemented CBCS based flexible curriculum in the AY 2018-19, switching from the traditional curriculum for different programmes with options to register for minor or in depth specialization. It has a large range of open and program electives which are offered for the benefit of student’s learning experience.

Curriculum Enrichment

Variety of courses which are either offered as Core, Electives and other Value-added courses, contain relevant issues of Gender, Environmental Concepts, Pollution Control, Human Values, Ethics, Social responsibility, etc., embedded into the curriculum. Students are actively participating in value added courses which are regularly offered and are of the order of more than 10 numbers per year. Students also participate in significant numbers, towards the field/research projects and internship, which helps in achieving a learner centric environment.

Feedback System

Feedback from various stakeholders are critically evaluated to revise and improve the curriculum to enhance the quality of teaching and learning process.

Teaching-learning and Evaluation

Student Enrolment and Profile

Enrolment to all programs in the Institute are based on National or Institute level competitive tests followed by counselling or interviews. For B.Tech., B.Arch. and I. MSc. programs, admissions are based on JEE-Mains under the counselling of JoSAA / CSAB. Institute counselling process is adopted for other programs. Seats for reserved categories are strictly adhered to as per statutory reservation policy of State of Jharkhand and Govt. of India.

Catering to Student Diversity

Institution has a process to assess the learning levels of all the students soon after their admission. It has several

mechanisms to take care of the diversity of learning abilities of the students based on different levels of learning.

Teaching-Learning Process

Institute promotes experiential and participative learning in the students by adopting industrial visits, field visits, assignments in the curriculum, activities of technical clubs and internship. The institute has adopted Outcome Based Education (OBE) by utilising ICT Tools in teaching and various modes of assessments-based CO and PO attainment. Every student is attached to a faculty advisor who mentors them in easing academic, administrative and social difficulties in the campus throughout their student life cycle.

Teacher Profile and Quality

Student:teacher ratio of the Institute is 18 with more than 87% faculty having Ph.D. degree and non-PhD faculty are registered for Ph.D. Most of the faculty members have significant experience in teaching/research with few of them even recognized for their excellence in teaching and research through various national and international awards.

Evaluation Process and Reforms

All the examination activities are facilitated with the integration of IT based solutions. The end semester results are declared within a fortnight of the last conducted examination. The average number of reported grievances in examinations is less than 0.5% every year.

Student Performance and Learning Outcome

The adopted teaching-learning process is well defined to accomplish the stated objectives and outcomes in the course information sheet. Average pass percentage of students is more than 90%. The assessment and evaluation are being done both at course level as well as program level.

Research, Innovations and Extension

Promotion of Research and Facilities

Institute has state-of-the-art research facilities for research and innovation. Provision of Seed Money Scheme (SMS) of the order of INR 25 lakhs per year is granted to faculty members. Some percentage of project overheads received from external funding agencies is provided to the investigators as Research Promotion Grant (RPG) which is cumulative in nature.

Resource Mobilization for Research

An average of 20-30 research projects are received every year from different agencies, worth more than seven crores.

Innovation Ecosystem

IPR and IIC of the Institute encourage faculty members for enhancing the innovation ecosystem. Institute has got close to 20 patents published/granted in the last five years.

Research Publication and Awards

Institute has an average of 300 journal articles and more than 150 conference proceedings/books/book chapters published per year. Ph.D.'s awarded within the last five years in the Institute is more than 300. Institute recognises and felicitates faculty members who are commended at national and international levels.

Consultancy, Extension Activities and Collaboration

An earning of around two crores is achieved from consultancy projects in the last five years.

Many campaigns and awareness drives have been taken up and executed by the NSS team of the Institute leading to multiple NSS awards from the Ministry of Youth affairs, Govt. of India. An average of 35 extension and outreach activities per year are conducted where around 70 percent students actively participate. Institute has also adopted several villages in the vicinity of the campus.

Institute has MoUs with reputed national and international industry and academia.

Infrastructure and Learning Resources

Physical Facilities

Institute has highly adequate infrastructure and facilities for teaching-learning. Institute is spread over a green picturesque fully residential campus in 780 Acres of land. The main building has a built-up area of 30,000 sq. meters and accommodates various teaching, research, language, media labs, admin offices and classrooms. There are a total of 60 classrooms in the Institute, out of which 50 are ICT enabled and 10 are smart classrooms. The sports complex of the institute spreads over 25 acres of land which includes athletic track, badminton hall, multi-gym hall, volleyball court, basketball court, hockey ground, football field, kabaddi court, netball court, kho-kho field, cricket field, lawn tennis court, gymnasium hall etc.

Library as a learning Resource

Central Library is housed in the main academic building premises with a built-up area of 3900 sq. meters covering two levels of the building. It has over 1.5 lakhs books, 466 Institute Theses, 18,000 bound volumes of Journals, 22,000 online Journals and 43 lakhs online books, covering all the academic programs. Library is equipped with RFID technology, OPAC access system, CCTV surveillance and it is fully WiFi enabled.

IT Infrastructure

The Institute has three different Internet Service Providers viz. BSNL, Vodafone and Tejas with campus bandwidth of approximately 1.6 Gbps. The connectivity is through Fiber optics and high end CISCO switches, ensuring a stable distribution of internet connectivity throughout the campus. The Institute has three different video conferencing sites with Panasonic codec to help smooth conduction of meetings with external locations.

HPC facility is available to host a number of research activities with high computing power requirements. The Institute has an ERP driven student life cycle integrated with several MIS, being operated at different supporting sections.

Maintenance of Campus Infrastructure

The Institute spends more than 50% of its expenditure on maintenance of infrastructure. The regular maintenance of various Institute facilities are taken care of by the respective departments/sections. The upgradation and repair work of these facilities are undertaken by the Planning and Development section, which has a number of experienced engineers.

Student Support and Progression

Student Support

Institute has various provisions to provide support to the students for academia. More than 20 percent of total students every year for the last five years have benefited through various scholarships. Career counselling and guidance for competitive exams are provided by the Institute which serves around 23 percent of students during the last five years. During the year 2020-21, the Campus Recruitment Programme provided attractive job offers from reputed recruiters. Institute is a fully residential campus, providing accommodation to more than 3000 UG, PG and Ph.D. students with 12 boys and 2 girls hostels. Shopping complexes in the campus have stationery shops, tailoring units, banks, ATMs, post office, cafeterias etc. On-campus dispensary provides several diagnostic, preventive & curative treatments to students.

Student Progression

More than 50 percent of outgoing students on an average were successfully placed for the last five years. Students opting for progression to higher studies is more than 6 percent. Some of the students have also become entrepreneurs.

Student Participation and Activities

Average number of sports and cultural events/competitions organised by the Institute per year is more than 40%. Students have bagged many awards and medals in sports/cultural events at inter-university levels.

Alumni Engagement

Alumni are the best brand ambassadors of the Institute. Birla Institute of Technology Mesra Alumni Association (BITMAA) is the alumni association of the Institute. BITMAA has 40000+ registered alumni and 8 chapters in the country and 2 overseas chapters. Apart from BITMAA, BIT Old Students Association (BITOSA) Global is an Alumni Association run by the various chapters in India and abroad. Many of the alumni have supported the students in securing job and research offers. Alumni serve as BoG members, adjunct faculty in the departments, participation in invited lectures etc. On the foundation day of the Institute, distinguished alumni are awarded in multiple categories.

Governance, Leadership and Management

Institutional Vision and Leadership

Institute's vision is to become a globally recognized academic institution in consonance with the social, economic and ecological environment, striving continuously for excellence in education, research, and technological service to the Nation. The Institute has multiple facets to its operations such as teaching, research, social impact, entrepreneurship and industrial connect in line with its Vision. Institute functions under the overall supervision, and guidance of a Board of Governors (BOG), comprising representatives of the Ministry of Education, Government of India, University Grants Commission (UGC), State Government, A.I.C.T.E, The Hindustan Charity Trust, alumni and representatives of the Institute Faculty.

Strategy Development and Deployment

The Institute practices and promotes the culture of participative management in all its activities like administration, admission, student activities, curriculum development, research, sports etc. Institute has created a governance plan that embodies its values of transparency, accountability and efficiency. By participatory management, Institute ensures the transparent, accountable and efficient functioning of the institute.

Faculty Empowerment Strategies

Faculties are encouraged to participate in symposiums/seminars/conferences/professional development programs etc. held in India and abroad regularly. On an average more than 40% faculty members per year for the last five years are provided with financial support to attend the above programs. Training programs are arranged regularly to upgrade the skill level of non-academic staff. More than 5 such programs per year for the last five years have been organised at BIT Mesra.

Financial Management and Resource Mobilization

Financial management of the Institute is exercised with paramount care and is subjected to two type of auditing system –Statutory and Internal. Strategic mobilization of funds is executed for research grants from Govt. funding agencies and R & D Organisations.

Internal Quality Assurance System

Institute has an Internal Quality Assurance Cell, formed in the year 2010 which participates in all quality initiatives and decision making of the institute. IQAC is responsible for making proposals and recommendations for major changes to the academic activities like teaching learning process, academic audits, examination reforms, conforming to the rules and regulations of regulatory bodies, pre and post accreditation

assessments, collaborative initiatives, ranking and ratings, etc.

Institutional Values and Best Practices

Institutional Values and Social Responsibilities

Institutes' policy and guidelines for admission, recruitment, academic and administrative functioning ensures that there is no discrimination of any kind. Institute is encircled by rivers from three sides and more than 50% of the campus is covered with natural Sal forest. Less than 25% of the area is covered by buildings and roads. The students are trained with qualities to be a good human being where there is respect for nature and humanity.

Sensitisation programs about sexual harassment in workplace are organised besides having an Internal Complaints Committee. It proactively promotes gender equity, counselling, green practices such as rainwater harvesting, waste management, plastic free campus etc., safety and security. More than 30% of the power requirement of the University is being met by solar power. Institute celebrates the birth and death anniversaries of great Indian personalities, festivals of national importance like Independence Day, Republic Day, etc., with great fervour.

Best Practices

Out of many institutional best practices it employs, two of the main practices are

a) inculcating a research bent of mind in the students by providing them Immersive Summer Research Experience in reputed US Universities, and

b) funding support for UG and PG projects

Institute is also among the few Universities in India which has the Ph.D. thesis evaluation mandatorily done through referees at both national and international levels.

2. PROFILE

2.1 BASIC INFORMATION

Name and Address of the University	
Name	BIRLA INSTITUTE OF TECHNOLOGY
Address	Birla Institute of Technology, Mesra, Ranchi
City	Ranchi
State	Jharkhand
Pin	835215
Website	www.bitmesra.ac.in

Contacts for Communication					
Designation	**Name**	**Telephone with STD Code**	**Mobile**	**Fax**	**Email**
Vice Chancellor	Indranil Manna	0651-2275402	9431178604	0651-2275401	dir.iqac@bitmesra.ac.in
IQAC / CIQA coordinator	Sudip Das	651-2276181	7258014124	651-2275401	sudipdas@bitmesra.ac.in

Nature of University	
Nature of University	Deemed University

Type of University	
Type of University	Unitary

Establishment Details	
Establishment Date of the University	15-07-1955
Status Prior to Establishment,If applicable	

Recognition Details		
Date of Recognition as a University by UGC or Any Other National Agency :		
Under Section	**Date**	**View Document**
2f of UGC		
12B of UGC		

University with Potential for Excellence	
Is the University Recognised as a University with Potential for Excellence (UPE) by the UGC?	No

Location, Area and Activity of Campus							
Campus Type	**Address**	**Location***	**Campus Area in Acres**	**Built up Area in sq.mts.**	**Programmes Offered**	**Date of Establishment**	**Date of Recognition by UGC/MHRD**
Main campus	Birla Institute of Technology, Mesra, Ranchi	Rural	780	61700	Fifty Seven		

2.2 ACADEMIC INFORMATION

Furnish the Details of Colleges of University

Type Of Colleges	Numbers
Constituent Colleges	0
Affiliated Colleges	0
Colleges Under 2(f)	0
Colleges Under 2(f) and 12B	0
NAAC Accredited Colleges	0
Colleges with Potential for Excellence(UGC)	0
Autonomous Colleges	0
Colleges with Postgraduate Departments	0
Colleges with Research Departments	0
University Recognized Research Institutes/Centers	0

Is the University Offering any Programmes Recognised by any Statutory Regulatory Authority (SRA)	: Yes

SRA program	Document
AICTE	103979_6487_1_1619073094.PDF
PCI	103979_6487_6_1624623882.pdf

Details Of Teaching & Non-Teaching Staff Of University

Teaching Faculty												
	Professor				Associate Professor				Assistant Professor			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned				55				51				216
Recruited	38	17	0	55	44	7	0	51	163	53	0	216
Yet to Recruit				0				0				0
On Contract	0	0	0	0	0	0	0	0	0	0	0	0

Non-Teaching Staff				
	Male	**Female**	**Others**	**Total**
Sanctioned				200
Recruited	168	29	0	197
Yet to Recruit				3
On Contract	0	0	0	0

Technical Staff				
	Male	**Female**	**Others**	**Total**
Sanctioned				250
Recruited	79	13	0	92
Yet to Recruit				158
On Contract	73	53	0	126

Qualification Details of the Teaching Staff

Permanent Teachers										
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/ LLD	0	0	0	0	0	0	0	0	0	0
Ph.D.	38	17	0	44	7	0	135	46	0	287
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	28	7	0	35

Temporary Teachers										
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/ LLD	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0

Part Time Teachers										
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/ LLD	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0

Distinguished Academicians Appointed As

	Male	**Female**	**Others**	**Total**
Emeritus Professor	0	0	0	0
Adjunct Professor	14	1	0	15
Visiting Professor	18	1	0	19

Chairs Instituted by the University

Sl.No	**Name of the Department**	**Name of the Chair**	**Name of the Sponsor Organisation/Agency**
1	Physics	B.M.Birla	Birla Institute of Technology

Provide the Following Details of Students Enrolled in the University During the Current Academic Year

Programme		From the State Where University is Located	From Other States of India	NRI Students	Foreign Students	Total
Doctoral (Ph.D)	Male	124	129	0	0	253
	Female	108	100	0	0	208
	Others	0	0	0	0	0
PG	Male	163	268	0	0	431
	Female	181	249	0	0	430
	Others	0	0	0	0	0
UG	Male	1319	1277	47	0	2643
	Female	343	188	24	0	555
	Others	0	0	0	0	0

Does the University offer any Integrated Programmes?	Yes
Total Number of Integrated Programme	5

Integrated Programme	From the State where university is located	From other States of India	NRI students	Foreign Students	Total
Male	143	185	0	0	328
Female	137	114	0	0	251
Others	0	0	0	0	0

Details of UGC Human Resource Development Centre, If applicable

Year of Establishment	Nill
Number of UGC Orientation Programmes	0
Number of UGC Refresher Course	0
Number of University's own Programmes	0
Total Number of Programmes Conducted (last five years)	0

Accreditation Details

Cycle Info	Accreditation	Grade	CGPA	Upload Peer Team Report
Cycle 1	Accreditation			
B+	78.25			
Cycle 2	Accredation			

2.3 EVALUATIVE REPORT OF THE DEPARTMENTS

Department Name	Upload Report
Architecture	View Document
Bioengineering	View Document
Center For Quantitative Economics And Data Science	View Document
Chemical Engineering	View Document
Chemistry	View Document
Civil And Environmental Engineering	View Document
Computer Science And Engineering	View Document
Electrical And Electronics Engineering	View Document
Electronics And Communication Engineering	View Document
Engineering	View Document
Hotel Management And Catering Technology	View Document
Management	View Document
Mathematics	View Document
Mechanical Engineering	View Document
Pharmaceutical Science And Technology	View Document
Physics	View Document
Production Engineering	View Document
Remote Sensing	View Document
Science	View Document
Space Engineering And Rocketry	View Document
Technology	View Document

Institutional preparedness for NEP

1. Multidisciplinary/interdisciplinary:	The 1st step towards the NEP preparedness in terms of multidisciplinary/interdisciplinary requirement is the implementation of CBCS, which is already in practice since 2018.
2. Academic bank of credits (ABC):	Registration to ABC would be facilitated after award of eligibility through NAAC accreditation.

3. Skill development:	Already being addressed through summer internships and few specific project works.
4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):	Part of it is being addressed by universal human value (UHV) cell, and Hindi cell. Remaining is planned after obtaining the feedback from the stakeholders and assessing the resources in terms of competency of existing faculty to handle this requirement.
5. Focus on Outcome based education (OBE):	Already implemented in 2018 through CBCS curriculum and is currently in use. OBE is focussed while framing the syllabus, preparation of course profile, question papers and evaluation (direct and indirect).
6. Distance education/online education:	Online education is practiced through online teaching and learning platforms such as Google meet and Microsoft Teams, etc. since the middle of Spring 2020 session. We could plan in the future for distance education after having the experience through massive implementation of courses online in this pandemic.

Extended Profile

1 Program

1.1

Number of programs offered year-wise for last five years

2020-21	2019-20	2018-19	2017-18	2016-17
57	58	58	61	61

File Description	Document
Institutional data in prescribed format	View Document

1.2

Number of departments offering academic programmes

Response: 17

2 Students

2.1

Number of students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
5099	4960	5148	4891	4693

File Description	Document
Institutional data in prescribed format	View Document

2.2

Number of outgoing / final year students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
1189	1125	1084	969	1012

File Description	Document
Institutional data in prescribed format	View Document

2.3

Number of students appeared in the University examination year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
4612	4551	4549	4530	4155

File Description	Document
Institutional data in prescribed format	View Document

2.4

Number of revaluation applications year-wise during the last 5 years

2020-21	2019-20	2018-19	2017-18	2016-17
0	21	29	34	23

3 Teachers

3.1

Number of courses in all programs year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
1278	1356	1311	1215	1156

File Description	Document
Institutional data in prescribed format	View Document

3.2

Number of full time teachers year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
276	276	273	274	286

File Description	Document
Institutional data in prescribed format	View Document

3.3

Number of sanctioned posts year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
313	324	335	344	352

File Description	Document
Institutional data in prescribed format	View Document

4 Institution

4.1

Number of eligible applications received for admissions to all the programs year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
30546	28932	28258	27917	27259

File Description	Document
Institutional data in prescribed format	View Document

4.2

Number of seats earmarked for reserved category as per GOI/State Govt rule year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
878	771	739	739	716

File Description	Document
Institutional data in prescribed format	View Document

4.3

Total number of classrooms and seminar halls

Response: 78

4.4

Total number of computers in the campus for academic purpose

Response: 1807

4.5

Total Expenditure excluding salary year-wise during last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
4819.07	3543.22	3530.70	4259.74	4181.10

NAAC

4. Quality Indicator Framework(QIF)

Criterion 1 - Curricular Aspects

1.1 Curriculum Design and Development

1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific Outcomes(PSOs) and Course Outcomes(COs) of the Programmes offered by the Institution.

Response:

In pursuit of fulfilling the institute vision

“To become a Globally Recognised Academic Institution in consonance with the social, economic and ecological environment, striving continuously for excellence in education, research, and technological service to the National needs”,

all the courses of different programs are related to local/national/regional/global development. A broad outline is given below for enhancing the comprehension.

I.Courses related to Infrastructure development:

i) Power & Energy – Electrical and Electronics Engg

ii) Water (W)– Civil and Env. Engg.

iii) Roads (R) - Civil Engg

iv) Non-conventional energy materials – Physics

v) 5G communication (5G)– Electronics and Communication Engg

vi) Building (B)– Civil Engg

vii) Smart Grid (SG)– Electronics and Communication Engg and Electrical and Electronics Engg.

viii) Urban Planning (UP)– Architecture

ix) Building Architecture (BA)– Architecture

x) Aerospace – Space Engg and Rocketry (SER)

xi) Cyber physical system & Cyber security (CPCS)– Computer Science Engg

xii) IoT Application- All departments

xiii) Smart Cities (SC)- All departments

xiv) Transportation (TRP)- (Civil)

1. Courses related to Industry (Process industry (PRI), Manufacturing (MI), Hotel &Tourism based Industry (HMT))- All departments
2. Human health – Chemistry, Bioengineering and biotechnology, Pharmaceutical Sciences and Technology
3. Agricultural and Food security – Chemical Engineering, Bioengineering and Biotechnology
4. Courses related to Entrepreneurship (EU)
5. Management – Management
6. Project Management, Project Engineering – Production Engineering
7. Courses related to Management of industry (MI)
8. Management (M) – Management
9. Hotel Management (HM) – Hotel Management and Catering Technology
10. Additive Manufacturing (AM) – Production Engineering
11. Courses related to Environment (EV)

Air (A) – Civil and Env. Engg.

Soil (S) - Civil and Env. Engg.

Solid Waste (SW) - Civil and Env. Engg.

Ecology (EC) - Civil and Env. Engg.

Acoustics (AC) – Architecture, Space Engg. & Rocketry

A sample document for one program, i.e., B.Tech in EEE is attached for reference. The course information sheet (CIS) for individual courses is given as proof where POs, PSOs and COs are specified. As an outcome of these programs many of our graduate students are contributing as significant human resources at local, regional, national and international levels.

File Description	Document
Upload Additional information	View Document

1.1.2 Percentage of Programmes where syllabus revision was carried out during the last five years.

Response: 88.52

1.1.2.1 **How many Programmes were revised out of total number of Programmes offered during the last five years**

Response: 54

1.1.2.2 **Number of all Programmes offered by the institution during the last five years.**

Response: 61

File Description	Document
Minutes of relevant Academic Council/BOS meeting	View Document
Institutional data in prescribed format	View Document
Details of Programme syllabus revision in last 5 years	View Document
Link for additional information	View Document

1.1.3 Average percentage of courses having focus on employability/ entrepreneurship/ skill development offered by the institution during the last five years

Response: 100

1.1.3.1 Number of courses having focus on employability/ entrepreneurship/ skill development year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
1278	1356	1311	1215	1156

File Description	Document
Institutional data in prescribed format	View Document

1.2 Academic Flexibility

1.2.1 Percentage of new courses introduced of the total number of courses across all programs offered during the last five years.

Response: 49.59

1.2.1.1 **How many new courses were introduced within the last five years.** Response: 1269	
1.2.1.2 **Number of courses offered by the institution across all programmes during the last five years.** Response: 2559	
File Description	**Document**
Institutional data in prescribed format	View Document

1.2.2 Percentage of Programmes in which Choice Based Credit System (CBCS) / elective course system has been implemented (Data for the latest completed academic year). **Response:** 92.98	
1.2.2.1 **Number of Programmes in which CBCS / Elective course system implemented.** Response: 53	
File Description	**Document**
Institutional data in prescribed format	View Document

1.3 Curriculum Enrichment

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics ,Gender, Human Values ,Environment and Sustainability into the Curriculum

Response:

The Institution integrates several cross-cutting societal issues into the curriculum. Following are the efforts made by the university in this direction

- **Gender:**
  - **Gender issues are included in the course Professional Practice, law and Ethics which is mandatory for all UG programmes of the University. The subject is touched upon in the mandatory course on Constitution of India and in various other open electives in Management and Humanities domain.**
- **Environment & Sustainability**
  - **The institution offers a large number of courses at UG and PG levels to sensitise the students about the challenges of environment and sustainability.**
  - **Besides the core course on environmental sciences for all UG programmes there are**

various Master's level programmes offered by the Civil, Mechanical, Chemical, Biotechnology and Remote Sensing departments, that are specially focussed on environment, energy management and sustainability issues.

- **Environment and sustainability is covered in Open electives offered by the Civil and Environmental Engineering, Remote sensing and Management department as well. These courses cover various cross cutting issues like Global warming, climate change and their impact on agriculture and forestry, snow and glaciers, environmental sustainability & natural resources**

- **Human value & Professional Ethics**

  - **N.S.S is a core subject for the UG programmes of the institute. Some of the regular initiatives of NSS are tree plantations drives, cleanliness drives, blood donation camps and awareness drives in the villages adopted by the institute regarding nutrition, menstrual hygiene, precautions during pregnancies, symptoms, and prevention and cure of common diseases.**

  - **A course on Professional Practice, law and Ethics is mandatory for all UG students. Open Electives on Business Ethics, Human Rights and Human values, Corporate Social responsibility are offered by the Department of Management.**

- **Besides all the above courses a course on Constitution of India is mandatory across all programmes. This course touches upon all the above domains**

- **As per the regulatory mandate a course on universal human value has been included in the curriculum of UG programmes**

1.3.2 Number of value-added courses for imparting transferable and life skills offered during last five years.

Response: 46

1.3.2.1 **How many new value-added courses are added within the last five years.**

Response: 46

File Description	Document
Institutional data in prescribed format	View Document

1.3.3 Average Percentage of students enrolled in the courses under 1.3.2 above.

Response: 5.9

1.3.3.1 **Number of students enrolled in value-added courses imparting transferable and life skills**

offered year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
0	227	367	469	385

1.3.4 Percentage of students undertaking field projects / research projects / internships (Data for the latest completed academic year).

Response: 23.44

1.3.4.1 **Number of students undertaking field projects or research projects or internships.**

Response: 1195

File Description	Document
List of Programmes and number of students undertaking field projects research projects/ / internships (Data Template)	View Document
Link for additional information	View Document

1.4 Feedback System

1.4.1 Structured feedback for design and review of syllabus – semester-wise / year-wise is received from 1) Students, 2) Teachers, 3) Employers, 4) Alumni

Response: A. All 4 of the above

File Description	Document
Institutional data in prescribed format	View Document

1.4.2 Feedback processes of the institution may be classified as follows:

Response: A. Feedback collected, analysed and action taken and feedback available on website

File Description	Document
Institutional data in prescribed format	View Document

Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1 Demand Ratio (Average of last five years)

Response: 11.7

2.1.1.1 **Number of seats available year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
2493	2406	2399	2624	2310

File Description	Document
Demand Ratio (Average of Last five years) based on Data Template upload the document	View Document
• Any additional information	View Document

2.1.2 Average percentage of seats filled against reserved categories (SC, ST, OBC, Divyangjan, etc.) as per applicable reservation policy during the last five years (Excluding Supernumerary Seats)

Response: 45.94

2.1.2.1 **Number of actual students admitted from the reserved categories year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
426	317	334	341	349

File Description	Document
Average percentage of seats filled against seats reserved (Data Template)	View Document
Any additional information	View Document

2.2 Catering to Student Diversity

2.2.1 The institution assesses the learning levels of the students and organises special Programmes for advanced learners and slow learners

Response:

The Institution starts the assessment of the learning level and approach of students towards learning after their admission in their respective programme. The institution has several mechanisms in place to take care of the diversity of learning abilities of the students.

- One such is through orientation / induction program for those students admitted freshly, the duration of orientation and induction program generally ranges between 2 to 3 weeks as per the AICTE mandate. Senior faculty, officials, librarians, prominent personnel from outside the institution and other experts interact with the students. This is one of the mechanisms which qualitatively provide information on their attitude. The orientation programme is considered by the institution as one of the ways the students not only understand the Institute, but teachers also get to know the students.

- Progress of each student is monitored by a faculty advisor/mentor, this is one of the ways of addressing the learning needs of the students. Besides this, the Institute faculty continuously monitors student learning on a regular basis.

Institute encourages advanced learners and assists slow learners in different ways.

- Advanced learners are supported by the Institute to some extent financially, like :
    - Study abroad programmes
    - Appropriate scholarships based on CGPA and
- Funding to carry out final year project work.
- Advanced learners also have the option to choose minor and in-depth specialization in the area of their academic interest and provision to register for 20% extra credits.

To support slow learners, the faculty and HoDs identify the slow learners who require special classes.

- Institute in its CBCS curriculum has a provision for slow learners to opt for 20% lesser courses out of the total credits for a semester and subsequently can have additional semesters to complete the program at their pace.
- Institute also has outsourced a professional company, “Aspiring Mind” to help slow learners to obtain inputs to the departments for organizing special programmes.
    - The report of Aspiring Minds Campus Analysis Test (AMCAT) provides a detailed analysis of the student quality and their employability in the industry.
    - It is an agency approved by NPIU to conduct such tests in educational institutions.
    - The students' performance is evaluated in comparison to the nation-wide norms, which are

calculated from a sample of entry-level job-aspirants over 22 states across India.

- This comparison reveals those areas in which our students fare better (or otherwise) than the average students assessed in a national level and also give a clear picture of the employability status of students as well as help the institute to improve on the weak areas by identifying the slow learners.

- An overview of the characteristics of top performing students in comparison to the rest is carried out so that appropriate measures can be taken to help the low performers fare better.

2.2.2 Student - Full time teacher ratio (Data for the latest completed academic year)

Response: 18:1

File Description	Document
Any additional information	View Document

2.3 Teaching- Learning Process

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

Response:

Institute promotes experiential learning, participative learning and problem solving methodologies in the students by including project work/ thesis work, industrial visits, field visits, assignments in the curriculum as well as through technical club activities and internship.

A. Experiential learning:

1. Project work/ Thesis work

- All the UG and PG courses have an essential component of project work/ thesis work in their final year.

- The project undertaken includes both experimental and computational works.

- A few selected projects are also funded by the Institute.

2. Summer internship project:

- Training and Placement division facilitates students (2nd and 3rd year UG) for industrial internship.

- Students of B. Arch have to go for a compulsory 16 weeks training / apprenticeship in any registered architectural organization during their 10th semester.
- Students of B. HMCT. have to go for a compulsory 16 weeks training / apprenticeship in any Hotel/ similar establishment during their 6th semester.
- Students of MUP have to go for compulsory 6 weeks training / apprenticeship in any registered planning organization at the end of 2nd semester

3. Industrial Visit:

- In most of the Engineering Departments, Faculty members in consultation with the Head of the Department carry out Industrial Visits for the students.

4. Field visit:

- In some of the courses, Field Visit for students is an essential component of the curriculum
- Students of B. Arch Programme are required to go for a compulsory Educational Tour of 2 weeks' duration in their 2nd and 3rd year.
- Masters in Urban Planning and Master in Geoinformatics students are required to go for a compulsory field trip of one week at the end of 1st semester.
- Students of B. Arch and B.E./B.Tech. (Civil Engineering) essentially take part in field work.

B. Participative learning:

- Group learning
- The Institute has a total of 28 student clubs/societies.
- Out of these nearly half of the student clubs/ societies are technical clubs in nature (IEEE, IET, ACM, EDC, EPAC, Firebolt, Srijan etc.)
- Each club/society is mentored by a faculty advisor and funded annually by the institute for various activities.
- Students through these clubs/societies organize and participate in various technical and socio-cultural events of local and national level such as Pantheon, Hackabit, Data Science workshops, online coding competitions, B plans, lecture series on innovations, data Acquisition and Circuit designs workshops, Industrial visit, and Jharkhand Science and Environment Festivals etc.

- The Team Srijan is focused to design and develop a racing car prototype which has won accolades across India.
- The Team Firebolt members participate in formula car racing
- Robolution club helps in developing robots.

C. Problem Solving Methodologies:

- Assignments/quizzes
- The institute has provision for group assignments/quizzes through which students are engaged in developing problem solving skills.
- Group learning allows the students to gain hands-on learning beyond classroom activities and also to develop problem solving.
- Debates and poster presentation
- Through seminars, conferences, workshops and research colloquium students participate for oral/poster presentation which improves their communication skills

2.3.2 Teachers use ICT enabled tools including online resources for effective teaching and learning process.

Response:

The use of ICT in Teaching Learning strengthens the concept of Participative learning and BIT strongly emphasizes this fact through application of various ICT enabled tools for teaching and learning process.

- Classrooms are well equipped with internet facilities, multimedia teaching aids such as LCD projectors, and smart boards.
- Faculty members are adapted to using digital writing pad for effective teaching on cloud-based Google/MS Teams platform.
- In addition, faculty makes use of virtual laboratory sessions for remote learning.
- Institution has the provision of budgetary support every year for upgrading and adopting the latest ICT enabled tools for enhanced teaching and learning experience.
- WiFi facility exists throughout the campus. WiFi helps the students to access eBooks and other vast library resources.
- The faculty has access to various database software, e-resources and ebooks through remote library facilities. Faculty are encouraged to develop e-content such as SWAYAM, MOOCs etc.
- Institute has a systematic approach in development / up gradation of IT infrastructure. The details of IT enabled classrooms, laboratories, presentation hall, seminar halls, and auditorium and staff rooms in the Institute.

File Description	Document
Provide link for webpage describing the " LMS/ Academic management system"	View Document

2.3.3 Ratio of students to mentor for academic and other related issues (Data for the latest completed academic year)

Response: 15:1

2.3.3.1 **Number of mentors**

Response: 332

File Description	Document
Upload year wise, number of students enrolled and full time teachers on roll.	View Document
mentor/mentee ratio	View Document
Circulars pertaining to assigning mentors to mentees	View Document

2.4 Teacher Profile and Quality

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

Response: 83.15

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

2.4.2 Average percentage of full time teachers with Ph.D./D.M/M.Ch./D.N.B Superspeciality/D.Sc./D'Lit. year-wise during the last five years

Response: 87.61

2.4.2.1 **Number of full time teachers with *Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt.* year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
249	238	238	248	240

File Description	Document
List of number of full time teachers with Ph D/D M/M Ch/D N B Superspeciality/DSc/D Lit and number of full time teachers for 5 years	View Document
Any additional information	View Document

2.4.3 Average teaching experience of full time teachers in the same institution (Data for the latest completed academic year in number of years)

Response: 18.26

2.4.3.1 **Total experience of full-time teachers**

Response: 5039.7

File Description	Document
List of Teachers including their PAN, designation, dept and experience details	View Document
Any additional information	View Document

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

Response: 22.38

2.4.4.1 **Number of full time teachers receiving awards from state /national /international level from Government/Govt. recognized bodies year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
12	12	16	9	13

File Description	Document
Institutional data in prescribed format	View Document
e-copies of award letters (scanned or soft copy)	View Document
Any additional information	View Document

2.5 Evaluation Process and Reforms

2.5.1 Average number of days from the date of last semester-end/ year- end examination till the declaration of results year-wise during the last five years

Response: 13.4

2.5.1.1 **Number of days from the date of last semester-end/ year- end examination till the declaration of results year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
11.5	16	12	13.5	14

File Description	Document
List of Programmes and date of last semester and date of declaration of results	View Document
Any additional information	View Document

2.5.2 Average percentage of student complaints/grievances about evaluation against total number appeared in the examinations during the last five years

Response: 0.48

2.5.2.1 **Number of complaints/grievances about evaluation year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
0	21	29	34	23

File Description	Document
Number of complaints and total number of students appeared year wise	View Document
Any additional information	View Document

2.5.3 IT integration and reforms in the examination procedures and processes (continuous internal assessment and end-semester assessment) have brought in considerable improvement in examination management system of the institution

Response:

The Examination Section has integrated its activities with IT at various levels for smooth conduction of examinations, publication of results and transcript preparation.

- Examination section uses IT tools
    - for proper maintenance of records
    - timely publication of results
    - hassle-free grievance redressal
- Examination section uses ERP for student enrollment, semester registration, issuance of student's admit card and result processing.

The overall examination activities using IT support can be categorized as follows:

Pre examination Procedure:

- Course registration of students is done through ERP portal
- The examination section displays the examination schedule and seating arrangement in its webpage
- Password protected question papers are collected from the concerned faculty members through dedicated email

Examination Conduction

- Conduction of examination: Examination halls are equipped with CCTV for surveillance in addition to Invigilators
- Examinations were conducted in online mode using Microsoft Teams / Google meet platform for the academic year 2019-20 and 2020-21.

Post Examination procedure

- Answer scripts are bar-coded to ensure double-blind evaluation
- Marks are entered in ERP portal
- Tabulation, grade card generation, transcript generation etc. are done using ERP

Weblinks

Examination Section:

https://www.bitmesra.ac.in/Show_Other_Department?cid=1&deptid=258

ERP:

https://erp.bitmesra.ac.in/iitmsv4eGq0RuNHb0G5WbhLmTKLmTO7YBcJ4RHuXxCNPvuIw=?enc=EGbCGWnlHNJ/WdgJnKH8DA==

2.5.4 Status of automation of Examination division along with approved Examination Manual

Response: 100% automation of entire division & implementation of Examination Management System (EMS)

File Description	Document
Current manual of examination automation system and Annual reports of examination including the present status of automation	View Document
Current Manual of examination automation system	View Document

2.6 Student Performance and Learning Outcomes

2.6.1 The institution has stated learning outcomes (generic and programme specific)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents

Response:

Institute offers Undergraduate and Postgraduate programs in all key areas of Engineering, Sciences, Architecture and Management with an excellent teaching environment supported by state-of-art laboratories and modern classrooms to achieve the outcomes.

The institute has adopted the Outcome Based Education (OBE) system for all the programmes by

clearly defining the Course Outcomes (CO), Programme Outcomes (PO) and Programme Specific Outcomes (PSO).

The Institute has a practice of disseminating the information related to learning outcomes to students and other stakeholders. Each program structure along with the detailed syllabus for the courses are uploaded on the website. Each course has course information sheet (CIS) which informs the learners about the objectives, outcomes, the assessment process, lecture delivery methods and important study materials.

The following are a few communication practices, apart from displaying on the website.

i. Course Information Sheets (CIS)

ii. Student Induction Program (SIP)

iii. Department Notice Board

iv. Laboratory Manuals

v. All laboratories

vi. Information to BoS members, parents and alumni.

Institute has a practice of evaluating the attainment of COs, POs and PSOs through direct and indirect assessment processes. Direct assessment consists of internal quizzes/mid-semester and end semester examinations and indirect assessment comprises student feedback on the COs.

Web link of various programme offered by the departments are:

I. Architecture

https://bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=49&pid=76

II. Civil and Environmental Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=50&pid=12

III. Bioengineering and Biotechnology

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=51&pid=6

IV. Chemical Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=69&pid=20

V. Chemistry

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=140&pid=9

VI. Computer Science and Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=70&pid=24

VII. Electrical and Electronics Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=71&pid=28

VIII. Electronics and Communication Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=72&pid=35

IX. Hotel Management and Catering Technology

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=73&pid=40

X. Management

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=75&pid=45

XI. Mathematics

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=168&pid=71

XII. Mechanical Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=74&pid=32

XIII. Pharmaceutical Sciences and Technology

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=77&pid=48

XIV. Physics

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=169&pid=67

XV. Production and Industrial Engineering

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=76&pid=53

XVI. Remote Sensing

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=78&pid=63

XVII. Space Engineering and Rocketry

https://www.bitmesra.ac.in/Visit_Department_Page?cid=1&deptid=167&pid=58

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

Response:

The institute has fully adopted the mandate of the National Board of Accreditation (NBA) for Outcome-based education (OBE). Thus, the institute has integrated planning, teaching and learning, assessment and enhancement phase so as to maximize the likelihood that students achieve those outcomes, as shown in Figure 1.

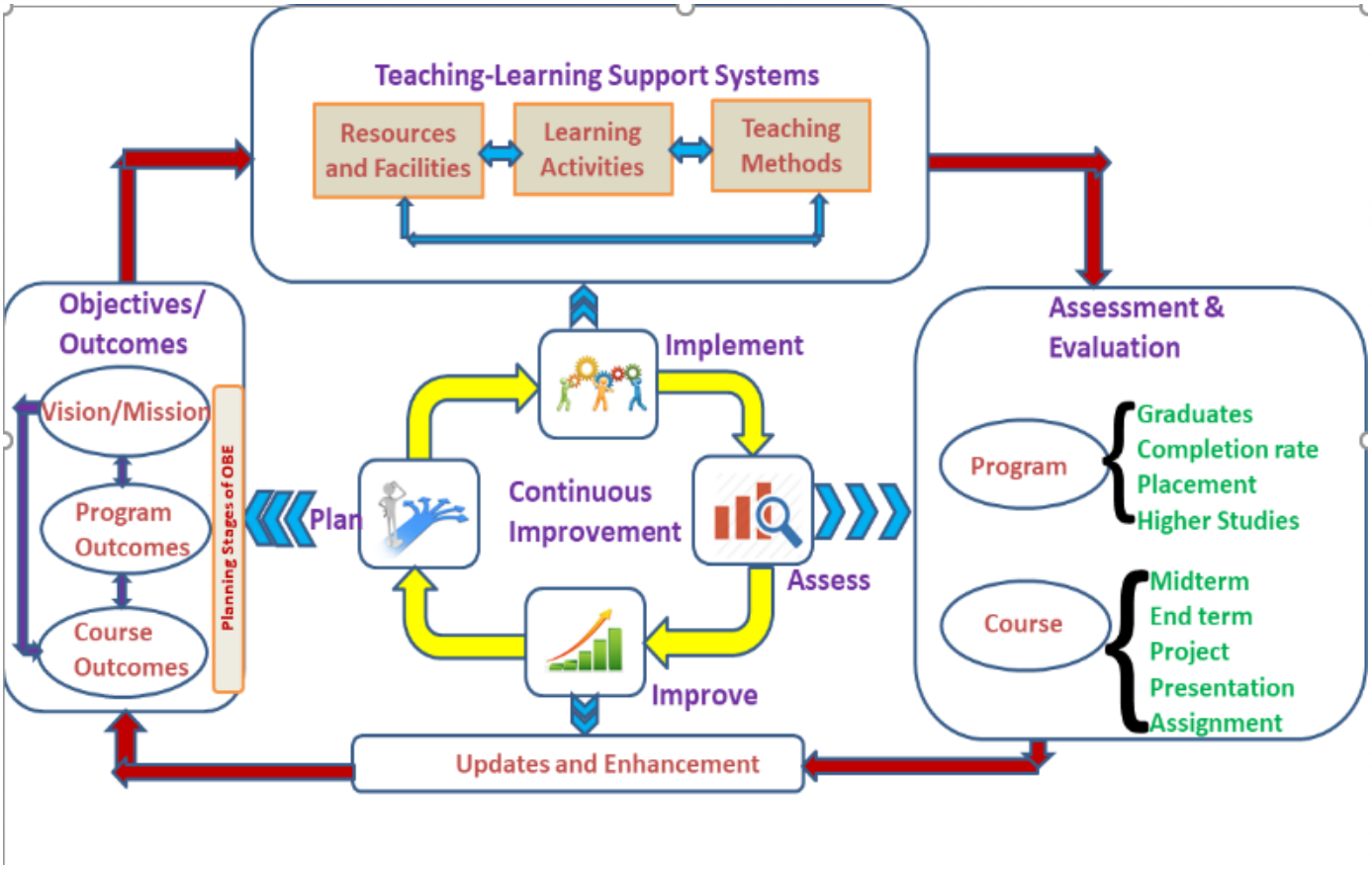

Figure 1: The OBE framework followed in the Institute(additional information)

- As shown in Figure 1, OBE model considers the courses to be oriented in a way that they follow a set of learning objectives and means to achieve them during the planning stage and then implemented with the help of teaching-learning support system
- The assessment and evaluation are being done both at course level as well as program level.
- The assessment process that periodically documents and demonstrates the degree to which the POs and PSOs are attained at program level is based on CO attainment for each course by respective faculty members at the end of the semester.
- The detailed process is shown by the flow chart in Figure 2 below.
    - Step 1 involves direct assessment through mid-semester examination, end-semester examination. The questions of both exams are designed in such a way that they include all the COs. The marks obtained by each student for each CO is converted to percentage and then weighted average is computed for each CO attainment.
    - Step 2 is related to indirect assessment involving feedback from students related to attainment course outcomes after the end of each course.

- Each course outcome for a course mapped to program outcomes (POs) and sample case is given in Table 1 for computation of PO attainment from CO attainment, as depicted in Figure 2.

- For the post graduate program, 3 quizzes are being conducted instead of mid-semester and the flow chart is shown in Figure 3.
- The computation of attainment of COs for each course in the PG program is similar to that described in Figure 2 for UG program.

Figure 2: Flow chat for attainment of CO, PO and PSOfor UG program(additional information)

Course Outcome #	Program Outcomes											
	a	b	c	d	e	f	g	h	i	j	k	l
1	H	M	H	L	M	H	M	M	H	M	M	H
2	H	H	M	H	H	M	H	M	M	M	M	H
3	H	H	M	H	H	L	H	H	L	L	L	H
4	H	H	M	M	H	L	H	M	M	M	H	H
5	H	H	H	H	H	M	H	H	M	M	L	H

Figure 3: Mapping between Course Outcomes and Program Outcomes

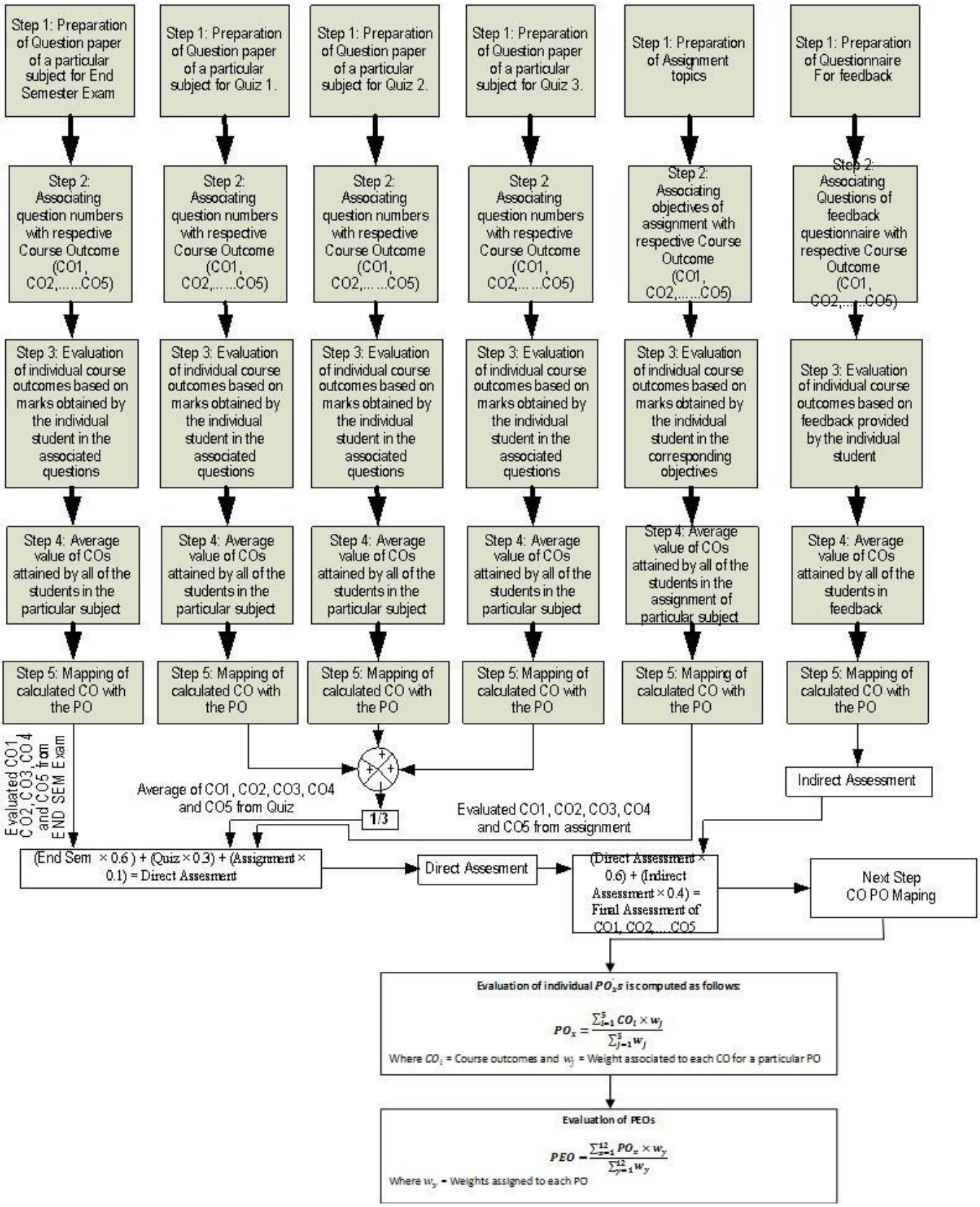
Step 1: Preparation of Question paper of a particular subject for End Semester Exam
Step 1: Preparation of Question paper of a particular subject for Quiz 1.
Step 1: Preparation of Question paper of a particular subject for Quiz 2.
Step 1: Preparation of Question paper of a particular subject for Quiz 3.
Step 1: Preparation of Assignment topics
Step 1: Preparation of Questionnaire For feedback
Step 2: Associating question numbers with respective Course Outcome (CO1, CO2,.....CO5)
Step 2: Associating question numbers with respective Course Outcome (CO1, CO2,.....CO5)
Step 2: Associating question numbers with respective Course Outcome (CO1, CO2,.....CO5)
Step 2 Associating question numbers with respective Course Outcome (CO1, CO2,.....CO5)
Step 2: Associating objectives of assignment with respective Course Outcome (CO1, CO2,.....CO5)
Step 2: Associating Questions of feedback questionnaire with respective Course Outcome (CO1, CO2,.....CO5)
Step 3: Evaluation of individual course outcomes based on marks obtained by the individual student in the associated questions
Step 3: Evaluation of individual course outcomes based on marks obtained by the individual student in the associated questions
Step 3: Evaluation of individual course outcomes based on marks obtained by the individual student in the associated questions
Step 3: Evaluation of individual course outcomes based on marks obtained by the individual student in the associated questions
Step 3: Evaluation of individual course outcomes based on marks obtained by the individual student in the corresponding objectives
Step 3: Evaluation of individual course outcomes based on feedback provided by the individual student
Step 4: Average value of COs attained by all of the students in the particular subject
Step 4: Average value of COs attained by all of the students in the particular subject
Step 4: Average value of COs attained by all of the students in the particular subject
Step 4: Average value of COs attained by all of the students in the particular subject
Step 4: Average value of COs attained by all of the students in the assignment of particular subject
Step 4: Average value of COs attained by all of the students in feedback
Step 5: Mapping of calculated CO with the PO
Step 5: Mapping of calculated CO with the PO
Step 5: Mapping of calculated CO with the PO
Step 5: Mapping of calculated CO with the PO
Step 5: Mapping of calculated CO with the PO
Step 5: Mapping of calculated CO with the PO
Evaluated CO1, CO2, CO3, CO4 and CO5 from END SEM Exam
Average of CO1, CO2, CO3, CO4 and CO5 from Quiz
1/3
Evaluated CO1, CO2, CO3, CO4 and CO5 from assignment
Indirect Assessment
(End Sem × 0.6) + (Quiz × 0.3) + (Assignment × 0.1) = Direct Assesment
Direct Assesment
(Direct Assessment × 0.6) + (Indirect Assessment × 0.4) = Final Assessment of CO1, CO2,....CO5
Next Step CO PO Maping
Evaluation of individual PO_xs is computed as follows:
$$PO_x = \frac{\sum_{i=1}^{5} CO_i \times w_j}{\sum_{j=1}^{5} w_j}$$
Where CO_i = Course outcomes and w_j = Weight associated to each CO for a particular PO
Evaluation of PEOs
$$PEO = \frac{\sum_{z=1}^{12} PO_z \times w_y}{\sum_{y=1}^{12} w_y}$$
Where w_y = Weights assigned to each PO

Figure 4: Flow chat for attainment of CO, PO and PSOfor PG program

2.6.3 Pass Percentage of students(Data for the latest completed academic year)

Response: 93.84

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

Response: 1189

2.6.3.2 **Total number of final year students who appeared for the examination conducted by the Institution.**

Response: 1267

File Description	Document
Upload list of Programmes and number of students passed and appeared in the final year examination	View Document
Link fo any additional information	View Document

2.7 Student Satisfaction Survey

2.7.1 Online student satisfaction survey regarding teaching learning process

Response:

File Description	Document
Upload database of all currently enrolled students	View Document

Criterion 3 - Research, Innovations and Extension

3.1 Promotion of Research and Facilities

3.1.1 The institution's Research facilities are frequently updated and there is a well defined policy for promotion of research which is uploaded on the institutional website and implemented

Response:

The institution Research facilities are frequently updated and there is well defined policy for promotion of research which is uploaded on the institutional website and implemented

Documents: Minutes of the Governing Council/ Syndicate/Board of Management related to research promotion policy and its adoption

The institute is committed to excellence in research that leads to creation of knowledge and finds adequate applications for the benefit of the society. The R&D activities are focused over a wide horizon covering basic sciences, applied research, interdisciplinary and collaborative research programs. The R&D activities in the institute always ensure highest quality adhering to the ethical values and global standard.

In order to encourage R&D activities, the institute has initiated several schemes. These are as follows:

- Institute Research Fellow (IRF) Scheme
- Financial Support to UG & PG Students Projects
- Seed Money Scheme for Faculty Members
- Financial Support to attend international Conference
- Financial Support to attend National Conference/Workshop/Seminar etc
- Research Promotion Grant (RPG)
- Partial support towards Publication Charge
- Matching Grant to Procure Equipment(s)
- Financial Support to file patent applications
- Research scholars Colloquium.
- Recognition of contribution to research in CAS for promotion.
- Intellectual property rights (IPR) policies

- Creation and Upgradation of Research Facilities

In addition to above mentioned schemes which are operational to create a conducive environment for R&D activities, there are several other noteworthy initiatives to create modern infrastructure with state of the art equipment and computational facilities. The Central Instrument Facility (CIF) is a central facility in the institute which is equipped with a large number of state of the art equipment in the domain of materials sciences, nanotechnology, biotechnology, and pharmaceutical sciences and technology. Faculty members from any department can take the benefit of CIF facilities for their research with a nominal payment. The facilities of the CIF are continuously upgraded to meet the requirements of a large number of faculty members who are active in contemporary research. The institute has also created a high performance computing (HPC) facility which is housed in the computer science department and faculty members, research scholars and students can access this facility for their computational needs from anywhere in the campus. Dedicated R&D laboratories with state of the art facilities have been also created in several departments which are continuously upgraded.

3.1.2 The institution provides seed money to its teachers for research (average per year, INR in Lakhs)

Response: 25.82

3.1.2.1 **The amount of seed money provided by institution to its faculty year-wise during the last five years (INR in lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
18.86	24.9	66.2	13	6.14

File Description	Document
Minutes of the relevant bodies of the University	View Document
Institutional data in prescribed format	View Document
Budget and expenditure statements signed by the Finance Officer indicating seed money provided and utilized	View Document
Any additional information	View Document

3.1.3 Percentage of teachers receiving national / international fellowship / financial support by various agencies for advanced studies / research during the last five years.

Response: 0.72

3.1.3.1 **The number of teachers who received national / international fellowship / financial support**

by various agencies for advanced studies / research year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
0	3	3	1	3

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.1.4 Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows enrolled in the institution during the last five years.

Response: 168

3.1.4.1 **The Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows enrolled in the institution year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
25	33	44	34	32

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.1.5 Institution has the following facilities to support research

1. **Central Instrumentation Centre**
2. **Animal House/Green House**
3. **Museum**
4. **Media laboratory/Studios**
5. **Business Lab**
6. **Research/Statistical Databases**
7. **Mootcourt**
8. **Theatre**
9. **Art Gallery**
10. **Any other facility to support research**

Response: A. 4 or more of the above

File Description	Document
Upload the list of facilities provided by the university and their year of establishment	View Document
Upload any additional information	View Document
Paste link of videos and geotagged photographs	View Document

3.1.6 Percentage of departments with UGC-SAP, CAS, DST-FIST, DBT, ICSSR and other recognitions by national and international agencies (Data for the latest completed academic year)

Response: 17.65

3.1.6.1 **The Number of departments with UGC-SAP, CAS, DST-FIST , DBT, ICSSR and other similar recognitions by national and international agencies.**

Response: 3

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.2 Resource Mobilization for Research

3.2.1 Extramural funding for Research (Grants sponsored by the non-government sources such as industry, corporate houses, international bodies for research projects) endowments, Chairs in the University during the last five years (INR in Lakhs).

Response: 15.34

3.2.1.1 **Total Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution year-wise during the last five years (INR in Lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
0	15.34	0	0	0

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.2.2 Grants for research projects sponsored by the government agencies during the last five years (INR in Lakhs).

Response: 3621

3.2.2.1 **Total Grants for research projects sponsored by the government agencies year-wise during the last five years (INR in Lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
367.44	421.17	395.6229	768.8295	1667.9353

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.2.3 Number of research projects per teacher funded by government and non-government agencies during the last five years

Response: 1.74

3.2.3.1 **Number of research projects funded by government and non-government agencies during the last five years.**

Response: 113

3.2.3.2 **Number of full time teachers worked in the institution year-wise during the last five years..**

Response: 325

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.3 Innovation Ecosystem

3.3.1 Institution has created an eco system for innovations including Incubation centre and other initiatives for creation and transfer of knowledge.

Response:

The Institute has state-of-the-art laboratory facilities which are used by faculty members and students for research and innovation. The Institute has established a culture of excellence and innovation among the

faculty and students. Some of the important initiatives to support this goal are mentioned below:

- As per the statutory mandate, Institute has Institute Innovation Council (IIC) to promote a culture of innovation amongst the faculty and students
- Institute has established in collaboration with AICTE, the IDEA lab at a sharing cost of Rs. 1.06 crores, to enhance the skills of students towards innovation and entrepreneurship
- Small Industries Research and Development Organisation (SIRDO) was established in 1970 as an initial step for the first time in the nation for the creation of an ecosystem for entrepreneurship development. This activity was further strengthened by support of Bihar State Government in 1978 and termed as the Small Industries Research Training and Development Organisation (SIRTDO).
- The pioneering work initiated and nurtured by the Institute through SIRDO and SIRTDO was further advanced into Science and Technology Entrepreneur's Park (BIT STEP) which was an initiative of National Science and Technology Entrepreneurship Development Board (NSTEBD). BIT-STEP came into existence as a registered society in 1985, as the first STEP in the country.
- Institute hosts an innovation contest with prize money to students to support their start-up concepts
- There is an Entrepreneurship Development Cell (EDC) consisting of students and faculty members. The EDC works under Dean (Student Welfare) and conducts expert lectures and workshops and encourages the students to participate in various activities/events at regional and national level related to entrepreneurship and start-ups.
- Students are encouraged to participate in various hackathons at state and national level. Some of the teams are recognised for their innovative ideas in Smart India Hackathon. Students have been participating in competitions organised by companies to solve real world problems and are awarded with Job offers for their innovative ideas.
- Institute has a functional IPR Cell, which is instrumental in encouraging the faculty members in filing IPR's, organising awareness workshops and framing of IPR policy. Institute has an IPR policy where there is a provision of revenue sharing in case of commercialisation of IPR's.

(Weblink: https://www.bitmesra.ac.in/Visit_Other_Department_9910?cid=1&deptid=202&pid=218)

3.3.2 Number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development during the last five years.

Response: 101

3.3.2.1 **Total number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
39	31	15	9	7

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.3.3 Number of awards / recognitions received for research/innovations by the institution / teachers / research scholars / students during the last five years.

Response: 60

3.3.3.1 **Total number of awards / recognitions received for *research* / innovations won by institution / teachers / research scholars / students year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
26	8	5	17	4

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.4 Research Publications and Awards

3.4.1 The Institution ensures implementation of its stated Code of Ethics for research through the following: 1. Inclusion of research ethics in the research methodology course work 2. Presence of Ethics committee 3. Plagiarism check through software 4. Research Advisory Committee

Response: A. All of the above

File Description	Document
Code of ethics for Research document, Research Advisory committee and ethics committee constitution and list of members on these committees, software used for Plagiarism check, link to Website	View Document
Any additional information	View Document

3.4.2 The institution provides incentives to teachers who receive state, national and international recognitions/awards 1.Commendation and monetary incentive at a University function 2.Commendation and medal at a University function 3. Certificate of honor 4.Announcement in the Newsletter / website

Response: B.. 3 of the above

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.4.3 Number of Patents published / awarded during the last five years.

Response: 19

3.4.3.1 **Total number of Patents published / awarded year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
3	3	1	4	8

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.4.4 Number of Ph.D's awarded per teacher during the last five years.

Response: 1.11

3.4.4.1 **How many Ph.D's are awarded within last five years.**

Response: 308

3.4.4.2 **Number of teachers recognized as guides during the last five years**

Response: 278

File Description	Document
Institutional data in prescribed format	View Document
URL to the research page on HEI web site	View Document

3.4.5 Number of research papers per teachers in the Journals notified on UGC website during the last five years

Response: 5.96

3.4.5.1 **Number of research papers in the Journals notified on UGC website during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
377	331	286	280	377

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.4.6 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

Response: 2.85

3.4.6.1 **Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
154	167	156	181	131

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.4.7 E-content is developed by teachers :

1. **For e-PG-Pathshala**
2. **For CEC (Under Graduate)**
3. **For SWAYAM**
4. **For other MOOCs platform**
5. **Any other Government Initiatives**
6. **For Institutional LMS**

Response: D. Any 2 of the above

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.4.8 Bibliometrics of the publications during the last five years based on average citation index in Scopus/ Web of Science or PubMed

Response:

3.4.9 Bibliometrics of the publications during the last five years based on Scopus/ Web of Science - h-index of the Institution

Response:

3.5 Consultancy

3.5.1 Institution has a policy on consultancy including revenue sharing between the institution and the individual and encourages its faculty to undertake consultancy.

Response:

The faculty members of the Institute are encouraged to undertake, individually or in group, consultancy services to any Government and private organizations using the available infrastructure of the institute partially or fully. Institute has taken up several nationally important consulting projects in various areas of science and engineering.

The consultancy services are mainly related to following activities:

- Providing technical advice
- Scientific analysis of specific nature
- Design, vetting and Detailed Project Report (DPR)
- Demand driven user specific corporate training programmes

The institute has well laid down norms for consultancy revenue sharing. The consultancy share between Institute and faculty is 50:50 ratio.

3.5.2 Revenue generated from consultancy and corporate training during the last five years (INR in Lakhs).

Response: 198.5

3.5.2.1 **Total amount generated from consultancy and corporate training year-wise during the last five years (INR in lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
32.04	82.11	49.82	19.42	15.11

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.6 Extension Activities

3.6.1 Extension activities in the neighbourhood community in terms of impact and sensitising students to social issues and holistic development during the last five years.

Response:

The Institute undertakes a plethora of extension activities, especially in its neighbourhood for creating awareness about social issues, national campaigns and policies along with comprehensive development of the selected rural areas and community groups. For all these campaigns the Institute has created a number of platforms. As per the provisions of academic programs, the Institute offers first and second-year students the option to select NCC, or NSS depending upon their interests. Among the student clubs/societies few clubs like Rotaract Club, Leo Club, EPAC etc. function on these aspects.

NSS wing of BIT has adopted 10 nearby villages for the socio-economic upliftment of the families and provides free education to the underprivileged children of different age groups. Besides this NSS, NCC, and other socio-cultural clubs/societies have also carried out a number of campaigns for the promotion of the following:

- Swachh Bharat Abhiyan
- Blood Donation Camps
- Plantation Drives
- International Yoga Day
- World Tobacco Prohibition Day
- Traffic Safety Week

- Women Empowerment Programmes
- Clothes Distribution Drive
- Flood Relief Collection Drive
- Seminar on National Education Day
- Independence Day and Republic Day Prabhat Pheri
- Voting Awareness Campaign
- National Unity Day
- Plastic Ban Campaign
- AIDS Awareness campaign
- National Integration Camp

These programs are helping students to come in closer contact with the society and community. They get to know about various social problems faced by the people in the society and try to find plausible solutions to these problems and understand the condition along with decision making for attaining a well-groomed and trained personality.

These activities also help students in holistic development and induce in them leadership qualities, along with spirit of nationalism and cooperation. Programmes such as yoga and meditation develop qualities like unity, brotherhood and sportsmanship along with better health. Institute organizes visits to old age home, orphanages to inculcate compassion, diversification and social survival skills in students. Through these activities students not only excel in their academics but also augment their skills and attitude to become a responsible citizen.

3.6.2 Number of awards received by the Institution, its teachers and students from Government /Government recognised bodies in recognition of the extension activities carried out during the last five years

Response: 6

3.6.2.1 **Total number of awards and recognition received for extension activities from Government/ Government recognised bodies year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
1	1	1	0	3

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.6.3 Number of extension and outreach programs conducted by the institution through NSS/NCC, Government and Government recognised bodies during the last five years

Response: 181

3.6.3.1 **Number of extension and outreach programs conducted by the institution those through NSS/NCC, Government and Government recognised bodies during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
23	29	33	34	62

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.6.4 Average percentage of students participating in extension activities listed at 3.6.3 above during the last five years

Response: 73.38

3.6.4.1 **Total number of students participating in extension activities listed at 3.6.3 above year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
1463	4688	3846	3415	4654

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.7 Collaboration

3.7.1 Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship per year

Response: 76

3.7.1.1 **Total number of Collaborative activities with other institutions / research establishment / industry for research and academic development of faculty and students year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
61	36	143	82	58

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.7.2 Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.

Response: 54

3.7.2.1 **Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
10	16	12	9	7

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

Criterion 4 - Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1 The institution has adequate facilities for teaching - learning. viz., classrooms, laboratories, computing equipment, etc.

Response:

All the infrastructure and facilities for teaching-learning in terms of quantity as well as physical sprawl are beyond the minimum statutory requirements from AICTE, PCI, CoA, etc.

Classrooms:

The institute has state-of-the-art facilities to facilitate teaching and learning processes. Smart classrooms and ICT enabled classrooms facilities are available in all of the classrooms of the institute. There are a total of 60 classrooms in the Institute, out of which 50 are ICT enabled and 10 are smart classrooms.

ICT enabled classrooms are equipped with features such as projectors, Wi-Fi/ LAN, and etc.

In addition to these two classrooms with Video conferencing facilities are also available in the Institute.

Laboratories:

Program specific laboratories are available in each Department with advanced equipment/ Instruments, few to mention

- Plasma Laboratory (Department of Physics)
- Smart grid Laboratory (EEE)
- Electrical Drives Laboratory (EEE)
- VLSI Laboratory (ECE)
- Wireless communication Laboratory (ECE)
- Wind-tunnel Facility: subsonic, supersonic (SER)
- Rocket propulsion Laboratory (SER)
- Renewable Energy Laboratory (ME)
- Robotics Laboratory (ME)
- Food production Laboratory - (HMCT)
- Bakery and confectionary Laboratory (HMCT)
- Plant tissue culture Laboratory (BBT, PST)
- Language Laboratory with MOOCs provision

Advanced characterization facilities under Central Instrumentation Facility (CIF)

Adequate computational facilities (1 computer/3 students) required for teaching-learning process and research is available at the Department level as well as Central level.

Advanced computing facilities include the state-of-art High-performance computing (HPC) and dedicated Computer-Aided Design (CAD)/ Computational Fluid Dynamics (CFD)/Computer-Aided Drug Design

(CADD) labs at Departmental level.

Besides these, the Institute has many teaching tools and software with a license for basic engineering courses from Cognifront in the subject area such as Basic Civil Engineering, Engineering Graphics, Data Structures and Algorithms, Engineering Mechanics, Basic Mechanical Engineering, Basic Electronics Engineering, Engineering Mathematics.

Institute has campus-wide licenses for Office365, Mathworks, ANSYS, NI and LabView, ETAP, SCADA etc.

4.1.2 The institution has adequate facilities for cultural activities, yoga, games and sports (indoor & outdoor); (gymnasium, yoga centre, auditorium, etc.,)

Response:

The institute believes in the philosophy of delivering holistic education, hence, the institute has included PT and Games (Course code: MC103, MC203) and Creative Arts (MC104, MC108, MC204, MC208) as an elective subject of total 4 credits in the curriculum of undergraduate programs. Every year the institute organizes national/zonal inter institute sports events: annual athletic meet, an annual fest the “VAJRA’ a cricket tournament in the memory an ex-student Chetan Devraj and a cultural fest ‘BITOTSAV’

Sports facilities

The institute has a centrally created sports complex facility in 25 acres of land existing since 1955, and upgraded on a regular basis for all the games (indoor and outdoor) of national standards.

Name of facility	No.	Name of facility	No.
Track and field arena with stadium of 5000 seating capacity	01	Lawn tennis with a gallery of seating capacity 1000	02
Indoor wooden Badminton court	02	Multi gym	02 (one each for boys and girls)
Changing room for Badminton court	02	Gymnasium Hall	01
Football ground	02	Cricket net practice	01
Basketball court with lighting facility	02	Kabbadi ground	02
Hockey field	01	Throwing circle	02
Volleyball ground with lighting facility	03	Discuss throw arena	01
Cricket Field with a gallery of seating capacity 500	01	Yoga arena	01

In addition to these sports facilities such as table tennis, carom, badminton and volleyball are also provided in each of the student hostels. Institute also has an exclusive club house equipped with a modern indoor multi-gym, badminton court, outdoor gym, and yoga space for its employees and their family.

Music and Cultural facilities:

To develop social values in students, the institute has formed various clubs and societies. There are 12 clubs and societies actively involved in promoting social and cultural atmosphere within and outside the campus. These clubs organize events such as Deepotsav, Dance and Music Fests etc. The institute has two well equipped air conditioned music rooms of 800 square feet area housing the latest Indian and Western musical instruments. In addition, a student activity complex of approximately 700 square feet area with a room and a hall for dance and other activities was created in the year 2017.

The Institute has a fully air conditioned state-of-the-art GP Birla auditorium (3280 sq. m.) of 2500 seating capacity, and an auditorium (CAT) of 300 (450 sq. m.) seating capacity to hold various academic and cultural activities. There is also a community hall (approx. 300 sq. m.) available for the students and residents for holding cultural and social events. There is a dedicated place and a shooting range for NCC within the campus.

4.1.3 Availability of general campus facilities and overall ambience

Response:

Keeping up with the times it has never been enough at BIT as it has mostly been either at the top of ranking surveys or the first among initiators of path breaking ideas. Since the introduction of new academic programmes to re-structuring the current ones, from improving infrastructure to augment the teaching learning facilities, the students' welfare has always been the focal point in BIT's larger picture. Major State-of-the-art facilities include:

- Laboratories and classrooms.
- Central Instrumentation Facility(CIF), High Performance Computing(HPC) Laboratory, Central Computer Aided Design(CAD) Laboratory, Design Studio and Language & MOOCs lab, etc.
- Computers and networking facilities
- Institute Central Library has 3900 sq. meter working space and can seat 200 students, fully automated and Wi-Fi facility.
- Sports complex of the institute spreads over 25 acres of land being used every day by approximately five hundred students for Physical Training, Games classes and Practicals. The complex consists of a standard athletic track along with badminton hall, multi-gym hall, volleyball court, basketball court, hockey ground, football field, kabaddi court, netball court, kho - kho field, cricket field, lawn tennis court, gymnasium hall etc.
- Two auditoriums, namely G.P. Birla Auditorium with a seating capacity of 2500 and Closed

AmphiTheatre (CAT) with a seating capacity of 300 for Institute events.

- Central water treatment plant in the campus (1.6 MLD).
- Campus Power Distribution System having 33 KV Gas Insulated Switchgear(GIS), 11 KV Ring Main Unit(RMU), SCADA based monitoring, control and protection of substations with completely underground cabling for distribution(except street lights, which is under process).
- 1 MWp solar rooftop green power source.

Other significant facilities:

- Canteens/ Eateries to cater the needs of snacking and light refreshments, within the premises.
- Shopping complexes in the inner and outer campuses to meet the basic requirements of the residents.
- An on-campus Dispensary-cum-Health Centre provides primary healthcare facilities adequately staffed with resident doctors in the campus as well as nursing staff with good back-up of ambulances.
- Transport facility of the Institute to meet the transportation needs of the students and staff families for commuting to and from Ranchi city for schooling and other essential requirements. A good number of Institute vehicles cater to the needs of other official requirements.
- Institute has two Guest Houses within the campus.
- A centrally located Administrative Building with its hallmark presence having a high tower with dome with total area approx. 26,000 sq.m.
- Fully residential campus with 14 Hostels and 550 Staff quarters.
- Barrier Free Campus.
- Campus is spread over approx. 780 acres within the patches of lush green Sal (Shorea robusta – state tree of Jharkhand state) forest almost land-locked within the Subarnrekha and Jumar river confluence.

4.1.4 Average percentage of expenditure for infrastructure augmentation excluding salary during the last five years (INR in Lakhs)

Response: 47.4

4.1.4.1 **Expenditure for infrastructure augmentation, excluding salary during the last five years (INR in lakhs)**

2020-21	2019-20	2018-19	2017-18	2016-17
2808.29	1109.05	1329.71	2345.63	2286.88

File Description	Document
Institutional data in prescribed format	View Document

4.2 Library as a Learning Resource

4.2.1 Library is automated using Integrated Library Management System (ILMS) and has digitisation facility

Response:

The Central Library of BIT is more like an Integrated Knowledge Resource center that is stocked with over 1.5 Lakhs books, 466 Institute Theses, more than 18 thousand bound volumes (periodicals), national and international journals, covering all aspects of academic studies and research materials.

BIT library has over 22,000 online journals and more than 43 lacs online books. All the e-resources are accessible locally within the campus as well as remotely. Plagiarism checking and Grammar checking tools are also subscribed by BIT Mesra Library.

BIT library is housed in the main academic building premises in a separate, two storey building with 3900 sq. meters. The library is equipped with 200 seating capacity. The library is fully automated with all its subsystems having Fiber Optic connectivity and Wi-Fi. It has a separate Research and Computer Lab with provision of 30 workstations to access e-resources and e-databases.

Library automation was started with the purchase of desktop server and LIBSYS software: version 4.0 as early as 2004 and it started creating a database of library assets. With the gradual upgradation of LIBSYS and automating another subsystem. Barcoding of documents was done, and a barcoded library membership card was also introduced in 2004 onwards. Earlier, the library was using ‘Web Centric Libsys version-7’ Integrated Library Management Software on Windows Server platform with 12 clients attached to it. In October 2019, BIT Mesra Library automated with full RFID technology using Open source Software “KOHA”. Description of ILMS is mentioned below:

Name of ILMS software - Libsys from 2004 and Update in KOHA in 2019

Nature of automation (fully or partially) - Fully (Update KOHA ILMS Version - 16.05)

Year of Library Automation - 2004

The specifications of KOHA ILMS as follows,

- Browser-based access

- Facility of fetching bibliographical data from other sources.
- Improved user friendly OPAC interface
- Easing out Import/Export of data
- Quick report generation in different formats etc.

RFID Technology implemented in Central Library has the following items:

RFID Security Gate - 01

RFID Book Tags - 200000

RFID Staff Station - 02

RFID KIOSK - 02

Book Drop Box - 02

Handheld RFID Reader - 02

Smart I Card - 6000

Periodically, a list of books (issue/return) and reminders are generated in an automated manner. Acquisition of serial, maintaining issue records, sending reminders of missing issues, generation binding list etc. are also automated. At present, the library is providing access to more than 23 Institute/UGC subscribed online ebooks, online journals and online journal databases through Wi-Fi and Fibre Optic connectivity along with open access databases.

OPAC/Web OPAC is the main tool to provide access to the library collection. Library website also provides information about resources, sources, rules and regulations. User Education Programs are also organized from time to time for students and faculties. Library is secured with CCTV monitoring for better management. All the faculty members, staff and students are provided with RFID enabled library cum institute ID card.

4.2.2 Institution has access to the following: 1. e-journals 2. e-ShodhSindhu 3. Shodhganga Membership 4. e-books 5. Databases 6. Remote access to e-resources

Response: A. Any 4 or more of the above

File Description	Document
Institutional data in prescribed format	View Document

4.2.3 Average annual expenditure for purchase of books/ e-books and subscription to journals/e-journals during the last five years (INR in Lakhs)

Response: 189.28

4.2.3.1 Annual expenditure for the purchase of books and journals including e-journals year-wise during last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
184.84	190.99	164.65	236.38	169.55

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document

4.2.4 Percentage per day usage of library by teachers and students (foot falls and login data for online access) during the latest completed academic year

Response: 1.12

4.2.4.1 **Number of teachers and students using library per day over last one year**

Response: 60

File Description	Document
Any additional information	View Document

4.3 IT Infrastructure

4.3.1 Percentage of classrooms and seminar halls with ICT - enabled facilities such as LCD, smart board, Wi-Fi/LAN, audio video recording facilities. (Data for the latest completed academic year)

Response: 100

4.3.1.1 **Number of classrooms and seminar halls with ICT facilities**

Response: 78

File Description	Document
Institutional data in prescribed format	View Document
Paste link for additional information	View Document

4.3.2 Institution has an IT policy, makes appropriate budgetary provision and updates its IT facilities including Wi-Fi facility

Response:

The Institute has a well-defined IT policy that details the operational specifications of procurement, deployment, configuration and maintenance of its IT infrastructure . Institute has established a dedicated information communication and technology cell (ICTC) with a nodal officer as Prof. incharge. There is provision for annual budget allocation for the effective functioning of the ICTC. The IT infrastructure available in the Institute can be broken down into the following components:

- Internet facilities: The Institute is currently serviced by three different ISPs i.e. Internet Service Providers viz. BSNL (through its NKN network), Vodafone and Tejas networks. Previously, Institute has also availed the services of Reliance Jio (2019 to 2020). We have consistently increased the bandwidth available on the campus over the last few years, with augmentations to the tune of 500 Mbps in 2018 and 2017 and 400 Mbps in 2016. The current available bandwidth is approximately 1.6 Gbps. The internal connectivity is through a combination of Fiber optics and high-end CISCO switches, which ensure a stable distribution of internet connectivity throughout the campus.

- Wi-Fi Facilities: To complement the wired internet connectivity available in the Institute’s halls of residences and offices, there is a large array of WiFi devices – both indoor and external, which provide internet connectivity to various locations on the campus. This ensures that students have easy access to the internet even when mobile or at points of congregation spread across the Institute. The number of such devices have consistently increased over the last few years and as on date we have 254 Wi-Fi access points on campus. Details about the Wi-Fi infrastructure is available in the Appendix B.

- Video Conferencing facilities – The Institute has also developed two different video conferencing sites to help smooth conduction of meetings with external locations. The video conferencing setup uses a Panasonic codec with support for screen sharing, content recording, multiple camera views etc. Apart from the video conferencing facility, the Institute also has two different specialized Skype setups to facilitate seminar presentations to and for external locations. These setups are extensively used for conducting onlines academic sessions, Ph.D. viva voce, training, and placement recruitment interviews etc. The Institute also has a separate facility to conduct classes for remote locations.

- Security – the Institute uses SOPHOS as its Unified Threat Management (UTM) currently and earlier it had the Cyberoam line of products. The Institute has also maintained a server based anti-virus protection for its client end devices for the last eight years. As on date we have licensed E-SET antivirus being used as our client level anti-virus protection tool.

- The Institute also annually purchases pan University licenses for Office 365 portal, which includes Microsoft Office, Microsoft Teams and Skype for Business. The Institute also has a TAH (Total Academic Head) license with Mathworks Inc. for MATLAB, which is renewed every year. Apart from this most Departments purchase their own software as per their requirements.

4.3.3 Student - Computer ratio (Data for the latest completed academic year)

Response: 3:1

4.3.4 Available bandwidth of internet connection in the Institution (Leased line)

Response: A. ?1 GBPS

4.3.5 Institution has the following Facilities for e-content development

1. **Media centre**
2. **Audio visual centre**
3. **Lecture Capturing System(LCS)**
4. **Mixing equipments and softwares for editing**

Response: A. All of the above

File Description	Document
Institutional data in prescribed format	View Document
Links of photographs	View Document

4.4 Maintenance of Campus Infrastructure

4.4.1 Average percentage expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component during the last five years

Response: 52.6

4.4.1.1 **Expenditure incurred on maintenance of infrastructure (physical facilities and academic support facilities) excluding salary component year-wise during the last five years (INR in lakhs)**

2020-21	2019-20	2018-19	2017-18	2016-17
2010.78	2434.17	2200.99	1914.11	1894.22

File Description	Document
Institutional data in prescribed format	View Document

4.4.2 There are established systems and procedures for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc.

Response:

The academic infrastructure of the institute, such as laboratories and classrooms are housed in its 17 departments. All departments have their own laboratories. Significant mentions include the Central CAD Laboratory, Design Lab and Language lab. In addition, there are several shared classrooms and halls. The regular maintenance of these facilities is taken care of by the respective departments in which the facilities are located. The upgradation and repair work of these facilities are undertaken by the Planning and Development division, which has a number of experienced engineers. This department is also responsible for periodically surveying the state of affairs of the various infrastructures on the campus and taking measures to ensure standard maintenance and upkeep.

- The Central Instrumentation Facility provides a central facility of latest and advanced analytical techniques for research in various areas of science and technology. It houses several highly sophisticated and modern analytical equipments. This facility is the responsibility of a special team comprising research officers, junior superintendents and technical assistants, attendants and is headed by a professor.

- The BIT Central Library provides comprehensive information to fulfill the needs of the BIT community and is ably taken care of by the Library Team, which consists of an assistant librarian and an information scientist. The procurement of books and materials, subscription of journals and maintenance of archives are managed by this team. There are online requisition forms in place for the users to avail books and print journals.

- The computers and networking facilities and all digital physical infrastructures on campus are maintained by the Communication Services section.

- The Estate Office, which has a support staff of mechanics, plumbers, welders, carpenters, masons and electricians, is responsible for the general maintenance of the campus.

- The Department of Physical Education manages the sports facilities on the campus. This department is headed by a sports-inclined faculty member and a group of sport-enthusiast students. This department manages the regular upkeep of the indoor game facilities and the extensive playgrounds. Any major works are reported to the Planning and Development division. The Institute has a well-appointed Gymnasium, managed by the Department of Physical Education.

- Institute has guest house facilities within the campus to meet its needs. The upkeep and maintenance of the guest houses are attributed to the Estate Office.

- The campus boasts two auditoriums, namely G.P. Birla Auditorium and CAT Hall, that are utilized for cultural events organized by the student community, and are maintained by the Estate Office.

- The campus also has two canteens and several other eating options within the premises, which are entrusted in the supervision of the Committee for Shop Allocation and Vendor Management. The same committee also manages the shopping complexes on campus.

- An on-campus dispensary provides for several diagnostic procedures and preventive & curative treatments. A Doctor from the campus Health Centre accompanies the patient in case of an emergency. The campus Dispensary-cum-Health Centre also provides free treatment and supply of medicines to residents of local villages in the region.

- The Institute provides transportation facilities to students and staff and their children for commuting to and from Ranchi city. The bookings, schedules, running and maintenance of vehicles is undertaken by the Transport Office.

NAAC

Criterion 5 - Student Support and Progression

5.1 Student Support

5.1.1 Average percentage of students benefited by scholarships and freeships provided by the institution, Government and non-government agencies (NGOs) during the last five years (other than the students receiving scholarships under the government schemes for reserved categories).

Response: 22.95

5.1.1.1 **Number of students benefited by scholarships and free ships provided by the institution, Government and non-government bodies, industries, individuals, philanthropists during the last five years (other than students receiving scholarships under the government schemes for reserved categories)**

2020-21	2019-20	2018-19	2017-18	2016-17
780	875	1754	1405	892

File Description	Document
Upload any additional information	View Document
Institutional data in prescribed format	View Document

5.1.2 Average percentage of students benefited by career counseling and guidance for competitive examinations as offered by the Institution during the last five years.

Response: 22.42

5.1.2.1 **Number of students benefitted by guidance for competitive examinations and career counselling offered by the institution year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
1632	876	1093	964	1009

File Description	Document
Institutional data in prescribed format	View Document

5.1.3 Following Capacity development and skills enhancement activities are organised for improving students capability 1. Soft skills 2. Language and communication skills 3. Life skills (Yoga, physical fitness, health and hygiene) 4. Awareness of trends in technology

Response: A. All of the above

File Description	Document
Institutional data in prescribed format	View Document

5.1.4 The institution adopts the following for redressal of student grievances including sexual harassment and ragging cases 1. Implementation of guidelines of statutory/regulatory bodies 2. Organisation wide awareness and undertakings on policies with zero tolerance 3. Mechanisms for submission of online/offline students' grievances 4. Timely redressal of the grievances through appropriate committees

Response: A. All of the above

5.2 Student Progression

5.2.1 Average percentage of students qualifying in state/national/ international level examinations during the last five years (eg: IIT-JAM/CLAT/ NET/SLET/GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/State government examinations, etc.)

Response: 88.37

5.2.1.1 **Number of students qualifying in state/ national/ international level examinations (eg: IIT/JAM/ NET/ SLET/ GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/ State government examinations, *etc.)*) year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
99	46	81	37	18

5.2.1.2 **Number of students appearing in state/ national/ international level examinations (eg: IIT/JAM/ NET / SLET/ GATE/ GMAT/CAT,GRE/ TOEFL/ Civil Services/ State government examinations) year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
104	52	96	42	21

File Description	Document
Institutional data in prescribed format	View Document

5.2.2 Average percentage of placement of outgoing students during the last five years

Response: 52.17

5.2.2.1 **Number of outgoing students placed year - wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
536	545	600	562	546

File Description	Document
Institutional data in prescribed format	View Document

5.2.3 Percentage of student progression to higher education (previous graduating batch).

Response: 6.73

5.2.3.1 **Number of outgoing student progressing to higher education.**

Response: 80

File Description	Document
Institutional data in prescribed format	View Document

5.3 Student Participation and Activities

5.3.1 Number of awards / medals won by students for outstanding performance in sports / cultural activities at inter-university / state / national / international events (award for a team event should be counted as one) during the last five years.

Response: 50

5.3.1.1 **Number of awards/medals won by students for outstanding performance in sports / cultural activities at inter-university / state / national / international events (award for a team event should be counted as one) year - wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
7	16	17	5	5

File Description	Document
Institutional data in prescribed format	View Document

5.3.2 Presence of Student Council and its activities for institutional development and student welfare.

Response:

The student bodies/committees provide a platform for the active participation of the students in the various academic & administrative bodies including other activities. This empowers the students in gaining leadership qualities, and related skills.

List of various student bodies/committees in BIT which helps carrying out different activities for Institutional development and student welfare (mentioned below). Such committees of students ensure participatory management of the institutional activities.

- **Hostel Mess Committee:** In each hostel, there is a Hostel mess committee which in addition to functioning of the mess also ensures the proper maintenance of the hostels. The committee consists of the following:

Position	No. of members
Mess Secretary	1
Maintenance Secretary	1
Network Secretary	1
Sports Secretary	1
Reading Room Secretary	1
Mess Members	4 - 5

- **Institute Clubs and Societies:** The Institute has around 28 clubs/societies for the development of students in the area of social, cultural and technical activities. All the clubs/societies have their own student-executive body and are mentored by a Faculty advisor.
- **BIT Welfare Society:** BIT Welfare Society is a registered society founded in the year 2017. The governing body of this society has 13 student members and the Dean Student Welfare/Dean of Student Affairs as patron. Among the 13 members, 5 are office bearers (president, vice-president, general secretary, joint secretary, treasurer) and the remaining are general members.
- **Mega Student Events:** Every year the Institute organizes mega-events such Annual Athletics meet, PANTHEON, VAJRA and BITOTSAV. For each of these events, a Student-Body is formed which is responsible for the smooth functioning & proper conduct of the events.
- **Anti Ragging Committee:** The Anti Ragging Committee has student representation (1 UG, 1 PG, 1 Ph.D. scholar).
- **Student's Grievance Redressal Committee:** This committee consists of one male student and one female student as representatives. The Committee has the responsibility to look after the grievances of students and to furnish suggestions on important issues pertaining to student's welfare.
- **Internal Complaint Committee**: The Internal Complaint Committee has provision to include student members in the cases which are associated with the students.

5.3.3 Average number of sports and cultural events / competitions organised by the institution per year

Response: 41.6

5.3.3.1 **Number of sports and cultural events / competitions organised by the institution year - wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
37	75	63	28	5

File Description	Document
Institutional data in prescribed format	View Document

5.4 Alumni Engagement

5.4.1 The Alumni Association / Chapters (registered and functional) contributes significantly to the development of the institution through financial and other support services.

Response:

Alumni are among our most potent assets and best brand ambassadors. Many of them have also served as great recruiters of graduating students and have helped in building useful links between academia and industry.

BITMAA (Birla Institute of Technology Mesra Alumni Association) is an Official Institute Alumni body (Link: https://alumni.bitmesra.ac.in/) and an umbrella organization that is formed to coordinate the activities of the various alumni chapters / associations spread across the globe. We have **40000+** registered alumni and **8 chapters** in the country and **2 overseas chapters**. Apart from above BITOSA Global is an Alumni Association run by the various chapters in India and abroad. The vision is to build a network that connects all BIT Alumni across the globe, to establish and sustain a bonding for learning, caring, and sharing as well as giving back to the Alma Mater.

The primary objectives are:

- **Support BIT** | Contribution for Global Opportunities, Scholarship, Alumni Directory etc.
- **Networking** | Alumni Talks, Knowledge Sharing, Get - Together
- **Mentoring** | Supporting Students/Juniors for Placement, Entrepreneurship and more.
- **Social Contribution** | With collaborative efforts, supporting society

To achieve its objectives, some of the events conducted by the association are-

BITOSA Innovation Conclave- The event provided an opportunity to "Inspire and get Inspired". Workshops on **"Transformation to a Secure and connected world - An IOT Perspective"** along with panel discussions with various eminent personalities were organised.

Link: https://www.bitosaglobal.org/eventsx/bitosa-innovation-conclave-2017-event

RISE SYMPOSIUM – It is an event where BIT Students, Faculty and Alumni, with entrepreneurial spirits, can showcase their Business Plans and have them judged by eminent Panellists.

YouTube link: https://www.youtube.com/watch?v=82KVsYjLIt0&t=5812s

https://www.youtube.com/watch?v=I0h4kHZYhzI

OPEN HOUSE WITH VICE CHANCELLOR BIT - The vice chancellor of BIT met with university and technology leaders along with BIT alumni. The meet up aimed at looking for help from alumni with some initiatives that will help students and improve BIT's position and rankings.

Link: https://www.bitosaglobal.org/eventsx/open-house-with-vice-chancellor-bit-mesra-event

GOOGLE HEADQUARTERS VISIT- Such visits ensure efficient networking and communication is maintained between alumni from all walks of life.

Link: https://www.bitosaglobal.org/eventsx/google-headquarters-visit-event

Apart from these, various BITOSA alumni meets are arranged that leads to knowledge sharing and building of an efficient networking circle. The Student Alumni and Relations Cell (SARC) of the college also organises various alumni meets where the alumni get an opportunity to interact and guide the students.

- Collaborating with reputed US universities for immersive summer research experience during the summer vacation for UG engineering students through our alumni associations in USA
- Providing exposure to faculty to world class teaching and research in US universities
- Mentoring of students by distinguished and notable alumni members in India and overseas
- Establishment of Centre for Water Research in collaboration with Virginia Tech University USA
- Facilitation by alumni members for placement and internship of students
- Entrepreneurship development and hand-holding by alumni members to nurture innovation and creativity in students by providing funding support to startup ideas
- Distinguished alumni are appointed as members of the Board of Governors
- Distinguished alumni members are awarded for their contributions during foundation day of the Institute

5.4.2 Alumni contribution during the last five years (INR in Lakhs)

Response: A. ? 100 Lakhs

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1 The institution has a clearly stated vision and mission which are reflected in its academic and administrative governance.

Response:

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1 The Institution has a clearly stated vision and mission which are reflected in its academic and administrative governance.

Response:

Institute Vision

“To become a Globally Recognised Academic Institution in consonance with the social, economic and ecological environment, striving continuously for excellence in education, research, and technological service to the National needs.”

- Each Department of the Institute has its own vision statement which is aligned with the Institute’s vision. To achieve these objectives, required action points are planned which percolate to the different academic and administrative sections of the Institute.
- The Institute as well as the Department mission are devised based on consideration of the above action points.
- “Institution Governance” describes all those structures, processes and activities which are considered in the planning and subsequent policies of the Institute. The Institute has multiple facets to its operations such as teaching, research, promotion of entrepreneurship, industrial interactions and Social activities.
- A strong governance framework ensures that the resources of the Institute are put to the best impact to achieve the vision.
- The governance process of BIT could be listed as below –
    - Developing strategic direction of the Institute with the participation of the various stakeholders of the Institute.
    - BIT has a robust governance process which includes the General Council (GC), Board of Governors (BoG), Finance Committee (FC), Academic Council (AC) and Building and Works Committee aligned to the UGC regulations as applicable from time to time. The different roles and responsibilities of these governing bodies are clearly stated in the Rules

and Regulations of the Institute.

- Department Academic Committee (DAC), Department Policy Committee (DPC), and Board of Studies (BoS) of every Department proposes to the Academic Council for any revision of curriculum, syllabus and Department level activities through respective Deans.

- The budgetary provisions, non-academic staff related policies, and operation procedures are directed through the Registrar via various sections headed by Finance Officers/ Deputy Registrars (DR) / Assistant Registrars (AR)/ Administrative Officer (AO).

- Academic programs which are offered at different levels have been designed to create valuable human resource, who will contribute in significant measures to nation building

- BIT strives to be known as a strong research institute and various measures have been adopted in this respect to achieve this objective

- Institute also emphasizes that learning is a lifelong process and it promotes a culture of learning amongst faculty for constant improvement and knowledge augmentation

- Institute always encourages teaching-learning and research in emerging areas to keep up pace with the latest advancements in the realm of education

- Other than teaching and research, Institute also encourages faculty and students to engage in extension activities which will address the needs of regional and national levels

- Success of these activities can be validated through illustrious list of alumni, engagement of faculty at national and international level, student achievements at academic and extracurricular spheres

Link : https://www.bitmesra.ac.in/Show_Content_Section?cid=1&pid=136

File Description	Document
Link for additional information	View Document

6.1.2 The effective leadership is reflected in various institutional practices such as decentralization and participative management.

Response:

The Institute practices and promotes the culture of participative Management at all its activities like Administration, Admission, Student activities, Curriculum Development, Research, Sports etc. The Institute has given equal representation in various committees at all levels from Professors, Associate Professor and Assistant Professors in all Departments. The leadership at the Institute is provided by the Vice Chancellor. The Vice Chancellor is assisted by Deans for various key activities, Heads of Departments/ In- Charges besides the Registrar who looks after the overall administrative and

academic activities of the Institute. The structure is like what is followed at some of the best institutions in the country and abroad.

- **The major academic activities are delegated through respective Deans, HoDs, Associate Deans, and faculty members grouped as a committee.**
- **The administrative responsibilities are delegated through the Registrar, Deputy Registrar(s), Assistant registrar(s), Administrative Officer, Section In-charges and staff members. Major academic and administrative decisions are taken through various committees.**
- **Each Head of the Department delegates academic responsibilities related to teaching-learning to UG, PG and Ph.D faculty coordinators. Individual faculty also have the freedom to achieve the course outcome in innovative ways at their own discretion. The HoD also constitutes faculty coordinator/ committees such as BoS, DAC, DPC, Budget committee, Purchase committee, ERP, etc. for smooth functioning of the Department with flexibility.**
- **BIT is a completely residential campus housing almost all of its staff members and all students. There are 14 hostels including 12 for boys students and 2 for girls students. All the hostel operations (maintenance, mess, recreational activities, etc.) are managed by the student bodies through the BIT Welfare society having the Dean of Student Affairs/ DSW as patron.**
- **In pursuit of the fulfilling of the statutory mandates as well as smooth functioning of the Institute several other committees such as Anti - Ragging Committee, Sports Committee, Convocation Committee, ICC are delegated with commensurate decision making powers.**
- **For student activities related to BITOTSAV, Pantheon, Vajra, clubs and societies, etc. student committees are constituted to provide an essence of leadership to the students mentored by faculty members.**

6.2 Strategy Development and Deployment

6.2.1 The institutional Strategic plan is effectively deployed.

Response:

The Institute has formulated a comprehensive and progressive plan for development of Infrastructure and Research and Development facilities. Under the strategic planning, the Institute has executed major Infrastructure developments like renovation of administrative blocks, renovation of guest houses, augmentation of power distribution system (APDS). The Institute has developed parks for its residents, sports facilities for students and staff like gymnasium with modern equipment, outdoor gyms in various locations on campus. Renovation of modern auditorium with more than 2500 seating capacity which is amongst one of the largest in Eastern India. Also, an auditorium having 400 (approx) seating capacity auditorium has been renovated and 120 capacity lecture halls have been renovated. Installation of a large number of CCTV on Campus has been done for safety and security purposes. Enhancement of room capacity of hostels has been done.

- **Electricity is the edifice of all infrastructure for the support of teaching and learning processes. Therefore, the Institute has upgraded the power distribution system to the state-of-the-art by adopting 33 kV Gas-insulated Switch (GIS) Gear based substation with 11 kV underground ring main unit (RMU). The low tension (LT) distribution system is also completely underground (except for street-lights, which is in progress). The supervisory control and data acquisition (SCADA) has been employed for the complete distribution system spread over the whole campus. The Institute has 100% power backup through diesel generated (DG) sets. The whole distribution system is in automated mode through SCADA.**

- **M/s MECON Ltd. Ranchi was the consultant for the APDS project worth INR 25 crores and the execution was by M/s Siemens.**

- **The 33 kV APDS is planned and successfully deployed in line with the vision to cater to the power demand of the Institute for the next 20 (twenty) years**

- **The Institute has 1 MWp solar rooftop power facility as a part of green power initiative contributing towards zero carbon emissions.**

6.2.2 The functioning of the institutional bodies is effective and efficient as visible from policies, administrative setup, appointment, service rules and procedures, etc.

Response:

The vision and mission of the Institute are driven by the aligned policies which drive the academic and administrative processes. The organisational setup of BIT Mesra is shown below:

1. **Chancellor**
2. **General Council**
3. **Board of Governors**
4. **Finance Committee**
5. **Academic Council**
6. **Building & Works Committee**

Other necessary committees as per the requirements are notified by the authorities.

The above authorities are responsible for the functioning and governance of the Institute.

- **Chancellor shall preside at the Convocation of the Institute for conferring Degrees**

- **The General Council reviews, from time to time, the broad policies and programmes of the Institute and suggests measures for the improvement and development of the Institute. It also considers and passes resolutions, if any, on the Annual Report and the Annual Accounts of the Institute and the Audit Reports on such accounts.**

- **The Board of Governors is responsible for the superintendence, direction and control of the Institute and to review the acts of the Academic Council. It also makes decisions on policies, regulations and courses of studies proposed by the relevant bodies. It manages and regulates the finances, accounts, investments, property and all other administrative affairs of the Institute and for that purpose delegates/appoints such committees/ agencies as it may deem fit. The BoG accords approval to create Departments, Schools, Centres and such other units for instructions, training, research and extension**

- **The Finance Committee examines and scrutinizes the Annual Budget of the Institute prepared by the Budget Committee and makes recommendations to the Board**

- **The Academic Council oversees the general regulations and is responsible for the assurance of academic standards**

- **The Building and Works Committee is the principal planning body of the Institute and is also responsible for the construction and maintenance of infrastructure.**

- **Appointment**
    - **Appointment of Vice Chancellor and Registrar is as per the UGC norms**
    - **Faculty and staff recruitment is through open advertisement in prominent platforms**

- **Service rules:**
    - **The Institute has well defined rules and regulations and also has the Conduct, Disciplinary and Appeal rule (CDA)**

Link to CDA Rules: shorturl.at/cfyFP

- **Promotion policies**
    - **Promotion of faculty is through Institute Career Advancement Scheme (CAS) Rules.**
    - **The Institute has the Modified Assured Career Progression (MACP) Scheme, through its Recruitment and Promotion Norms (BITRPN) for non-academic staff.**

The procedures followed for promotion, facility utilization, grievance redressal and other subjects

are on the Institute webpage.

6.2.3 Institution Implements e-governance covering following areas of operation

1. **Administration**
2. **Finance and Accounts**
3. **Student Admission and Support**
4. **Examination**

Response: A. All of the above

File Description	Document
Details of implementation of e-governance in areas of operation, Administration etc (Data Template)	View Document

6.3 Faculty Empowerment Strategies

6.3.1 The institution has a performance appraisal system, promotional avenues and effective welfare measures for teaching and non-teaching staff .

Response:

Institute has a well established performance appraisal system for faculty and non-teaching staff. Faculty members apply under performance based Career Advancement Scheme (CAS) for promotion to various levels. Non-teaching staff are promoted through Modified Assured Career Progression (MACP).

- **The Institute has a well-documented CAS policy which is modified from time to time to meet the statutory requirements as well as to give opportunity to the well performing faculty members to get promoted at higher level**
- **The policy is framed in such a way that it motivates the faculty members to improve their performance in teaching, research as well as services to the Institute**
- **The faculty members are provided with ample opportunity to improve their knowledge and skills by attending FDP, STTP etc. as well as by improving their qualification**
- **The faculty members also get ample opportunities at administrative positions for the holistic growth of their career**
- **The non-academic staff perform multiple roles across Departments, administrative and utility sections. The Institute has the Recruitment and Promotion Norms (BITRPN) and Modified Assured Career Progression (MACP) for non-academic staff, the main objective of which is to provide a career path to employees that will encourage consistent high performance and**

motivate employees to achieve excellence in their performance thereby attaining their career goals

- **Institute ensures welfare of its employees through the following: Salary advance, Mediclaim, Employees State Insurance Scheme, Group Saving Linked Insurance Scheme, Employee Group Insurance, Health Centre, Staff Quarters, Concessional education for wards, Banking, Post Office**

- **Faculty development programmes, seminars, symposium etc on regular basis are conducted in the Institute, EL for faculty working during vacations, Gratuity, Provident Fund, Transport Facility, Sabbatical leave/ study leave/ Extraordinary leave/ Maternity and Child adoption leave, Advances to employees as per requirement, Uniform for certain category of staff, Free Internet and Wi-fi facility on Campus, Earned Leave encashment for employees (max 300 days), Sports facility and staff club and Co-operative store and canteen facility**

- **Training programmes are organised for non-teaching staff in their relevant fields as per requirement**

6.3.2 Average percentage of teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the last five years.

Response: 42.68

6.3.2.1 **Number of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
24	130	165	180	90

File Description	Document
Details of teachers provided with financial support to attend conferences, workshops etc. during the last five years (Data Template)	View Document

6.3.3 Average number of professional development / administrative training Programmes organized by the institution for teaching and non-teaching staff during the last five years.

Response: 5.6

6.3.3.1 **Total number of professional development /administrative training Programmes organized by the institution for teaching and non teaching staff year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
10	3	4	3	8

File Description	Document
Details of professional development / administrative training Programmes organized by the University for teaching and non teaching staff (Data Template)	View Document

6.3.4 Average percentage of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the last five years (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course).

Response: 29.84

6.3.4.1 **Total number of teachers attending professional development Programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
81	50	28	151	104

File Description	Document
Details of teachers attending professional development Programmes during the last five years (Data Template)	View Document

6.4 Financial Management and Resource Mobilization

6.4.1 Institutional strategies for mobilisation of funds and the optimal utilisation of resources

Response:

Institute operates on student centric policies with focus on skill based quality education and research. Institute is self-sustained and has strong financial practices and internal controls in place to ensure optimum utilisation of financial resources. Institute has various sources of funds the main being student fee which is collected semester wise. The same is augmented by other sources of revenue like, earnings from consultancy projects, grants and other incomes.

- Budget preparation process takes into consideration the short term and long term goals set by the Institute. All Institute centres, departments and sections propose their annual financial plans based

on academic policy and planning to the Finance Committee of the Institute to achieve educational objectives.

- The Budget preparation of the Institute is made following a detailed process carried out by the individual departments/sections based on their targets. The budget of the Institute is finalised at the Institute level and thereafter placed before the Board of Governors for approval.
- Utilisation of the approved budget and its regular monitoring occurs at multiple levels (HoDs, Deans and officers) which helps to ensure that Institute funds are being spent according to plan
- The Finance committee is responsible for observance of regulations relating to maintenance of accounts of Income & Expenditures and consider any other matter referred by the Board of Governors.
- Investment income also forms a source of revenue to the Institute and is monitored closely with the help of a MIS. Earnings of the Institute from investment income are made keeping in view the return on the investment and the best financial practices.

6.4.2 Funds / Grants received from government bodies during the last five years for development and maintenance of infrastructure (not covered under Criteria III and V) (INR in Lakhs).

Response: 4083.11

6.4.2.1 ***Total Funds / Grants received from government bodies for development and maintenance of infrastructure (not covered under Criteria III and V) year wise during the last five years (INR in Lakhs).***

2020-21	2019-20	2018-19	2017-18	2016-17
914.43	505.42	1091.7	771.6	799.96

File Description	Document
Details of Funds / Grants received from government bodies during the last five years (Data Template)	View Document

6.4.3 Funds / Grants received from non-government bodies, individuals, philanthropists during the last five years (not covered in Criterion III and V) (INR in Lakhs)

Response: 0

6.4.3.1 Total Grants received from non-government bodies, individuals, Philanthropers year wise during the last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
0.0	0.0	0.0	0.0	0.0

File Description	Document
Institutional data in prescribed format	View Document

6.4.4 Institution conducts internal and external financial audits regularly

Response:

The Institute is subjected to three types of Auditing system – audit by Comptroller and Auditor General of India (CAG), Internal audit, and Statutory audit. The Institute has a practice of Internal Audit being done by reputed agencies on rotation basis. Last five years the Institute engaged three different agencies for internal audit namely M/s. A.K. Bagri & Associates, M/s. Price Water House Coopers, and M/s. S.S. Kothari & Mehta. The statutory audit is conducted by M/s. K.N.Gutgutia & Co.

Duties of Internal Auditors:

- To check all Journals
- Cash & Bank vouchers
- Bank reconciliation of all operative Banks, Store Ledger
- Physical verification of Cash
- They prepare reports /observations on:

1. Finance
2. Office of Registrar – such as checking Staff & faculties list – PAN No. & AADHAR Card
3. Purchase, and Store
4. Estate Administration
5. Planning & Development: Building construction
6. Transport Department, Consumption of Petrol & Diesel etc.

- To check fee receipt & refund of caution money for pass out students. Compliance of procedure adopted for refund

- To check advances against Salary paid to staff & faculties are as per Institute rule and are timely being deducted or not
- To check advances issued to parties for supply of goods and for job works and whether the goods has been supplied in time or job work completed
- There is a mechanism for review of audit observations every quarter by the management before which the concerned department/section is already made aware of the observations of the auditors and they are given sufficient time to reply to the same.
- Every quarterly review is followed by the action taken report (ATR) of previous period audit observations. Also, a review of the implementation status of audit suggestions is conducted quarterly.
- The audit observations are categorized into three levels (Level 1, Level 2 and Level 3) depending upon their objective, value and severity.
- Audit observations made in the reports are given due diligence and dealt with within the stipulated time.
- The audit objections which are met with requisite action on the part of the Institute are reviewed by the auditors and if found satisfactory and sufficient are considered as settled.

6.5 Internal Quality Assurance System

6.5.1 Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes by constantly reviewing the teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals.

Response:

As per the mandate of NAAC and the significance of high standards in Higher Education and Research, the Institute established a well-structured Internal Quality Assurance Cell (IQAC) to:

- maintain the standards in Higher Education, the cell continuously monitors and provides inputs on Academic and Research activities
- recommend the changes and revisions in the Rules and Regulation of the Institute in consonance with guidelines issued by statutory bodies. IQAC holds meetings of the members from time to time to ensure the high-quality teaching and research environment in the Institute.

One of the two best practices of IQAC is the Adoption of Feedback, Analysis and its Solution.

- The quality improvement in teaching is ensured through the course feedback mechanism integrated

to our Student Module of ERP System. Systematic feedback from all the stakeholders is also obtained from time to time.

- After collection of the feedback periodic meetings of HoDs with faculty members at department level and organizing the need-based programs to improve the feedback suggestions are undertaken.
- Pedagogy and training programs on outcome-based education are some of the need and analyses-based programs which are conducted by IQAC for the faculty members.

The second best practice of IQAC is the thrust in the accreditation process where the lecture planning and course outcomes are regularly monitored, mapped, and attainment levels in each semester are achieved.

- Constant efforts are being made by IQAC for NBA accreditation of all the courses offered by the Institute wherein IQAC reviews the documents, procedure and implementation for each of the courses in various programs.
- IQAC members meet and discuss the NBA accreditation requirements and visit the departments for a pre-accreditation verification and its subsequent support.
- The visit to the department is also made after the receipt of the NBA report to discuss the actionable points.
- The target of IQAC is to have 100% NBA Accreditation of UG and PG Programs offered at different departments.

The efforts of IQAC has enabled the participation of the Institute in NIRF under various disciplines since the inception of its ranking system.

6.5.2 Institution has adopted the following for Quality assurance 1. Academic Administrative Audit (AAA) and follow up action taken 2.Confernces, Seminars, Workshops on quality conducted 3. Collaborative quality initiatives with other institution(s) 4.Orientation programme on quality issues for teachers and students 5. Participation in NIRF 6.Any other quality audit recognized by state, national or international agencies (ISO Certification, NBA).

Response: A. Any 5 or more of the above

File Description	Document
Upload details of Quality assurance initiatives of the institution (Data Template)	View Document

6.5.3 Incremental improvements made for the preceding five years with regard to quality (in case of first cycle), Post accreditation quality initiatives (second and subsequent cycles).

Response:

BIT has taken necessary initiatives for improvement of quality in academic and research activities. Some improvement initiatives are summarized below:

- UG/PG Course curriculum revision - UG/PG course curriculum are revised on regular intervals to keep the curriculum catering the need of global demand - industry, higher education and research. In the last five years, several programmes have been revised in accordance with the vision and mission statements.

- Ph.D. ordinance - Ph.D. ordinance were implemented to enhance the standard and quality of the research as a post accreditation step.

- Examination Reforms - Adopted the Bloom's Taxonomy based assessment tools, Course outcome based question paper preparation, ICT based examination activities through ERP, promoting equal opportunity schemes such as "Scribe facilities for persons with benchmark disabilities", medically assisted rooms etc.

- CAS rules for faculty promotion - For regular promotion of the faculty members and to maintain the quality in teaching and research, the CAS rules are revised in regular intervals.

- Modified Assured Career Progression (MACP) - For regular promotion of the staff members to maintain the quality of work culture MACP is implemented.

- Feedback mechanism - Regular feedback mechanisms are rigorously pursued by IQAC to collect the course feedback from students, and teachers. Separate feedback for the program inputs are obtained from alumni, employers and guardians.

- Participation in NIRF - IQAC ensures the participation of the Institute in NIRF. Institute has participated in all NIRF rankings so far in various disciplines and has secured reputed ranks. Every year NIRF ranking of the Institute is assessed by IQAC and presentations are made to all faculty members of the Institute which also paves a path for future improvement.

- Short Term Training Programs for Teachers - The Institute encourages organising and participation in pedagogy training on outcome-based education, use of ICT in education, teachers' training, refresher courses, FDPs, QIPs etc. More than two trainings per year are attempted spread over the semesters.

- Skill development training for Staff members - The Institute organises skill development training for Administrative, non-teaching, clerical and technical staff members.

- Seed Money Scheme - To initiate the research, the Institute provides seed money grants to the eligible faculty members. Seed money grants in the range of Rs. 80,000 to 2.0 Lakhs were provided to more than 60 faculty members during the last five years.

- Research Promotion Grant (RPG) Scheme - To encourage research, institute has introduced an RPG scheme. In this scheme the 30% share of the overhead charges of research projects are credited to the account of investigators which can be used by the investigators for academic and

research activities.

- Immersive Summer Research Experience for BIT Students (ISRE-BIT) at U.S. Universities - Institute has an Immersive Summer Research Programme for meritorious UG students with Illinois Institute of Technology (IIT), Chicago and Carnegie Mellon University (CMU), Pittsburgh for 8-week duration.

NAAC

Criterion 7 - Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

7.1.1 Measures initiated by the Institution for the promotion of gender equity during the last five years.

Response:

Institute strongly promotes gender equity and implements measures that are necessary to ensure this aspect. Institutes' policy and guidelines for admission, recruitment, academic and administrative functioning ensures that there is no discrimination of any kind. The Institute is committed to provide a safe and conducive work and academic environment to students and its employees and has a zero tolerance policy towards any transgression matters pertaining to any kind of harassment and gender sensitivity.

- Institution has adopted co-education in all the programs in true spirit for several decades. Presently, there are around 30% girl students in various programs which is more than the statutory mandate.
- There are more than 20% women faculty and staff.
- Presently, six out of seventeen academic departments are headed by female faculty members.
- Out of eight deans, three positions of deans are being held by female faculty members.
- Institute has functional Internal Complaints Committee (ICC)
- Lady Doctors, and counsellors are available in the Institute dispensary to facilitate the female students, staff and faculty.
- Awareness programmes and interactive sessions have been conducted in the Institute from time to time on gender equity.
- The student bodies, especially NSS, consistently strives to address women's concerns through various platforms.
- The Institute has a common faculty lounge with restroom, TV and dining space.
- In all the events and functions, the Institute ensures equal participation of girl students.
- Institute has fully functional ladies club with modern multigym and outdoor sporting arena
- Girls’ hostels also have a modern multigym in addition to indoor and outdoor sporting facilities
- There is active presence of women staff/faculty members and girl students in the various committees
- Institute has female security guards

- Institute is covered by CCTV surveillance at strategic locations to ensure safety and security of women

7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures

1. **Solar energy**
2. **Biogas plant**
3. **Wheeling to the Grid**
4. **Sensor-based energy conservation**
5. **Use of LED bulbs/ power efficient equipment**

Response: A. 4 or All of the above

7.1.3 Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste (within 500 words)

- **Solid waste management**
- **Liquid waste management**
- **Biomedical waste management**
- **E-waste management**
- **Waste recycling system**
- **Hazardous chemicals and radioactive waste management**

Response:

Waste management includes the activities and actions required to manage waste from its source to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process.

The Institute disposes its waste in appropriate manner as follows:

1. Solid Waste Management:

- Solid waste is divided into two parts biodegradable and non-biodegradable
- Separate dustbins are placed at all the waste disposal points including hostels and quarters
- Waste is picked in a segregated manner from various collection points, dustbins and households and then stored at one place from where Ranchi Municipal Corporation vehicles pick it up everyday.
- Institute has recently procured and installed a composter machine which is used to treat biodegradable waste.

2. Liquid Waste Management:

- Wastewater is treated through septic tank system in the campus. It is one of the most common type of decentralized sewage treatment system which consists of a septic tank and soak pit.
- The septic tanks are periodically maintained by removing sludge that is getting deposited at the bottom of the tank.

3. Biomedical Waste Management:

- Biomedical waste is generated in the Institute dispensary, Pharmacy Department, Bioengineering and biotechnology department and empty chemical bottles from Chemistry and Chemical Engineering Departments.
- All these departments put the waste in colour coded small dustbins thereafter it is placed in large colour coded dustbins at specifically prepared Biomedical waste collection points.
- Institute has a tie up with M/s Bio Genetic Laboratories Pvt Ltd for pick up and disposal of waste at their processing point. This agency is authorised by Jharkhand Pollution Control Board for disposal of this kind of waste
- Sanitary napkin vending machines and incinerators for its disposal are also placed in the girls hostel as well as in the Institute building.

4. E-Waste Management:

- Once the institute upgrades to a higher version then the older one is given to nearby schools for learning of students
- Unusable e-waste is initially stored at one point in shade or store room and thereafter it is disposed of with a vendor who is authorised to collect e-waste through the institute’s Scrap Disposal Committee.

5. Hazardous Chemicals and Radioactive Waste Management:

- Institute does not produce any radioactive waste.
- The process of neutralisation of chemicals is carried out before its disposal so that it does not harm our environment
- It is also ensured that less waste is generated. Used glassware is picked up by the vendor collecting biomedical waste.

7.1.4 Water conservation facilities available in the Institution:

1. **Rain water harvesting**
2. **Borewell /Open well recharge**
3. **Construction of tanks and bunds**
4. **Waste water recycling**
5. **Maintenance of water bodies and distribution system in the campus**

Response: A. Any 4 or all of the above

7.1.5 Green campus initiatives include:

1. **Restricted entry of automobiles**
2. **Use of Bicycles/ Battery powered vehicles**
3. **Pedestrian Friendly pathways**
4. **Ban on use of Plastic**
5. **landscaping with trees and plants**

Response: A. Any 4 or All of the above

7.1.6 Quality audits on environment and energy are regularly undertaken by the Institution and any awards received for such green campus initiatives:

1. **Green audit**
2. **Energy audit**
3. **Environment audit**
4. **Clean and green campus recognitions / awards**
5. **Beyond the campus environmental promotion activities**

Response: A. Any 4 or all of the above

7.1.7 The Institution has disabled-friendly, barrier free environment

1. **Built environment with ramps/lifts for easy access to classrooms.**
2. **Divyangjan friendly washrooms**
3. **Signage including tactile path, lights, display boards and signposts**
4. **Assistive technology and facilities for Divyangjan accessible website, screen-reading software, mechanized equipment**
5. **Provision for enquiry and information : Human assistance, reader, scribe, soft copies of reading material, screen reading**

Response: A. Any 4 or all of the above

7.1.8 Describe the Institutional efforts/initiatives in providing an inclusive environment i.e., tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic and other diversities (within 500 words).

Response:

The institute is committed to provide a safe and conducive work and academic environment to students and its employees. Institute is extremely inclined to promote tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic and other diversities

- The process of national level admission in the Institute attracts students from all over India and abroad (NRIs) with diversity in students' profile.
- Reservation of seats for OBC / SC / ST / EWS and PWD are strictly adhered to as per the statutory reservation policy of State of Jharkhand and Government of India.
- The interests of students, faculty members and staff are safeguarded without any caste, creed or gender discrimination.
- Institute officially declares holidays for various national festivals of different religious faiths. In addition to this there are official holidays to honour the local festivals. Institute also celebrates several of these festivals.
- There is an active Internal complaint Committee (ICC) which ensures zero tolerance related to gender issues.
- To promote harmony amongst the different communities within the campus there are different platforms for sharing diversity such as staff club, ladies club, students clubs/societies etc. in the Institute level which are organised at regular intervals.
- Institute has number of hostels and each one of them individually organizes hostel night and similar activities
- Institute follows dual language official communication to accommodate the needs of different groups and as per the mandate.
- The department of Management has a student group called 'Team Sustainability', which undertakes various activities related to sustainability and social well-being. Their recent initiative is collaborating with an acclaimed social entrepreneur of the state in implementation of a UNESCO-MGIEP's DICE Program.
- The institute organises workshops, seminars and rallies to promote awareness regarding gender issues, ethics, workplace justice etc.
- The institute organises workshops, seminars and rallies to promote awareness regarding gender issues, ethics and workplace justice.
- Students with such wide diversities participate in various committees and student bodies such as sports/hostel/purchase/cultural committees etc.
- Students representatives are part of the grievance redressal committee which not only looks after the complaints and grievances in the Institute but are also authorised to initiate necessary remedial measures.

- Students are also involved in anti-ragging and SC/ST cell
- Every year, Institute organizes several mega-events such as BITOTSAV, PANTHEON, VAJRA, DEEPOTSAV, Annual Athletic Meet etc., which are exclusively organised and administered to provide an inclusive environment.
- The Institute, with great zeal, celebrates festivals, the birth and death anniversaries of great Indian personalities.

Annexure

1. Unity Day - https://bitmesra.ac.in/naps/nss-2/
2. Youth Day - https://bitmesra.ac.in/naps/youthday17/
3. Education Day - https://bitmesra.ac.in/naps/ned/
4. Teachers' Day - https://www.bitmesra.ac.in/Display_Gallery_Images?cid=10&aid=47
5. Gandhi Jayanti – News clipping service by Central Library BIT Mesra News: Hindustan Hindi (Ranchi Live), Thursday, 03 rd October 2019, Page no.03.
6. Independence Day - https://bitmesra.ac.in/naps/independence19/
7. Republic Day - https://bitmesra.ac.in/naps/republic-day-2019/

7.1.9 Sensitization of students and employees of the Institution to the constitutional obligations: values, rights, duties and responsibilities of citizens (within 500 words).

Response:

Understanding the fact well enough that India is a huge nation with diversities in caste, creed, religion, races, it is the first and foremost aim and vision of BIT to contribute to the country that forever stands out.

- Institute understands that being an academic hub of national significance, it has a massive responsibility. From inculcating a deep sense of patriotism and pre-eminence of civic and social duty amongst an individual, BIT takes steps prudently to sensitize the students with these topics.
- The institute accomplishes this by organizing various socio-cultural events that create sensitive individuals. Throughout the year, numerous events are organized by the clubs of the Institute. Some of the example events are mentioned below:
- International youth day

- National blood donation day
- National Unity Day
- Constitution Day
- The important days are celebrated with the motive of fostering the spirit of oneness and unity amongst the students who are still in the learning and developing phase

Institute encourages its employees to actively participate in various socio-cultural events of national importance such as

- Anti-terrorism day pledge was taken by the employees of the Insitute
- Employees pledged on anti-tobacco day
- Institute has established the Rajbhasha Prakoshth
- Institute has established the Human Value Cell

7.1.10 The Institution has a prescribed code of conduct for students, teachers, administrators and other staff and conducts periodic programmes in this regard.

1. **The Code of Conduct is displayed on the website**
2. **There is a committee to monitor adherence to the Code of Conduct**
3. **Institution organizes professional ethics programmes for students, teachers, administrators and other staff**
4. **Annual awareness programmes on Code of Conduct are organized**

Response: A. All of the above

7.1.11 Institution celebrates / organizes national and international commemorative days, events and festivals (within 500 words).

Response:

The Institute creates a sense of social responsibility by celebrating national and international important days, events and festivals. Important days are celebrated to foster the spirit of oneness and unity amongst the students, staff and faculty. The Institute encourages everyone to participate in various socio-cultural events of national and international significance actively. Many events are celebrated in the Institute some of the following are mentioned below:

National and international commemorative days

- Independence day

- Republic day
- Women’s day
- World music day
- World environment day

Events

- Teacher’s day
- Engineer’s day
- Yoga day
- Tribute to our National Heroes

Festivals

- Makar sankranti
- Durga puja
- Saraswati puja
- Vishwakarma puja
- Karma puja
- Eid
- Diwali
- Holi

Other than these some recent significant events organised are:

- The event “Tainaat” was organized by the Literary Society, BIT Mesra on 15th August. A reputed army official and BIT alumni Major Eliza Rungta was the speaker and she gave insights on various aspects of military lives and about her life journey.
- The online tribute event “Unsung Heroes” was organized by Leo Club, BIT Mesra between 9th August, 2020 - 15th August, 2020. The event was a tribute to the citizens of India whose valor and honor go unnoticed to the country’s masses - a tribute to the people whose work towards our nation

has been an absolute inspiration.

- The event “Hastkala Ae Shastri” was organized by Leo Club, BIT Mesra between 25th September 2020 - 2nd October 2020. This event was a special tribute to our former Prime Minister, Lal Bahadur Shastri. Participants shared their art, poetry, articles, and quotes dedicated to Shastri’s life's work.

- Dhwani- Music Club, BIT Mesra released a video compilation of performances by female vocalists from Unplugged'19 in order to commemorate Women's Day on 8th March, 2020.

- The club celebrated World Music Day on 21st June, 2021 in a pompous manner, amidst adverse circumstances. The members of the club composed and produced their own original song, "Jee Lein Zindagi", a 6 minute and 23-second song. The inspiration behind the composition was to pay a tribute to the corona warriors.

- "Pravad" a debate competition was organized by NSS, BIT Mesra on the 14th of August 2021, to celebrate India's 75th Independence Day and also to acknowledge the long struggle and sacrifice that preceded the freedom we enjoy.

- NSS BIT Mesra organised a visual arts competition called “Patriart” on 3rd April. This event was held celebrating 75 glorious years of independence.

- A case study competition “Parivartan” on the occasion of Gandhi Jayanti was organized.

7.2 Best Practices

7.2.1 Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual.

Response:

7.2.1

Best Practice #1

Title of the Practice

Immersive Summer Research Experience (ISRE)

Objective of the practice

The objective of the "Immersive Summer Research Experience" for the undergraduate students of engineering is to expose them to world class research in American institutes of repute. Apart from inculcating a research bent of mind in the students, this practice also aids in enhancing the employability of the students by making them aware of the contemporary practices in their subject domain on an

international level. The cross cultural interactions with international students imbibe a mindset with a global outlook and are conducive to overall development of personality.

The Context

Identifying and having access to reputed engineering institutes in the United States was a major challenge to start this practice. The finances required to fund such a program is also quite substantial and was another barrier to be overcome.

We have a very strong base of Alumni spread across the world and our Alumni Association in North America has come forward to extend their unflinching support to make this program a grand success. Not only they helped us identify and access reputed institutes but also came forward to offer the required financial support. The first batch was sent in the summers of 2017 and thereafter the students are sent every year during the summer. Till date a total of 40 students have already been sent under the ISRE program

The Practice

Presently the institutes to which the students are being sent are:

- Illinois Institute of Technology, Chicago
- Carnegie Mellon University, Pittsburgh
- Georgia Institute of Technology, Atlanta

In the summer of 2019, nine students were sent to Illinois Tech, five students to Carnegie Mellon and three students to Georgia Tech.

In the summer vacation just after the 6th semester (3rd year), the selected students are sent for the program. Based upon the academic records of the students, selection is carried out.

The funding per student is shared on a 1/3rd basis by our Alumni Association in the US, BIT Mesra and the students themselves. The duration is approximately 45 days.

The host institution assigns projects and project guides to the students individually or in a small group to carry out research related activities. After completion of their project, the students are required to make a presentation to the satisfaction of the host institute.

Evidence of Success

The program has been immensely successful. The value addition in the thoughts and concepts of the student is remarkable. There is substantial interest in research related activities of the students. The employability of the students has increased considerably and a number of students are desirous of higher

studies abroad.

Problems Encountered and Resources Required

Although the problems encountered to start the project initially have been overcome, more universities of repute need to be identified and arrangements initiated to implement the program. Also, substantial funds are required to be generated for funding. Actions have already been initiated in this regard.

Best Practice #2

Title of the Practice

Financial Support to students (UG/PG), scholars and faculty members for research, publication and conference

Objectives of the practice

- to promote innovative thinking and give the students hands-on experience on research and real world problems
- to encourage students with an emphasis on projects that are industry relevant and have potential to lead to an entrepreneurship venture or a start-up model
- to inculcate qualities such as financial management, teamwork, problem analysis, investigation, design and use of modern and scientific tools, communication skills, ethics, time management, data processing and analysis
- to encourage self financed scholars with superior performance to complete their Phd within stipulated time period
- to promote research publication, and presentation of papers in international conferences by faculty members.

The Context

The major challenge is that limited funding opportunities exist for carrying out innovative UG and PG projects which have potential for transforming ideas into marketable solutions. Due to this, the outcomes are not tangible within the project duration (one-two semesters), and students often do not get opportunities to embark on those research ideas. Keeping in view that these projects have the potential to pave the way for long term benefits for the society, the Institute has implemented the funding policy for UG and PG Projects.

Limited level of funding is arranged for self-financed Ph.D scholars to complete their doctoral work with

partial funding from BIT. Faculty members are encouraged to attend international conferences and present research papers.

The Practice

The uniqueness of this practice in the context of higher education is that it addresses affective and psychomotor domain attributes of students.

The prevalent emphasis is on cognitive domain due to lack of financial support of the hardware implementation of student projects. For setting a trend, the Institute is supporting at least a few selected projects based on its merit as judged by the committee constituted for the purpose.

The applications are invited by the HoD from UG/PG students during their 7th and 3rd semester, respectively in the prescribed format. The evaluation committee which includes Industrial experts in conjunction with faculty members evaluate the merit of the proposal. The evaluation criteria are mostly relevant to Industrial needs and potential for technology transfer. Salient practices of funding UG and PG projects are mentioned below:

- Maximum fund allocated to each project is Rs. 50,000/- for UG and Rs.100,000/- for PG students. The fund is intended for expenditure, which includes raw materials for product fabrication, product testing, etc.

- Students and their guides should maintain a book of accounts of all the expenditure incurred under the project and must submit a statement duly signed by them and approved by the Chairman of DEC along with each report.

- Proper accounting for expenditure from the project heads are to be maintained by the departments as per the standard practice.

Funding to research scholars is based on qualifying competitive entrance examination and subsequent interview. Seed money funding is provided to newly joined faculty members to initiate their research activities and give directions to their future act of research. All the faculty members are encouraged to interact with the outside world through attending conferences, workshops and seminars wherein they are supported by the Institute, covering the expenses incurred on travel, registration and stay.

Evidence of Success

Students are encouraged to present their ideas and preliminary findings in conferences organized by reputed Institutes. This provides a platform for students to establish networks with the research community and Industries. Few publications in reputed journals and the preliminary results emanating out of these

projects form the basis of sanction of funded grants to the faculties.

As a visible outcome, students have participated in activities with full vigour in application of gained knowledge at multiple avenues such as building a hybrid electric vehicle, racing cars, etc. The teams involved in such activities are Team Srijan, Team Aveon and Team Firebolt, IET, etc. (https://www.bitmesra.ac.in/Visit_Other_Department_9910?cid=1&deptid=191&pid=187).

The follow up of this activity is to support students and research scholars to encourage and participate in different scientific forums. In pursuit of the above goal, the Institute is facilitating from earmarked funds to support students attending workshops to further the knowledge gained from the results of the funded research work.

Seed funded faculty members are encouraged to propose for funded research from various research granting agencies (Govt./Non-Govt.). The process of seed funding has resulted to an increase in project proposals from the Institute. The research scholar funding, supporting faculty members through attending conferences has improved the research output in terms of quality and citations.

Problems Encountered and Resources Required

Financial support under this scheme is limited with the Institute and there are many projects from the students which could not be accomodated. Even after seed funding these projects the students who received the funding expressed the need for additional funds to enhance the outcomes of the project.

7.3 Institutional Distinctiveness

7.3.1 Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words

Response:

Institutional Distinctiveness

The principal focus of an academic institution is either to disseminate knowledge by teaching or create new expertise by research. A Technological University like BIT Mesra aims to offer the most modern and effective engineering education conducive for developing innovative technology and produce the most competent and meritorious engineering graduates. As an enterprise is known by the quality of its products, BIT Mesra has earned its reputation and eminence by virtue of the quality of engineering education imparted, level of research and innovation contributed, and most importantly, eminence of engineering graduates or alumni produced over the years. Thus, the most distinctive contribution of BIT Mesra that may singularly highlight the significance and impact of its contribution to the society should undoubtedly

concern the engineering education imparted and the number, quality and reputation of its alumni produced over the last six decades of its existence, who are now spread all over the globe.

Distinctive Academic Contributions:

Academic initiatives of BIT Mesra that deserve special mention are:

- BIT Mesra carries a distinction of being one of the foremost Institutes of Technology in the country (ahead of all but only one IIT).
- BIT Mesra initiated a programme on Space Engineering and Rocketry ahead of country's flagship organization called ISRO, way back in 1964.
- BIT Mesra promoted the culture of all round engineering education at various levels starting from certificate course, diploma, graduation, post graduation all the way up to doctoral degrees.
- BIT Mesra has always upgraded its academic curriculum and teaching-learning exercise as per the prevailing norms, government directives and international standards. As a result, the graduates of this institution have always been the most sought-after engineers valued by the industries in the country.
- Besides advanced technological subject domains, BIT Mesra also imparted education for socio-economic development of the rural and tribal population in the states of Bihar and Jharkhand.
- BIT Mesra is a rare university that houses a University Polytechnic besides various engineering departments and centres.
- BIT Mesra was a pioneer in establishing the first-ever Science and Technological Entrepreneurship Park (STEP) in the country as a part of the Small Industries Research and Development Organization (SIRDO) way back in 1974.
- In recognition of its overall contribution, BIT Mesra was the first institution in India to be granted autonomous status in 1972.
- It is worth mentioning that all the laboratories, workshops, research facilities and design centres of BIT Mesra are equipped with the most modern and sophisticated machines, instruments and facilities like electron microscope, diffraction and spectroscopy units, CNC lathe, precision mechanical processing instruments, modern VLSI laboratory, advanced communication and signal processing facility, wind tunnel, animal house and tissue engineering laboratory, drug design and testing laboratory, high performance computing (HPC) facility and design and innovation workshops.

Illustrious Alumni of BIT Mesra:

Alumni of the Institute in terms of their national and global level credentials present the most convincing evidences of the quality of human resources developed, as envisaged in the Vision and Mission Statement of the Institute. Thus, the performance of the Institute in terms of distinctive area claimed is most aptly

indicated by the following list of selected illustrious alumni of BIT Mesra:

- Mr. Rohit Prasad [BE(ECE), 1993-97 Batch], the man behind Alexa, one of the most sought-after inventions of Amazon, is currently the Senior Vice President and Head Scientist for Alexa at Amazon. (degree, dept, year)

- Mr. Sanjay Nayak [BE(ECE), 1981-85 Batch], the CEO & MD of Tejas Network is considered a leader in the world in network switches.

- Mr. Amit Chaudhary [BE(IT), 2005-09 Batch], is the Co-Founder of Lenskart, a global business house in optical lenses.

- Dr. Ganesh Natarajan [BSc(Mechanical), 1973-78 Batch], the Founder of 5F World, a platform dedicated to investment and mentoring of start-ups, skills platforms and social enterprises, is the Chairman of Honeywell Automation India Ltd, Skills Alpha, Pune City Connect and the Lighthouse Communities Foundation. Dr. Natarajan is the co-Founder of Global Talent Track, Kalzoom Advisors and Center for AI and Advanced Analytics.

- Dr. Arshinder Singh Chawla [BE(CSE), 1984-88 Batch], IPS, the recipient of the President Police Award Winner, is the Additional Director General of Police with Haryana Cadre

- Ms. Nancy Sahay [BE(ECE), 2007-11 Batch], currently the CEO Jharkhand State Livelihood Promotion Society is an IAS of 2013 Batch.

- Mr. Naman Priyesh Lakra [BE(ECE), 2006-10 Batch], is presently the Tribal Welfare Commissioner and Managing Director of State Tribal Cooperative Development Corporation of Jharkhand.

- Professor Dr. Shree K Nayar [BSc(Electrical), 1980-84 Batch], is currently the T. C. Chang Professor at Columbia University and is considered a global leader in the field of computer vision, graphics and image processing.

- Professor Sunil Sinha [BE(Civil), 1982-86 Batch], is the Professor & Director, Sustainable Water Infrastructure Management (SWIM) Center at Virginia Tech.

- Shri E.V.S. Namboodiry [ME(SER), 1967-68 Batch], served as a former Deputy Director LPSC (ISRO)

- Shri A. K. Charkrabarty [ME(SER), 1972-74 Batch], as the former Director DRDL (DRDO)

- Padmshree M.C. Dathan [ME(SER), 1984-86 Batch], served as former Director SDSC(ISRO) and Director VSSC(ISRO)

- Gopalan Jagadeesh [ME(Mech), 1990-92 Batch], currently Professor Aerospace Engineering, IISc Bengaluru

- Prof. K.P.J. Reddy [PhD(Phy), 1975-80 Batch], retired faculty, IISc Bengaluru

In a nutshell, the distinctive performance of BIT Mesra as a measure of its outcome is most convincingly exemplified by the above cited academic contributions, pioneering efforts in research, and above all, a selected list of most illustrious alumni who are domain leaders and pioneers by their own right.

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5. CONCLUSION

Additional Information :

The institute has been the life of the erstwhile Bihar state not only for human resource development, but also for facilitating infrastructure development in the domain of civil engineering, electricity and communication etc. and thus the Bihar Government had been contributing a share of 50% DA for the employees for the institute till 2000 and the same support is being continued after carving out of Jharkhand state.

The All-India nature of the Institute has been preserved by ensuring admissions of students from all over the country without any prejudice so as to honour the national policies towards pluralities as well as diversities.

Concluding Remarks :

BIT Mesra, founded in 1955 as one of the foremost engineering institutions in India since independence has served the country and profession with distinction by providing quality engineering education, professional service to industry, contributing to research in selected domains and producing illustrious alumni who are now peers and leaders in their domains all over the world. Located in the State of Jharkhand, the mineral capital of India and earlier in Bihar, BIT Mesra bears the credit of making several pioneering contributions like setting up the first ever Department of Space Engineering & Rocketry (ahead of ISRO) in 1964, the first Science & Technology Entrepreneurship Park (STEP) in India to promote engineering entrepreneurship, the first Institution in Bihar to be granted autonomous status in 1970 and made a Deemed University in 1986, and above all, the only Technological University in eastern India equipped to offer training and qualification from certificate and diploma (through University Polytechnic) to bachelor, master and doctoral degrees in science, management and engineering in about 20 disciplines. Quality of students is ensured by maintaining admission strictly through All-India entrance examinations (JEE, GATE, NEET, etc.). The University promotes research by generous in house funding for equipment, testing, fabrication and characterization facilities, setting up high performance computing and CAD laboratory, and providing stipend to scholars and students. The fully residential and self-governed campus with about 10000 inhabitants (students, scholars, faculty and staff members), set up in about 780 acres of land with umpteen greenery at the serene confluence of Subernarekha and Jumar rivers in the outskirt of Ranchi at Mesra, the University houses the most modern lecture halls with digital (audio-visual) connectivity, laboratory and workshops with state-of-the-art devices, equipment and machines, outdoor stadium and indoor courts for physical training and games and sports for the students, and all civic amenities (health center, shopping centers, water and electricity supply, security, maintenance, transport) expected in a mini township. All our degree programs are AICTE approved and courses are mostly NBA accredited. National and international conferences are held in the Institute routinely. The faculty members and scholars are encouraged and funded to attend similar events in India and abroad. The number of quality publications from BIT Mesra featuring in top journals are on the rise [WoS database: h-index=75, Citations in 2020= 7003, Total Citations= 42703] . Several crores worth of sponsored projects and consultancy are conducted annually. Our illustrious alumni make us proud by reaching the top positions in industry (Amazon,

NBC, Tejas Network, 5F World, Lenskart) and academia (Columbia, Georgia Tech, Virginia Tech, Carnegie Mellon, IISc, IITs). No wonder that INDIA TODAY crowned BIT Mesra as the 2nd topper among the private engineering institutions in the country in two successive years, NIRF ranked us within top 40 institutions since inception, we received NSS awards thrice in recent years, and above all, BIT Mesra has been the prime destination for engineering education in the eastern India since inception.

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