Yearly Status Report - 2019-2020

Part A	
Data of the Institution	
1. Name of the Institution	**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE**
Name of the head of the Institution	**SOUVIK BHATTACHARYYA**
Designation	**Vice Chancellor**
Does the Institution function from own campus	**Yes**
Phone no/Alternate Phone no.	**911596515247**
Mobile no.	**9836833100**
Registered Email	**iqac_bits@pilani.bits-pilani.ac.in**
Alternate Email	**dasgupta@pilani.bits-pilani.ac.in**
Address	**Vidya Vihar Jhunjhunu Dist**
City/Town	**Pilani**
State/UT	**Rajasthan**
Pincode	**333031**

2. Institutional Status

University	**Deemed**
Type of Institution	**Co-education**
Location	**Rural**
Financial Status	**private**
Name of the IQAC co-ordinator/Director	**MANI SANKAR DASGUPTA**
Phone no/Alternate Phone no.	**01596255223**
Mobile no.	**9829227459**
Registered Email	**iqac_bits@pilani.bits-pilani.ac.in**
Alternate Email	**dasgupta@pilani.bits-pilani.ac.in**

3. Website Address

Web-link of the AQAR: (Previous Academic Year)	http://www.bits-pilani.ac.in/AwardsandAccreditations

4. Whether Academic Calendar prepared during the year

4. Whether Academic Calendar prepared during the year	**Yes**
if yes,whether it is uploaded in the institutional website: Weblink :	https://www.bits-pilani.ac.in/uploads/Goa_Upload/AcademicCalendar2019-20_Goa.pdf

5. Accrediation Details

Cycle	Grade	CGPA	Year of Accrediation	Validity	
				Period From	Period To
2	**A**	**3.71**	**2009**	**29-Jan-2009**	**29-Jan-2014**
3	**A**	**3.45**	**2016**	**16-Dec-2016**	**16-Dec-2021**

6. Date of Establishment of IQAC

6. Date of Establishment of IQAC	**25-May-2004**

7. Internal Quality Assurance System

Quality initiatives by IQAC during the year for promoting quality culture		
Item /Title of the quality initiative by	Date & Duration	Number of participants/ beneficiaries

IQAC		
Understanding LGBTQI issues and Diversity & Inclusion	13-Nov-2019 1	100
Reflections on the Touchstone of Sexual Violence and #MeToo	01-Feb-2020 1	220
Mental illness to mental well-being: Evolution of LGBT conversations	24-Feb-2020 1	55
SEER (Sharing Experience and Educational Research) 3	26-Aug-2019 1	500
Intensive Teaching Workshop 2	20-Aug-2019 1	400
Intensive Teaching Workshop 3	22-Aug-2019 35	500
SEER (Sharing Experience and Educational Research) 4	24-Sep-2019 1	600
Student led Classes for Teachers	10-Sep-2019 1	100
Ph.D. Scholars Workshop	07-Sep-2019 1	78
TLC Goa Conference 2020	13-Feb-2020 3	250
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8. Provide the list of Special Status conferred by Central/ State Government- UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.

Institution/Department/Faculty	Scheme	Funding Agency	Year of award with duration	Amount
BITS Pilani, Physics,Dr. Kaushar Vaidya	RESPOND	ISRO	2020 1095	1772000
BITS Pilani, Biological Sciences,Dr. P N Jha	NASF	ICAR	2019 1095	2394830
BITS Pilani, EEE,Dr. Navneet Gupta	International (INDO-BULGARIA)	DST	2019 730	1182350
BITS Pilani, Management,Dr. Leela Rani	Research Grant (ERIC-EDUCATIONAL RESEARCH AND INNOVATIONS COMMITTEE)	NCERT	2019 730	514500

BITS Pilani, Civil Engg,Dr. Rajiv Gupta	TMD (Consortium Project)	DST	2019 1825	32988508

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9. Whether composition of IQAC as per latest NAAC guidelines:	**Yes**

Upload latest notification of formation of IQAC	View File

10. Number of IQAC meetings held during the year :	**3**

The minutes of IQAC meeting and compliances to the decisions have been uploaded on the institutional website	**Yes**

Upload the minutes of meeting and action taken report	View File

11. Whether IQAC received funding from any of the funding agency to support its activities during the year?	**No**

12. Significant contributions made by IQAC during the current year(maximum five bullets)

1. Initiatives taken to enhance awareness about mental health in campus. 2. Emphasized importance of quality publication in ranking and recognition 3. Enhance out of classroom interaction between students teaching faculty to boost confidence 4. Introduction of various online platforms, tools and resources like Tab made available to the teachers for online class 5. Introduction of dedicated online examination portal to avoid possible mal practice during online examination.

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13. Plan of action chalked out by the IQAC in the beginning of the academic year towards Quality Enhancement and outcome achieved by the end of the academic year

Plan of Action	Achivements/Outcomes
Need of online platforms, tools and resources are felt by the teachers for online classes and evaluation	All faculty members are empowered to buy Tab with stylus for online class and fund allocated for the same. Services of Mercer Mettl online examination portal is hired to avoid possible malpractice during online examination.
In keeping with Institute goal of improving the national and international ranking status it was planned to emphasise importance of	Specific student and Teacher engagement sessions are organised throughout the year, along with invited lecture and workshops.

quality publication among teachers and students.	
As a quality improvement initiative, enhancement of awareness about mental health in campus was planned	Campus now have resident trained mental health consultant who is available for consultation by both students and staff.
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14. Whether AQAR was placed before statutory body ?	**Yes**

Name of Statutory Body	Meeting Date
Management	**07-Dec-2020**

15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?	**Yes**
Date of Visit	**16-Nov-2016**
16. Whether institutional data submitted to AISHE:	**Yes**
Year of Submission	**2020**
Date of Submission	**04-Jun-2020**
17. Does the Institution have Management Information System ?	**Yes**
If yes, give a brief descripiton and a list of modules currently operational (maximum 500 words)	**Yes, the Institute has a comprehensive ERP system implemented across all 4 campuses of the university bringing in automation in all functions of the Institute.**

Part B

CRITERION I – CURRICULAR ASPECTS

1.1 – Curriculum Design and Development

1.1.1 – Programmes for which syllabus revision was carried out during the Academic year

Name of Programme	Programme Code	Programme Specialization	Date of Revision
ME	**CE G518**	**Pavement Analysis and Design**	**01/08/2019**
ME	**CE G523**	**Transportation Systems Planning and Management**	**01/08/2019**
ME	**CE G524**	**Urban Mass**	**01/08/2019**

Programme/Course	Programme Specialization	Course with Code	Date of Introduction
	Transit Planning Operations and Management		
ME	**CE G534**	**Pavement Material Characterization**	**01/09/2019**
ME	**CE G535**	**Highway Geometric Design**	**01/09/2019**
ME	**CE G536**	**Traffic Engineering and Safety**	**01/08/2019**
ME	**CE G516**	**Multicriteria Analysis in Engineering**	**01/09/2019**
ME	**CE G520**	**Infrastructure Planning and Management**	**01/09/2019**
ME	**CE G528**	**Selection of Construction Equipment and Modeling**	**01/09/2019**
ME	**CE G537**	**Transport Economics and Finance**	**01/09/2019**
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1.1.2 – Programmes/ courses focussed on employability/ entrepreneurship/ skill development during the Academic year

Programme with Code	Programme Specialization	Date of Introduction	Course with Code	Date of Introduction
MSc	**SOFT SKILLS FOR PROFESSIONALS and BITS F226**	**01/08/2019**	**BITS F226**	**01/08/2019**
MSc	**CROSS CULTURAL SKILLS**	**01/08/2019**	**HSS F227**	**01/08/2019**
MBA	**MANAGERIAL SKILLS**	**01/08/2019**	**MBA G503**	**01/08/2019**
MBA	**NEGOTIATION SKILL & TECH**	**01/06/2020**	**MBA G506**	**01/06/2020**
MBA	**CREAT & LEAD ENTREP ORGN**	**01/06/2020**	**MBA G582**	**01/06/2020**
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1.2 – Academic Flexibility

1.2.1 – New programmes/courses introduced during the Academic year

Programme/Course	Programme Specialization	Dates of Introduction
ME	**Sanitation Governance, Behaviour change and Advocacy SAN G513**	**01/08/2019**
ME	**Sanitation and Public**	**01/08/2019**

	Health SAN G512	
ME	Sanitation Technology SAN G511	01/08/2019
ME	Research Practice BITS G540	01/08/2019
MPhil	Case studies I BITS E583	01/08/2019
MPhil	Research Methodology I BITS G661	01/08/2019
MPhil	Dissertation BITS G561T	01/08/2019
MPhil	Writing Seminar BITS G518	01/08/2019
MPhil	Theoretical Approaches to Liberal Studies HSS G512	01/08/2019
MPhil	Philosophical Foundations of Liberal Studies HSS G511	01/08/2019
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1.2.2 – Programmes in which Choice Based Credit System (CBCS)/Elective Course System implemented at the University level during the Academic year.

Name of programmes adopting CBCS	Programme Specialization	Date of implementation of CBCS/Elective Course System
BE	Chemical	01/08/1963
BE	Civil	01/08/1959
BE	Electrical and Electronics	01/08/1969
BE	Mechanical	01/08/1946
BE	Computer Science	01/08/1971
BE	Electronics and Instrumentation	01/08/1969
BE	Electronics and Communication	01/08/2009
BE	Manufacturing Engineering	01/08/2009
MSc	Biology	01/08/1964
MSc	Chemistry	01/08/1964
MSc	Economics & Finance	01/08/1964
MSc	Mathematics	01/08/1944
MSc	Physics	01/08/1964
MSc	General Studies	01/08/1964
BPharm	Pharmacy	01/08/1950
ME	M.E Sanitation Science, Techno	01/08/2018
ME	M.E. Biotechnology	01/08/1996

ME	M.E. Chemical	01/08/2011
ME	M.E. Civil in Infrastructure Sys	01/08/2002
ME	M.E. Structural Engineering	01/08/2000
ME	M.E. Civil in Transport Engineering	01/08/2004
ME	M.E. Communication Engineering	01/08/2000
ME	M.E. Computer Science	01/08/1987
ME	M.E. Design Engineering	01/08/1998
ME	M.E. Embedded Systems	01/08/2005
ME	M.E. Manufacturing Systems Engg	01/08/1998
ME	M.E. Mechanical	01/08/1965
ME	M.E. Microelectronics	01/08/1989
ME	M.E. Software Systems	01/08/1993
ME	M.E. Thermal Engineering	01/08/2012
ME	M.E. Elelctrical (Sp Power Electronics & drives	01/08/2006
MBA	M.B.A. Master of Business Admin	01/08/1972
MPharm	M.Pharm. Master in Pharmacy	01/08/1964
MPharm	M.Pharm. Pharmaceutical Chemistry	01/08/2008
MPharm	M.Pharm. Pharmacy in Pharmaceutics	01/08/2008

1.3 – Curriculum Enrichment

1.3.1 – Value-added courses imparting transferable and life skills offered during the year

Value Added Courses	Date of Introduction	Number of Students Enrolled
SOFT SKILLS FOR PROFESSIONALS and BITS F226	01/08/2019	65
CROSS CULTURAL SKILLS and HSS F227	01/08/2019	50
MANAGERIAL SKILLS and MBA G503	01/08/2019	55
NEGOTIATION SKILL TECH and MBA G506	01/06/2020	60
CREAT LEAD ENTREP ORGN and BITS F482,MBA G582,ECON F414	01/06/2020	65
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1.3.2 – Field Projects / Internships under taken during the year

Project/Programme Title	Programme Specialization	No. of students enrolled for Field Projects / Internships
BE	Chemical, Civil , Computer Science, Electrical & Electronics, Electronics & Communication, Electronics and Instrumentation, Manufacturing Engineering, Mechanical	3069
BPharm	B Pharmacy	121
MSc	Biological Sciences, Chemistry, Economics, General Studies, Mathematics, Physics	1724
ME	Biotechnology, Civil, Communication, Computer Science, Design, Embedded, Manufacturing, Mechanical, Microelectronics, Software Systems	473
MBA	MBA	54
MPharm	M Pharmacy	29

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1.4 – Feedback System

1.4.1 – Whether structured feedback received from all the stakeholders.

Students	Yes
Teachers	Yes
Employers	Yes
Alumni	Yes
Parents	Yes

1.4.2 – How the feedback obtained is being analyzed and utilized for overall development of the institution? (maximum 500 words)

Feedback Obtained
Qualitative Feedback is collected before Mid-semester and semester end Comprehensive examination through online process and feedback is available to the concerned faculty on real time basis for necessary measures (if required). Quantitative Feedback is collected for all courses via Questionnaire (manual through hard copy) during the 15th week of a semester. The analysis is carried out on the collected feedback forms by the AUGSD Division. The analysis in terms of feedback score (in a scale of 10) and feedback comments are shared to the concerned faculty A 360o feedback is encouraged. Assessment of all the course Instructors by the students has been made effective apart from qualitative course feedback from students. Based on the feedback received, teachers have taken necessary corrective measures. Based on the feedback received from the students and also external experts and industry personals,

the course content of several courses have been is updated.

CRITERION II – TEACHING- LEARNING AND EVALUATION

2.1 – Student Enrolment and Profile

2.1.1 – Demand Ratio during the year

Name of the Programme	Programme Specialization	Number of seats available	Number of Application received	Students Enrolled
BE	Chemical, Civil, Electrical and Electronics, Mechanical, Computer Science, Electronics and Instrumentation , Electronics and Communication, Manufacturing Engineering	1928	125114	1928
MSc	Biology, Chemistry, Economics & Finance, Mathematics, Physics, General Studies	1002	125114	1002
BPharm	Pharmacy	87	125114	87
MPharm	Master in Pharmacy, Pharmaceutical Chemistry, Pharmacy in Pharmaceutics	70	1494	70
ME	M.E. Embedded Systems, M.E. Manufacturing Systems Engineering, M.E. Mechanical, M.E. Microelectronics, M.E. Software Systems, M.E. Thermal Engineering	664	3540	664
MBA	M.B.A. Master of Business Admin	68	742	68
PhD or DPhil	Doctor of Philosophy	320	2405	320

2.2 – Catering to Student Diversity

2.2.1 – Student - Full time teacher ratio (current year data)

Year	Number of students enrolled in the institution (UG)	Number of students enrolled in the institution (PG)	Number of fulltime teachers available in the institution teaching only UG courses	Number of fulltime teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses
2019	11638	1533	619	156	770

2.3 – Teaching - Learning Process

2.3.1 – Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)

Number of Teachers on Roll	Number of teachers using ICT (LMS, e-Resources)	ICT Tools and resources available	Number of ICT enabled Classrooms	Numberof smart classrooms	E-resources and techniques used
770	770	104	47	153	2323669

2.3.2 – Students mentoring system available in the institution? Give details. (maximum 500 words)

In this academic year, the Placement section organises 5-6 student mentoring sessions across three Indian campuses to provide career assistance. Pre-final year and final-year students make up most of the participants. Pre-final year workshops usually focus on internship preparation, sector/profile scope, and other topics. Students are given statistics from past years to help them make decisions. The initial seminars for final-year students focus on placement registration, résumé building, interview techniques, and other topics. The placement unit communicates the policy, guidelines, and top companies that will be visiting campus prior to the start of each placement cycle. After the first phase of placements (each cycle), students are advised on subsequent positions, the process repeats. These seminars are separate from the placement teams training sessions, which focus on skill gap analysis and interview preparation. After engineering, the placement team, in partnership with industry specialists, advises students on future career options.

Number of students enrolled in the institution	Number of fulltime teachers	Mentor : Mentee Ratio
13171	770	1:17

2.4 – Teacher Profile and Quality

2.4.1 – Number of full time teachers appointed during the year

No. of sanctioned positions	No. of filled positions	Vacant positions	Positions filled during the current year	No. of faculty with Ph.D
770	770	Nill	76	59

2.4.2 – Honours and recognition received by teachers (received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year)

Year of Award	Name of full time teachers receiving awards from state level, national level, international level	Designation	Name of the award, fellowship, received from Government or recognized bodies
2019	Sailaja Nandigama	Assistant Professor	Financial Support and Fee waiver for presenting paper in

Year	Name	Designation	Award
			the fifth Annual Conference of the FLARE Network
2019	Tanu Shukla	Assistant Professor	Financial Support for Outstanding Paper Award under Large Scale Cross National Studies in Education
2019	Rajesh Kumar	Assistant Professor	Visiting France for Joint Research Project Three Years
2019	Ashis K Das	Professor	Full Travel Award to participate in seventh International Conference for Plasmodium vivax Research
2019	VV Hara Gopal	Professor	Selected as Statistician
2019	Archana Srivastava	Assistant Professor	Macro Research Proposal Award
2019	Rishi Kumar	Assistant Professor	Macro Research Proposal Award
2019	Pragya Komal	Assistant Professor	IBRO world Congress Travel grant award
2019	Gireesha TM	Assistant Professor	Best Poster award at in National conference on integrative Plant Biochemistry and Biotechnology India
2019	P K Sahoo	Associate Professor	Fellow of Royal Astronomical Society London
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2.5 – Evaluation Process and Reforms

2.5.1 – Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

Programme Name	Programme Code	Semester/ year	Last date of the last semester-end/ year- end examination	Date of declaration of results of semester- end/ year- end examination
ME	Chemical, Civil, Computer Science, Mechanical, Software System, Electrical and	Second Semester	14/05/2020	31/07/2020

		Electronics			
ME	Chemical, Civil, Computer Science, Mechanical, Software System, Electrical and Electronics	First Semester	14/12/2019	31/12/2019
MSc	Biological Sciences, Chemistry, Economics, Mathematics, Physics, General Studies	Second Semester	14/05/2020	31/07/2020
BE	Civil, Electrical and Electronics, Mechanical, Chemical, computer science,	Second Semester	14/05/2020	31/07/2020
BE	Civil, Electrical and Electronics, Mechanical, Chemical, computer science,	First Semester	14/12/2019	31/12/2019
MSc	Biological Sciences, Chemistry, Economics, Mathematics, Physics, General Studies	First Semester	14/12/2019	31/12/2019
MBA	Engineering and Technology Management , IT Services Management, Finance, Marketing	First Semester	14/12/2019	31/12/2019
MBA	Engineering and Technology Management , IT Services Management, Finance, Marketing	Second Semester	14/05/2020	31/07/2020
BPharm	Pharmacy	First Semester	14/12/2019	31/12/2019
BPharm	Pharmacy	Second	14/05/2020	31/07/2020

		Semester		
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2.5.2 – Average percentage of Student complaints/grievances about evaluation against total number appeared in the examinations during the year

Number of complaints or grievances about evaluation	Total number of students appeared in the examination	Percentage
86	26532	0.32

2.6 – Student Performance and Learning Outcomes

2.6.1 – Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)

https://universe.bits-pilani.ac.in/uploads/MF%20F311_Handout.pdf

2.6.2 – Pass percentage of students

Programme Code	Programme Name	Programme Specialization	Number of students appeared in the final year examination	Number of students passed in final year examination	Pass Percentage
B1	MSc	M.Sc.(Biological Sciences)	108	108	100
A5	BPharm	B.Pharm.	54	54	100
AB	BE	B.E.(Manufacturing Engineering)	61	61	100
AA	BE	B.E.(Electronics & Communication)	82	82	100
A8	BE	B.E.(Electronics and Instrumentation)	175	175	100
A7	BE	B.E.(Computer Science)	356	356	100
A4	BE	B.E.(Mechanical)	213	213	100
A3	BE	B.E.(Electrical and Electronics)	251	251	100
A2	BE	B.E.(Civil)	114	114	100
A1	BE	B.E.(Chemical)	165	165	100
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2.7 – Student Satisfaction Survey

2.7.1 – Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

https://www.iqauge.in/rating/birla-institute-of-technology-and-science-

CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

3.1 – Promotion of Research and Facilities

3.1.1 – Teachers awarded National/International fellowship for advanced studies/ research during the year

Type	Name of the teacher awarded the fellowship	Name of the award	Date of award	Awarding agency
International	Prof Devendra Kumar and Prof B.K. Sharma	Have individually received travel grant of Rs. 2.3 lakh each to participate in International Congress on Industrial and Applied Mathematics, Spain	31/12/2019	International Congress on Industrial and Applied Mathematics
International	Dr. Aneesh A. M.	Invited with a Travel grant to participate in the Hands-On Research in Complex Systems School at The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy	31/01/2020	Abdus Salam International Centre for Theoretical Physics
International	Dr. M.S. Dasgupta	DST Travelling Grant for attending IIR Congress, Montreal Canada.	31/12/2019	IIR Congress, Montreal Canada.
National	Prof. Anil Kumar	Selected for CRSI Bronze Medal (2019-20) by Chemical Research Society of India, Bangalore and also received INSA-Visiting Scientist Fellowship to visit Germany under	31/12/2019	INSA New Delhi

		International Scientific Collaboration and Exchange of Scientists Programme, INSA Ne		
International	Dr. Reena Cheruvalath	Data Colleciton Abroad Fellowship, on Meta-moral Cognition and Critical Thinking in University of Kyoto, Japan, 2019, Awarded by ICSSR	31/12/2019	ICSSR
International	Dr. Rudranil Basu	Received Fulbright-Nehru Postdoctoral Research Fellowship, hosted at the Center for the Fundamental Laws of Nature, Harvard University.	31/12/2019	Fulbright
International	Dr. Suvadip Batabyal	Received the TUBITAK 2019 fellowship from Govt. of Turkey for visiting scientist at Sabanci University, Turkey.	31/12/2019	Government of Turkey
International	Dr. Sanket Goel	Received Visiting fellowship from TAOYAKA Program, Hiroshima University, Jan 2019.	31/01/2019	Hiroshima University
National	Dr. Shilpaa Anan	Invited honorary affiliation: Distinguished Research Fellow at the Centre for Disability Studies, NALSAR University of	31/12/2019	NALSAR University of Law

| International | Prof. P. K. Sahoo | Has been elected as a fellow of Royal Astronomical Society, London and also elected as a foreign member of Russian Gravitational Society. | 31/12/2019 | Royal Astronomical Society, London |

| Law, Hyderabad |

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 3.1.2 – Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other fellows in the Institution enrolled during the year

Name of Research fellowship	Duration of the fellowship	Funding Agency
JRF	1095	SERB
JRF	1095	SERB
JRF	1095	SERB
JRF	1095	SERB
JRF	1095	SERB
JRF	730	SERB
JRF	730	SERB
JRF	1095	SERB
JRF	1095	SERB
JRF	1095	SERB

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3.2 – Resource Mobilization for Research

 3.2.1 – Research funds sanctioned and received from various agencies, industry and other organisations

Nature of the Project	Duration	Name of the funding agency	Total grant sanctioned	Amount received during the year
Major Projects	1825	UGC- DAE	4	2
Any Other (Specify)	1095	ISRO	18	6
Any Other (Specify)	1095	ICAR	24	12
Any Other (Specify)	730	DST	12	6
Any Other (Specify)	730	NCERT	5	4
Any Other (Specify)	1825	DST	330	13
Any Other (Specify)	1095	SERB	50	25
Any Other	1095	DST	36	22

(Specify)				
Any Other (Specify)	1460	DST	40	7
Any Other (Specify)	1460	SERB	47	10

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3.3 – Innovation Ecosystem

3.3.1 – Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

Title of workshop/seminar	Name of the Dept.	Date
Mini-colloquium on Emerging and Interdisciplinary Areas of Biological Science Research	Biological Science, Piani Campus	02/03/2019
4th Workshop on Analytical Instrument for Chemical and Environmental Engineers (WAICEE-2019) during	Chemical Engineering, Pilani Campus	25/03/2019
Personal and Professional Development Workshop for Women Researchers	Chemical Engineering, Pilani Campus	12/11/2019
Organised symposium Theoretical Chemistry Symposium (TCS-2019)	Chemistry, Pilani Campus	13/02/2019
Organized a one day workshop on Blockchain technology and applications	Computer Science Information Systems, Pilani Campus	10/11/2019
Organized a four day workshop on "Applied Deep Learning (IWADL-2019)"	Computer Science Information Systems, Pilani Campus	15/12/2019
National Workshop on Power Electronics Applications and Real-time Implementation	Electrical and Electronics Engineering Instrumentation, Pilani Campus	18/01/2019
Symposium on Carbon Nanomaterial Electronics (SCNE) 2019	Electrical and Electronics Engineering Instrumentation, Pilani Campus	08/11/2019
Conference on Interdisciplinarity of Knowledge, Education and Research	Humanities and Social Sciences, Pilani Campus	08/02/2019

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3.3.2 – Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of Awardee	Awarding Agency	Date of award	Category

Best Paper Award in the Category of Food Research	Prof.Yogeeswari	International Conference on Biotechnological Innovations in Food and Health care,Dubai, UAE	27/01/2019	Faculty
BITS Innovation Competition (BIC 2019)	Urvashi Satwani	BITS alumnus	01/11/2019	Students
BITS Innovation Competition (BIC 2019)	Hardik Bhatia, Gourisha Sethi, Sarthak Sethi, Yatharth Kher	BITS alumnus	16/12/2019	Students
BITS Innovation Competition (BIC 2019)	Sameeksha Amin, Neeharika Senthilkumar, Clayton Pereira, Aamer Abdul	BITS alumnus	16/12/2019	Students
BITS Innovation Competition (BIC 2019)	Jaskanwar Singh, Sujith Sizon, Urvashi Satwani	BITS alumnus	16/12/2019	Students
BITS Innovation Competition (BIC 2019)	Allan Mathew, Mohammed Suhail, Hrishikesh Uralath, Sanjeev Narasimhan	BITS alumnus	16/12/2019	Students
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3.3.3 – No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Center	Name	Sponsered By	Name of the Start-up	Nature of Start-up	Date of Commencement
Pilani	Pilani Innovation and Entrepreneurship Development Society	MeitY	Neoncube Solutions Pvt. Ltd	Media	17/03/2020
Pilani	Pilani Innovation and Entrepreneurship Development Society	MeitY	Nawgati Tech Pvt Ltd	Mobility	17/03/2020
Pilani	Pilani Innovation and Entrepreneurship Development	MeitY	Urban Track Pvt Ltd.	Mobility	17/03/2020

| Pilani | Pilani Innovation and Entrepreneurship Development Society | MeitY | Greynight Pvt Ltd | SpaceTech | 17/03/2020 |
| Pilani | Pilani Innovation and Entrepreneurship Development Society | PIEDS | Elixar Systems Pvt Ltd | AR/VR | 20/11/2020 |

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3.4 – Research Publications and Awards

3.4.1 – Ph. Ds awarded during the year

Name of the Department	Number of PhD's Awarded
Biological Sciences	8
Chemical Engineering	10
Chemistry	19
Civil Engineering	10
Computer Science	7
Economics Finance	5
Electrical Electronic Engineering	16
Humanities and Social Sciences	2
Management	1
Mathematics	8
Mechanical Engineering	13
Pharmacy	5
Physics	7

3.4.2 – Research Publications in the Journals notified on UGC website during the year

Type	Department	Number of Publication	Average Impact Factor (if any)
International	Electrical and Electronics Engineering	246	3.04
National	Electrical and Electronics Engineering	2	1.56
International	Mechanical Engineering	176	3.43
National	Mechanical Engineering	8	0.80
International	Pharmacy	159	4.04
National	Pharmacy	8	0.57

International	Chemistry	134	4.66
National	Chemistry	3	1.06
International	Mathematics	126	246
National	Mathematics	5	1.68
[View File](#)			

3.4.3 – Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

Department	Number of Publication
Humanities and Social Sciences	13
Computer Science	15
Biological Sciences	15
Pharmacy	15
Mathematics	20
Chemical Engineering	29
Civil Engineering	39
Mechanical Engineering	111
Computer Science and Information Systems	146
Electrical and Electronics Engineering	197
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3.4.4 – Patents published/awarded/applied during the year

Patent Details	Patent status	Patent Number	Date of Award
A CO-CHLORINATION PROCESS FOR PARAFFINS AND POLY-OLEFINS	Filed	201911011261	22/03/2019
LIPIDIC NANOCARRIERS EMBEDDED TOPICAL PREPARATION OF PDE4 INHIBITORS	Filed	201911011318	23/03/2019
A laptop bag with an integrated laptop stand	Filed	201921011315	23/03/2019
Compounds for use as anti-cancer agents and a process for synthesizing the same	Published	201941002679	24/07/2020
MICROFLUIDICS BASED INTEGRATED SYSTEM FOR NITTRITE AND NITRATE DETECTION AND	Published	201911004347	07/08/2020

ANALYSIS				
LARVICIDAL FORMULATION AND A PROCESS FOR THE PREPARATION THEREOF	Filed	201911003889	31/01/2019
SORALLY ACTIVE NANOFORMULATION OF LISOFYLLINE AND COMPOSITION THEREOF	Filed	201911004346	04/02/2019
SYNTHESIS OF NEW TRIAZOLYL LINKED BILE ACID ARYL KETONES	Filed	201911006301	18/02/2019
An apparatus for determining gas permeability of concrete and method thereof	Filed	201911008791	06/03/2019
A LYOTROPIC LIQUID CRYSTALLINE NANOPARTICLES BASED HYDROGEL OF VORICONAZOLE FOR TOPICAL APPLICATION	Filed	201911011317	23/03/2019

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3.4.5 – Bibliometrics of the publications during the last academic year based on average citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index

Title of the Paper	Name of Author	Title of journal	Year of publication	Citation Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self citation
ALVEC: A uto-scaling by Lotka Volterra elastic cloud: A QoS aware non linear dynamical allocation model	Goswami(Mukherjee) B., Sarkar J., Saha S., Kar S., Sarkar P.	Simulation Modelling Practice and Theory	2019	4	Birla Institute of Technology and Science	4
Groundwater Quality Assessment in a Hyper-arid Region of Rajasthan, India	Bhakar P., Singh A.P.	Natural Resources Research	2019	24	Birla Institute of Technology and Science	24
Fuzzy-	Pradheep	Advances	2019	1	Birla	1

Title	Authors	Journal	Year		Institution	
based machine learning algorithm for intelligent systems	Kumar K.	in Intelligent Systems and Computing			Institute of Technology and Science	
Experimental Investigations on Building Derived Materials in Chemically Aggressive Environment as a Partial Replacement of Soil in Geotechnical Applications	Suluguru A.K., Surana S.R., GuhaRay A., Kar A., Muktinutalapati J.	Geotechnical and Geological Engineering	2019	3	Birla Institute of Technology and Science	3
Evaluation and comparison of environmental performance for shackle insulators – a case study	Choudhary K., Soherwordi S.A., Singh Y., Sangwan K.S.	Management of Environmental Quality: An International Journal	2019	4	Birla Institute of Technology and Science	4
Does Studying 'Ethics' Improve Engineering Students' Meta-Moral Cognitive Skills?	Cheruvalath R.	Science and Engineering Ethics	2019	5	Birla Institute of Technology and Science	5
Butterfly-fat-tree topology-based fault-tolerant network-on-chip design using particle	Bhanu P.V., Kulkarni P.V., Anil Kumar U., Soumya J.	Advances in Intelligent Systems and Computing	2019	0	Birla Institute of Technology and Science	Nill

swarm optimization						
A comprehensive study on evolutionary algorithm-based multilayer perceptron for real-world data classification under uncertainty	Dash T., Behera H.S.	Expert Systems	2019	1	Birla Institute of Technology and Science	1
Application of cognitive radio and interference cancellation in the L-Band based on future air-to-ground communication systems	Raja M.	Digital Communications and Networks	2019	5	Birla Institute of Technology and Science	5
3-D Printed Integrated and Automated Electro-Microfluidic Viscometer for Biochemical Applications	B. P.S., Puranam S.A., Goel S.	IEEE Transactions on Instrumentation and Measurement	2019	14	Birla Institute of Technology and Science	14

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3.4.6 – h-Index of the Institutional Publications during the year. (based on Scopus/ Web of science)

Title of the Paper	Name of Author	Title of journal	Year of publication	h-index	Number of citations excluding self citation	Institutional affiliation as mentioned in the publication
Increasing complexity and interactions of oxidative stress in chronic re	Dua K., Malyla V., Singhvi G., Wadhwa R., Krishna R.V., Shukla	Chemico-Biological Interactions	2019	10	51	Birla Institute of Technology and Science

spiratory diseases: An emerging need for novel drug delivery systems	S.D., Shastri M.D., Chellappan D.K., Maurya P.K., Satija S., Mehta M., Gulati M., Hansbro N., Collet T., Awasthi R., Gupta G., Hsu A., Hansbro P.M.						
Author Correction: SciPy 1.0: fundamental algorithms for scientific computing in Python (Nature Methods, (2020), 10.1038/s41592-019-0686-2)	Virtanen P., Gommers R., Oliphant T.E., Haberland M., Reddy T., Cournapeau D., Burovski E., Peterson P., Weckesser W., Bright J., van der Walt S.J., Brett M., Wilson J., Millman K.J., Mayorov N., Nelson A.R.J., Jones E., Kern R., Larson E., Carey C.J	Nature Methods	2020	9	53	Birla Institute of Technology and Science
Environmental impact assessment of fly ash and silica fume based	Bajpai R., Choudhary K., Srivastava A., Sangwan	Journal of Cleaner Production	2020	8	60	Birla Institute of Technology and Science

geopolymer concrete	K.S., Singh M.						
Blockchain in smart grids: A review on different use cases	Alladi T., Chamola V., Rodrigues J.J.P.C., Kozlov S.A.	Sensors (Switzerland)	2019	7	61	Birla Institute of Technology and Science
Recent progress in thermochemical techniques to produce hydrogen gas from biomass: A state of the art review	Bhoopendra Pandey., Yogesh K P rajapati., Sheth Pratik Nit inchandra	International Journal of Hydrogen Energy	2019	6	66	Birla Institute of Technology and Science
Blockchain Applications for Industry 4.0 and Industrial IoT: A Review	REZA M PARIZI., Teja Alladi., Vinay Chamola., KIM-KWANG RAYMOND CHOO	IEEE Access	2019	5	71	Birla Institute of Technology and Science
Blockchain for Internet of Energy management : Review, solutions, and challenges	Miglani A., Kumar N., Chamola V., Zeadally S.	Computer Communications	2020	4	74	Birla Institute of Technology and Science
Bile acid metabolites control Th17 and Treg cell differentiation	Jun Huh., Aiyu Hang., Donggi Paik., Sloan Devlin., Trinath Jamma., Jingping Lu., Soyoung Ha., Brandon Nelson.,	Nature	2019	3	196	Birla Institute of Technology and Science

	Samantha Kelly., Lin Wu., Ye Zheng., Fraydoon Rastinejad., Michael Krout., Michael Fischbach., Dan Littman					
A Comprehensive Review of the COVID-19 Pandemic and the Role of IoT, Drones, AI, Blockchain, and 5G in Managing its Impact	Vinay Chamola., Hassija, V., Gupta, V., Guizani, M	IEEE Access	2020	2	259	Birla Institute of Technology and Science
Visualizing and interpreting cancer genomics data via the Xena platform	Goldman M.J., Craft B., Hastie M., Repe?ka K., McDade F., Kamath A., Banerjee A., Luo Y., Rogers D., Brooks A.N., Zhu J., Haussler D.	Nature Biotechnology	2020	1	339	Birla Institute of Technology and Science

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3.4.7 – Faculty participation in Seminars/Conferences and Symposia during the year

Number of Faculty	International	National	State	Local
Presented papers	305	7	Nill	Nill

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3.5 – Consultancy

3.5.1 – Revenue generated from Consultancy during the year

Name of the Consultan(s) department	Name of consultancy project	Consulting/Sponsoring Agency	Revenue generated (amount in rupees)

Management	Effective Project Management	Shree Cement	164746
Economics	Sustainability of Cashless Banking in Unorganized Retail Sector: Issues and Challenges ahead	Project IIBF	52966
Humanities	AP HRDI - Entrustment of Studies - Cyclone Titli	Project Cyclone	125000
Humanities	Incubating a discourse for Cooperation, Contentment, and Care: to Enable Justice for All	NALSAR	75000
Mechanical Engineering	Automation of sample preparation process for pharmaceutical Applications	Aizant Drug Research Solutions Pvt.Ltd	1214609
CSIS	Network Coding for Multipath Transport	AnsuR Technologies AS , Oslo Norway	264375
Chemical	Environmental Audit (EA) for Ammonia, Urea, Phosphate Fertilizers Units and Storage Sections.	M/s.Zuari Agro Chemicals Ltd	851960
Chemical	Water Audit (WA) for Ammonia, Urea, Phosphate Fertilizers Units and Storage Sections.	M/s.Zuari Agro Chemicals Ltd	851960
CSIS	Tata Consultancy Services	Tata Consultancy Services	720000
Mechanical	Assessing Rotomoldabilty of Materials	Roots Multiclean Ltd. Tamilnadu	148491

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3.5.2 – Revenue generated from Corporate Training by the institution during the year

Name of the Consultan(s) department	Title of the programme	Agency seeking / training	Revenue generated (amount in rupees)	Number of trainees
WILP	Post Graduate Certificate In Big Data Engineering	Individual Entry Prog. With Upgrad	12619318	192

WILP	Post Graduate Certificate In Internet Of Things	Individual Entry Prog.	22934326	116
WILP	Post Graduate Certificate In Manufacturing Practice	Bosch	3129009	42
WILP	Self Paced Cbde Certificate Of Participation	Individual Entry Prog. With Upgrad	6970	1
WILP	Self Paced Cbda Certificate Of Participation	Individual Entry Prog. With Upgrad	126652	4
WILP	Certificate Programme in Applied Industrial Microbiology	Biocon Academy	912000	19
WILP	Certificate Programme in Applied Industrial Microbiology	Biocon Academy	768000	16
WILP	Certificate Programme in Applied Industrial Microbiology	Biocon Academy	960000	20
WILP	CERTIFICATE IN GENERAL MANAGEMENT	Bosch	958137	15
WILP	Certificate In Manufacturing Practice	Bosch	3285458	46
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3.6 – Extension Activities

3.6.1 – Number of extension and outreach programmes conducted in collaboration with industry, community and Non- Government Organisations through NSS/NCC/Red cross/Youth Red Cross (YRC) etc., during the year

Title of the activities	Organising unit/agency/ collaborating agency	Number of teachers participated in such activities	Number of students participated in such activities
Covid-19 Awareness	National Service Scheme, BITS Pilani	2	50
Mental Health Awareness	National Service Scheme, BITS Pilani	2	50
Blood Donation Camp	National Service Scheme, BITS Pilani	75	1500

Gender Inequality	National Service Scheme, BITS Pilani	2	100
Promoting Women Empowerment	National Service Scheme, BITS Pilani	2	100
Annual Sporting Event for Specially abled children	National Service Scheme, BITS Pilani	20	400
Carrer Guidance	National Service Scheme, BITS Pilani	2	100
English Literacy	National Service Scheme, BITS Pilani	2	50
Awareness Camp	Project Umang in collaboration with NSS, BITS Pilani	4	250
Digital Literacy	National Service Scheme, BITS Pilani	2	100
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3.6.2 – Awards and recognition received for extension activities from Government and other recognized bodies during the year

Name of the activity	Award/Recognition	Awarding Bodies	Number of students Benefited
Nirmaan	BITS Pilani Mantra Award	BITSAA	4
No file uploaded.			

3.6.3 – Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

Name of the scheme	Organising unit/Agency/collaborating agency	Name of the activity	Number of teachers participated in such activites	Number of students participated in such activites
Youth Employment	Nirmaan, BITS Pilani	Training programmmes	1	10
Participatory Community Development	Nirmaan, BITS Pilani	Community development	1	6
Unnati	Nirmaan, BITS Pilani	Self Help Group	3	15
Swayamshakti	Nirmaan, BITS Pilani	Self Help Group	3	20
Pilani ki Pathshala	Nirmaan, BITS Pilani in collaboration with PARC	Digital literacy and mentorhsip	1	15
Shiksha ki Ore	Nirmaan, BITS Pilani	Mentorship	3	20
Gyan Bodh Baas	Nirmaan, BITS Pilani	Mentorship	1	10
School Adoption	Nirmaan, BITS Pilani	Mentorship	1	10

Programme				
Project Disha	Nirmaan, BITS Pilani	Career Guidance	1	20
Project Utkarsh	Nirmaan, BITS Pilani	Mentorship	35	15

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3.7 – Collaborations

3.7.1 – Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of activity	Participant	Source of financial support	Duration
Faculty Exchange (Outbond)	Anasua GuhaRay	BITS Pilani, Alumni, Overseas Universities	5
Faculty Exchange (Outbond)	Sarmistha Banik	BITS Pilani, Alumni, Overseas Universities	6
Faculty Exchange (Outbond)	Soumya J	BITS Pilani, Alumni, Overseas Universities	5
Faculty Exchange (Outbond)	Soumya J	BITS Pilani, Alumni, Overseas Universities	5
Faculty Exchange (Outbond)	Soumya J	BITS Pilani, Alumni, Overseas Universities	4
Faculty Exchange (Outbond)	Bheemeshwar Reddy A	BITS Pilani, Alumni, Overseas Universities	8
Student Exchange (Outbond)	Awani R. Khodkumbhe	BITS Pilani, Alumni, Overseas Universities	135
Student Exchange (Outbond)	Mihir Vinay Kulkarni	BITS Pilani, Alumni, Overseas Universities	135
Student Exchange (Outbond)	Parv Dani	BITS Pilani, Alumni, Overseas Universities	135
Student Exchange (Outbond)	Rushabh Patel	BITS Pilani, Alumni, Overseas Universities	135

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3.7.2 – Linkages with institutions/industries for internship, on-the- job training, project work, sharing of research facilities etc. during the year

Nature of linkage	Title of the linkage	Name of the partnering institution/ industry /research lab with contact details	Duration From	Duration To	Participant

Internship	Practice School - I	Mylan Laboratories Ltd , Hyderabad	18/05/2020	27/06/2020	STUTI BHAT TACHARYYA .
Internship	Practice School - I	Market Data Forecast - Secondary Research , Hyderabad	18/05/2020	27/06/2020	ANMOL GUPTA .
Internship	Practice School - I	Pilani AtmaNirbhar Resource Center (PARC) , Pilani	18/05/2020	27/06/2020	NARKEDAMILLI VENKATA SAGAR .
Internship	Practice School - I	Baga Cement Works - Environment Management , Solan	18/05/2020	27/06/2020	DURGUMAHANTI SAI PRASANNA KUMAR
Internship	Practice School - I	Market Data Forecast - Secondary Research , Hyderabad	18/05/2020	27/06/2020	SHASHWAT OORJIT AVASTHI .
Internship	Practice School - I	CEERI - VLSI Design , Pilani	18/05/2020	27/06/2020	DEBABRATA CHAUDHURY .
Internship	Practice School - I	TNSTC - Digital Content - Geology , Chennai	18/05/2020	27/06/2020	SIGIREDDI AMAR .
Internship	Practice School - I	Pilani AtmaNirbhar Resource Center (PARC) , Pilani	18/05/2020	27/06/2020	V ABISHEK BALAJI .
Internship	Practice School - I	Industry Arc - Sectoral Study - 2 , Hyderabad	18/05/2020	27/06/2020	AMAR UTKARSH .
Internship	Practice School - I	Prakriti Organics - Content writing , Bilaspur	18/05/2020	27/06/2020	SIDDARTH GUPTA .
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3.7.3 – MoUs signed with institutions of national, international importance, other universities, industries, corporate houses etc. during the year

Organisation	Date of MoU signed	Purpose/Activities	Number of students/teachers participated under MoUs
Pace University, New York, USA	20/08/2019	To cooperate with respect to a short-term study abroad course with Pace University sending its students to BITS. BITS shall provide instruction for the course and arrange for accommodation and local transportation etc. for the students.	20
La Trobe University, Australia	02/09/2019	Partnering through the creation of the Asian Smart Cities Research and Innovation Network to establish research partnerships with industry and Government, to engage in collaborative business development, sharing of facilities, knowledge and skills, a	5
Macquarie University, Sydney, Australia	24/07/2020	To cooperate in education by exchange of faculty and students and to collaborate in joint research in the areas of mutual interest and capability.	5
Ben-Gurion University of the Negev, Beer-Sheva, Israel	23/10/2019	To cooperate in the fields of education, research, promotion ofexchange opportunities for academic staff, professional staff and students and	5

CRITERION IV – INFRASTRUCTURE AND LEARNING RESOURCES

4.1 – Physical Facilities

4.1.1 – Budget allocation, excluding salary for infrastructure augmentation during the year

Budget allocated for infrastructure augmentation	Budget utilized for infrastructure development
23501	13285

4.1.2 – Details of augmentation in infrastructure facilities during the year

Facilities	Existing or Newly Added
Number of important equipments purchased (Greater than 1-0 lakh) during the current year	Newly Added
Others	Existing
Laboratories	Newly Added
Class rooms	Newly Added
Campus Area	Existing

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4.2 – Library as a Learning Resource

4.2.1 – Library is automated {Integrated Library Management System (ILMS)}

Name of the ILMS software	Nature of automation (fully or patially)	Version	Year of automation
KOHA	Fully	?20.05.17	2016

4.2.2 – Library Services

Library Service Type	Existing		Newly Added		Total	
Text Books	13021	10714090	13117	19111249	26138	29825339
Reference Books	5791	17958155	212734	370100	218525	18328255
e-Books	5176	5617183	1604	5070804	6780	10687987
Journals	246	5712639	300	2269736	546	7982375
e-Journals	20630	69007589	20630	50816102	41260	119823691
Digital Database	44	19774672	44	40588918	88	60363590
CD & Video	2429	474434	2398	Nill	4827	474434
Library Automation	1	Nill	Nill	302030	1	302030

| Others(s pecify) | 331 | Nill | 1520 | Nill | 1851 | Nill |

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4.2.3 – E-content developed by teachers such as: e-PG- Pathshala, CEC (under e-PG- Pathshala CEC (Under Graduate) SWAYAM other MOOCs platform NPTEL/NMEICT/any other Government initiatives & institutional (Learning Management System (LMS) etc

Name of the Teacher	Name of the Module	Platform on which module is developed	Date of launching e-content
Srikanth Koka	Principles of Management	Taxila	01/12/2019
Vimal SP Raja Vadhana	AI/ML C4 - Unsupervised Learning	Canvas	01/12/2019
Pravin Pawar	Stream Processing and Analytics	Taxila	01/02/2019
YVK Ravi Kumar	Advanced Statistical Techniques for Analytics	Taxila	01/04/2019
Sandeep Kayastha	Materials Management	Taxila	01/04/2019
Sonika Rathi	Introduction to DevOps	Taxila	01/05/2019
Snehanshu Saha	Machine Learning	Taxila	01/07/2019
Aruna M	AI/ML C2 - Feature Engineering	Canvas	01/07/2019
K. Bindumadhavan	Global Financial Markets and Products	Taxila	01/07/2019
K. Bindumadhavan	Market Risk Management	Taxila	01/08/2019

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4.3 – IT Infrastructure

4.3.1 – Technology Upgradation (overall)

Type	Total Computers	Computer Lab	Internet	Browsing centers	Computer Centers	Office	Departments	Available Bandwidth (MBPS/GBPS)	Others
Existing	2069	1250	1120	0	56	647	64	3	0
Added	169	69	158	0	10	109	10	1	0
Total	2238	1319	1278	0	66	756	74	4	0

4.3.2 – Bandwidth available of internet connection in the Institution (Leased line)

5 MBPS/ GBPS

4.3.3 – Facility for e-content

Name of the e-content development facility	Provide the link of the videos and media centre and

	recording facility
Cameras (DSLR and Camcorder), EXTRON setup	http://taxila-aws.bits-pilani.ac.in/course/view.php?id=4704
Adobe Creative Cloud (CC2020) - for Post-production, supporting tools like MS PowerPoint, Apple Keynote, etc.	https://bits-pilani.instructure.com/courses/27

4.4 – Maintenance of Campus Infrastructure

4.4.1 – Expenditure incurred on maintenance of physical facilities and academic support facilities, excluding salary component, during the year

Assigned Budget on academic facilities	Expenditure incurred on maintenance of academic facilities	Assigned budget on physical facilities	Expenditure incurredon maintenance of physical facilites
2051	1788	1935	1921

4.4.2 – Procedures and policies for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc. (maximum 500 words) (information to be available in institutional Website, provide link)

Attached website links have all the details related to procedure and policies regarding Online access of the library of all the campus Policies regarding 1) leave rules, 2) TA/DA Rules, 3) PF and Gratuity, 4) LTC 5) Medical, 6) Fee Scholarship, 7) Loans, 8) Accommodation, 9) Guidelines on Consultancy and Testing Project Appointments: Facilities and benefits, Travel Support, Utilization of Overheads for Sponsored Projects, Appraisal, Superannuation, Promotion • Facilities and Benefits: Research Initiation Grant • Seed Grant Scheme • Chair Professorship • OPERA Award • Relocation Allowance • Computer Equipment Replacements • Professional Development Allowance • Sabbatical Leave • Extraordinary Leave • Guidelines for Faculty - Industry Immersion Scheme • Guidelines for Faculty - University Immersion Scheme Opportunities: • PMS Guidelines 2019-20 • Promotion Policies • Designation Change • Re-appointments • Extensions • Super-annulation • Gratuity • Provident Fund • Seniority terms • Awards • Industry Immersion • University Immersion https://www.bits-pilani.ac.in/Pilani/bitsLibrary

https://www.bits-pilani.ac.in/university/fad/Policies

CRITERION V – STUDENT SUPPORT AND PROGRESSION

5.1 – Student Support

5.1.1 – Scholarships and Financial Support

	Name/Title of the scheme	Number of students	Amount in Rupees
Financial Support from institution	FD TA Ship, Merit Scholarship, MCN Scholarship, Student Aid Fund, International Students	1273	74107320
Financial Support from Other Sources			
a) National	Nill	Nill	Nill
b)International	International Students	52	7013908
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5.1.2 – Number of capability enhancement and development schemes such as Soft skill development, Remedial coaching, Language lab, Bridge courses, Yoga, Meditation, Personal Counselling and Mentoring etc.,

Name of the capability enhancement scheme	Date of implemetation	Number of students enrolled	Agencies involved
Employability training for First Degree, Higher Degree and MBA students	01/04/2019	177	Seniors on Call
online mock aptitude test series	04/06/2019	322	placementseasson. com
Resume Interview preparation trainin g for First Degree, Higher Degree and MBA students	27/07/2019	210	Ethnus Consultancy Services Pvt. Ltd.
Resume Interview preparation trainin g to our First Degree, Higher Degree and MBA students	31/08/2019	184	Ethnus Consultancy Services Pvt. Ltd.
Aptitude Training	27/11/2019	196	placementseasson. com
Placement Preparatory Courses training for first degree students	28/12/2019	317	Ethnus Consultancy Services Pvt. Ltd.
Aptitude Training	02/01/2020	91	placementseasson. com

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5.1.3 – Students benefited by guidance for competitive examinations and career counselling offered by the institution during the year

Year	Name of the scheme	Number of benefited students for competitive examination	Number of benefited students by career counseling activities	Number of students who have passedin the comp. exam	Number of studentsp placed
2019	PPO(Summer Internship)	Nill	170	Nill	170
2020	PPO(Summer Internship)	Nill	25	Nill	25
2019	PPO(PS II)	Nill	59	Nill	59
2020	PPO(PS II)	Nill	281	Nill	281
2019	Off campus	Nill	152	Nill	152
2020	Off campus	Nill	54	Nill	54
2019	On campus	Nill	615	Nill	615

2020	On campus	Nill	764	Nill	764

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5.1.4 – Institutional mechanism for transparency, timely redressal of student grievances, Prevention of sexual harassment and ragging cases during the year

Total grievances received	Number of grievances redressed	Avg. number of days for grievance redressal
1	1	12

5.2 – Student Progression

5.2.1 – Details of campus placement during the year

On campus			Off campus		
Nameof organizations visited	Number of students participated	Number of stduents placed	Nameof organizations visited	Number of students participated	Number of stduents placed
347	27628	2205	75	676	676

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5.2.2 – Student progression to higher education in percentage during the year

Year	Number of students enrolling into higher education	Programme graduated from	Depratment graduated from	Name of institution joined	Name of programme admitted to
2020	1	BE	Computer Science	IBS	MBA / PGDM / PGDBM
2020	1	BE	Civil	Georgia Institute of Technology	MS
2020	1	BE	Chemical	Pennsylvania State University	PhD
2020	1	BE	Chemical	University of California San Diego	MS
2020	1	BE	Chemical	University of California Los Angeles	MS
2020	1	BE	Chemical	Stanford University	MS
Nill	1	BE	Chemical	IHE Delft	MS
2020	1	BE	Chemical	University of Waterloo	M.Tech / M.E
2020	1	BE	Chemical	Indian institute of technology gawhati	M.Tech / M.E
2020	1	BE	Chemical	Imperial	M.Sc

				College of London	

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5.2.3 – Students qualifying in state/ national/ international level examinations during the year (eg:NET/SET/SLET/GATE/GMAT/CAT/GRE/TOFEL/Civil Services/State Government Services)

Items	Number of students selected/ qualifying
GMAT	32
CAT	12
Civil Services	10

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5.2.4 – Sports and cultural activities / competitions organised at the institution level during the year

Activity	Level	Number of Participants
BITSRun	intra BITS	250
i-BOSM	intra BITS	400
SPREE Sports Festival	Inter College	600
ARENA Sports Meet	Inter College	800
Quark is the annual technical festival	Inter College	4000
ATMOS annual technical Festival	Inter College	6000
Pearl the national annual cultural festival	Inter College	1000
BOSM Sports Meet	Inter College	1300
APOGEE international technical festival	Inter College	8000
Oasis Cultural Activity	Inter College	1800

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5.3 – Student Participation and Activities

5.3.1 – Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one)

Year	Name of the award/medal	National/ Internaional	Number of awards for Sports	Number of awards for Cultural	Student ID number	Name of the student
2019	LLB at IIT KGP	National	Nill	1	2015A1TS 0795H	SPARSH SHARMA
2019	2019 Annual Conference of the North American Chapter of the Association for Computational Lingui	International	Nill	1	2015A7TS 0143H	Keval Morabia

	stics					
2019	Megathon, IIIT Hyderabad	National	Nill	1	2015B5AB 0682H	Monark M oolchandan i
2019	Marketing Geeks, SJMSOM - IIT Bombay	National	Nill	1	2015B5AB 0682H	Monark M oolchandan i
2019	aSPire, SP Jain Institute of Management & Research	National	Nill	1	2015B5AB 0682H	Monark M oolchandan i
2019	Once upon a startup - E Summit, IIT Hyderabad	National	Nill	1	2015B5AB 0682H	Monark M oolchandan i
2019	MITACS Globalink	National	Nill	1	2016A3TS 0275H	Shrey Rajesh Thakker
2019	NTU India Connect Research Internship program	National	Nill	1	2016A4PS 0920H	Vidhukiran Venkataram an
2019	TopCoder Collegiate Contest 2019	National	Nill	1	2016A7PS 0121H	Ashish Gupta
2019	National Science Fo undation- Research Experience for Underg raduates	National	Nill	1	2016A7TS 0810H	Mathangi Sundar
			View File			

 5.3.2 – Activity of Student Council & representation of students on academic & administrative bodies/committees of the institution (maximum 500 words)

Student Activities Centre The Institute has a Student Activities Centre housed in a separate building where students have their union office and rooms for various activities. This building also has badminton courts, a squash court, a Table tennis room, a Health Club, an open air amphib theatre and three food outlets. Cultural and Recreational Activities There are various active student clubs: Music, Dance, Hindi Drama, English Drama, Hindi Press, English Press, Creative Activities, and Mime clubs English, Hindi Language Activity. These are entirely managed by the students. In addition, the Institute runs Recreational

Activity Forum, Photography Club, Swimming Club, and Health Club whose membership is open to students and staff. The Institute also organizes Theatre and Dance workshops. A classical music group called 'Ragamalika' aims at encouraging budding talent among the students in music and dance. It also arranges performances by leading artists in the field of classical music and dance. Recreational Activity Forum (RAF) regularly organizes film shows for the BITS community. BITS also established regional associations representing almost all Indian States conducting several special programs on festive occasions. Festivals on Campus Traditionally students organize three festivals during an academic year. BOSM (BITS Open Sports Meet) in September, a sports festival OASIS, a cultural festival in October and APOGEE (A Professions-Oriented Gathering Over Educational Experience), an Academic Festival in February thus bringing about a beautiful blend of sports, cultural and academic milieu of the campus. All the three festivals are entirely managed by students. Students Participation in Institute Activities There are four students as members of the Senate - one representing each campus, two students in the Senate-appointed Academic Counselling Board and two students in the Senate-appointed Standing Committee for Students' Discipline in each campus. NATIONAL SERVICE SCHEME The Institute has a National Service Scheme (NSS) chapter which enrolls about 220 students every year. NSS aims at developing amongst students a sense of participation in nation building through social work. The NSS volunteers of the Institute work in the surrounding villages and involve the villagers in activities like awareness camps, health camps, tree plantation drives, etc. Other activities like Blood Donation Camps, Junoon, Swachh Bharat Campaign and seminars on Right to Education are organized for the local people as well as the students. The Blood Donation Camp conducted in Feb, 2019 had a total collection of 748 units of blood. NSS has a school in campus where personality development classes are conducted for local students of Pilani. For further details, you may visit our website: http://nssbitspilani.org/ NIRMAAN Nirmaan Organization is a constructive citizen movement for an empowered India. This social Organization founded on 12th February, 2005 by a group of BITS-Pilani students, is now spread over all the BITS campuses Pilani, Hyderabad and Goa and also with full time chapters in Bengaluru and Hyderabad. Nirmaan has been phenomenal in creating greater impact in areas of educational initiatives, livelihood opportunities and socio-technological sectors. Currently the Nirmaan workforce stands at 1200 across India and corporate chapters at US, UK and Singapore.

5.4 – Alumni Engagement

5.4.1 – Whether the institution has registered Alumni Association?

Yes

BITS Alumni Association is a not-for-profit organization whose principal aim is to strengthen the ties, friendship and communication amongst students, alumni, faculty and friends of the Institute. It provides a number of channels for people to stay connected with each other and with the Birla Institute of Technology Science. Association also engages in charitable and educational activities by raising funds for setting up endowments, creating scholarships, rewarding teaching and research and generally promoting the development of resources at Birla Institute of Technology and Science at Pilani, Dubai, Goa Hyderabad campuses.

5.4.2 – No. of registered Alumni:

152542

5.4.3 – Alumni contribution during the year (in Rupees) :

53400000

5.4.4 – Meetings/activities organized by Alumni Association :

10

CRITERION VI – GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 – Institutional Vision and Leadership

6.1.1 – Mention two practices of decentralization and participative management during the last year (maximum 500 words)

BITS Pilani wishes to expand and enhance the graduate education - Masters and PhD programmes - in terms of quality and scale. A plan to restructure the academic governance to a more empowered way was envisaged as the existing divisions play a significant role in academic administration. It was felt that with passage of time, some of the existing layers of the governance framework may have become redundant. The suggested plan assumes a smooth merger of divisions such as ARD (Academic Research), ARPD (Academic Resource and Planning), ARCD (Academic Registration and Counselling), ID (Instruction) and Admissions Division with the proposed academic structure and discontinuation of the positions of Dean Admissions, Dean ARPD and Dean ARD and the associated/relevant Associate Dean positions across all campuses as needed. Two new University wide academic Deans (Academic, Undergraduate Studies - AUGS, and Academic, Graduate Studies and Research - AGSR) are proposed. Each campus will have one Associate Dean each for AUGS and AGSR. These two Deans (Academic) become the sole individuals responsible for all matters academic (UGS or GSR) they will also be covering respective agenda items during the Senate Meeting. They will work closely with the Registrar to prepare the Senate agenda and minutes as well. They will be responsible for all curriculum updates and upgrades. Reimbursable Professional Allowance for the Faculty - Allowance will be Rs. 1 L/year for Assistant Professor AL 12 or above and Rs 25,000/year for ASTP AL 10 and Visiting Faculty. Such allowance may only be used for one's professional development. Normally, 50 or more should be used to present paper at a Tier 1 or 2 conferences to be identified by departments.

6.1.2 – Does the institution have a Management Information System (MIS)?

Yes

6.2 – Strategy Development and Deployment

6.2.1 – Quality improvement strategies adopted by the institution for each of the following (with in 100 words each):

Strategy Type	Details
Admission of Students	• Based on analytics carried out on the scoring pattern for BITSAT exam of previous years, this time we updated and strengthened the FD and HD question bank of BITSAT with significant number of new questions. • We have received around 1.42 lakh applications for BITSAT in AY 2019-2020 against 3040 seats at BITS Pilani. • In order to have cultural diversity on the campus, a greater focus has been given on the admission of Internationals candidates. • Higher degree admissions were opened for the students with GATE/GPAT scores. • Admission to higher degree students based on BITS Higher degree test score as well as with GATE/GPAT score.

Industry Interaction / Collaboration	• Enhanced implementation of the unique 7.5 month mandatory University organised structured industry immersion framework - Practice School (PS). • Strengthened the feedback system to improve overall PS experience for students as well as the host organization. A new cell - Quality Assurance and Assessment Cell - was formed to enhance quality of PS student reports. • Identification assignment of domain specific faculty guides. • Skill gap courses for the benefit of students prior to PS for a few domains. • As the pandemic broke out in March 2020, the PS Division undertook several critical actions to effectively convert the ongoing PS programs into work-from-home mode using smart learning management system.
Human Resource Management	Quality Improvement strategies adopted by the Institution for the following: 1. Professional Allowance 2. Sabbatical Leave 3. Extraordinary Leave 4. Consultancy Testing Projects. 1. Reimbursable Professional Allowance for the Faculty - Allowance will be Rs. 1 L/year for Assistant Professor AL 12 or above and Rs 25,000/year for ASTP AL 10 and Visiting Faculty. 2. Sabbatical Leave - The sabbatical leave policy is intended to promote professional improvement and intellectual growth of faculty resulting in enhancing the quality of education and research at BITS.
Library, ICT and Physical Infrastructure / Instrumentation	Library is fully automated using KOHA - an open source library management software. The Web-OPAC has been made available for access from a location outside the campus. RFID enabled circulation system has been implemented and the entire book collection is made RFID tagged. The self-issue/return Kiosk facility known as Smartserve has been used for circulation purpose. The RFID security gates are helping in monitoring the issued books as well as counting the number of users visiting the library on daily basis. RFID Smartstock instrument is used in stock verification/shelf rectification and searching missing books.
Research and Development	PhD students are provisionally admitted by Institute wide admission test which consists of written test and interview. A rigorous PhD qualifying

	examination is conducted for all admitted students, which one needs to pass to continue in the doctoral programme. Regular monitoring of progress of research by Departmental Research Committee and Doctoral Advisory Committee through report presentations. At least two publications in SCOPUS- Indexed Journals/conference proceedings, is mandatory to submit PhD thesis. BITS Pilani has increased fellowship support to selected PhD students from Rs 25000/- to Rs 31000/- per month.
Examination and Evaluation	An elaborate process of review of the question papers of all courses offered by a department with the assistance of the Departmental Committee of Academics has been devised for ensuring the quality of question papers. The departments successfully completed this process by March 2019 and have also shared it with the respective course instructors.
Teaching and Learning	• Teaching workshops: about 2-3 per Year • Invited Expert lectures: about 5-6 per Department per Year • Online Tele-Presence Class Room: 01 (about 4 courses per semester) • Wireless LCD projectors: All the class rooms • All the Class rooms with Wi-Fi connections • Feedback is obtained from faculty, student, industries, practice school organizations, campus interview teams, alumni and parents. Structured feedback is collected anonymously from students regarding each course. • Departmental Committee of Academics (DCA) reviews the handouts of all courses offered by a department
Curriculum Development	Curriculum is comprehensively revised via a participatory process. Curriculum restructuring/revision /syllabus development is followed in a structured manner at BITS, Pilani. There is a Departmental Committee on Academics (DCA) in each department which normally has 5-8 faculty members from the department. Any change/modification/addition in terms of course, programme etc. is initially screened by the DCA and later with its recommendation, forwarded to the Cross Campus Committee on Academics (CCDCA). CCDCA has 2-3 members from each department at each campus which deliberates on the proposal. After

achieving consensus related to any change/modification/addition, it is presented to the Senate for its approval. There is also a comprehensive review of the curriculum and structure with the involvement of external subject experts and industry professionals every 5 years. Curriculum development is monitored and supported by the team led by Dean, Academics (UG) and Dean, Academics (PG).

6.2.2 – Implementation of e-governance in areas of operations:

E-governace area	Details
Planning and Development	Institute had setup Cisco TelePresence facility in all campuses during the year 2012-13. The facility was setup to facilitate the multi campus video conferencing and has been in extensive use. In addition to this, the institute had also setup TelePresence based classroom in each campus that is employed to conduct various courses offered by individual campuses. This facility is widely used by all the stakeholders for all the planning and developmental activities.
Administration	ERP system
Finance and Accounts	ERP system
Student Admission and Support	BITSAT an Online examination throughout the country spread over 8-10 days since 2005. Online counselling, registration and admission is fully automated and done through our in-house ERP.
Examination	During pandemic for examination used platforms such as canvas, impartus, mercer mettl

6.3 – Faculty Empowerment Strategies

6.3.1 – Teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

Year	Name of Teacher	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support
2019	Bhatia A.	2019 11th International Conference on Communication Systems and Networks, COMSNETS 2019 P Page 509	BITS Pilani through professional development fund	100000

2019	Saharan S	2019 11th International Conference on Communication Systems and Networks, COMSNETS 2019 P Page 573	BITS Pilani through professional development fund	100000
2019	Rungta A.	Proceedings – 32nd International Conference on VLSI Design, VLSID 2019 – Held concurrently with 18th International Conference on Embedded Systems, ES 2019 P Page 134	BITS Pilani through professional development fund	100000
2019	Rajput N.S.	2019 6th International Conference on Signal Processing and Integrated Networks, SPIN 2019 P Page 233	BITS Pilani through professional development fund	100000
2019	Joshi J.C	2019 6th International Conference on Signal Processing and Integrated Networks, SPIN 2019 P Page 286	BITS Pilani through professional development fund	100000
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6.3.2 – Number of professional development / administrative training programmes organized by the University for teaching and non teaching staff during the year

Year	Title of the professional development programme organised for teaching staff	Title of the administrative training programme organised for non-teaching staff	From date	To Date	Number of participants (Teaching staff)	Number of participants (non-teaching staff)
2019	University Exposure Abroad (UEA)	Nill	19/05/2019	15/08/2019	10	Nill
2019	Industry	Nill			4	Nill

		Immersion Program (IIP)		19/05/2019	31/08/2019		
2019	Nill	Performance Management Workshop with Focus on Goal Setting	11/04/2019	12/04/2019		Nill	48
2019	Nill	Workshop / Training Program for User Institutions of UGC-Canara Bank Scholarship Payment Portal	17/06/2019	17/06/2019		Nill	1
Nill	Nill	Certification Training on Structured Cabling as per the EIA/TIA Standards	02/07/2019	03/07/2019		Nill	3
Nill	Nill	Training Program on Use of EAT Module of PFMS	13/08/2019	14/08/2019		Nill	1
Nill	Nill	Understanding of Cisco Telepresence Facility	21/09/2019	21/09/2019		Nill	1
Nill	Nill	Olympus FV Confocal User Meet	18/11/2019	19/11/2019		Nill	1

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6.3.3 – No. of teachers attending professional development programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes during the year

Title of the professional development programme	Number of teachers who attended	From Date	To date	Duration
SEER (Sharing Experience and Educational	3	31/01/2019	31/01/2019	1

Research) 1				
SEER (Sharing Experience and Educational Research) 2	2	28/02/2019	28/02/2019	2
SEER (Sharing Experience and Educational Research) 3SEER (Sharing Experience and Educational Research) 3	2	26/08/2019	26/08/2019	1
SEER (Sharing Experience and Educational Research) 4	2	24/08/2019	24/08/2019	1
Essay Writing Event	5	14/02/2019	05/04/2019	50
Student led Classes for Teachers' Day	14	10/09/2019	10/09/2019	1
Intensive Teaching Workshop 1	12	25/07/2019	26/07/2019	2
Intensive Teaching Workshop 2	10	20/08/2019	20/08/2019	1
Intensive Teaching Workshop 3	12	22/08/2019	26/08/2019	4
Ph.D. Scholars Workshop	15	07/09/2019	07/09/2019	1
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6.3.4 – Faculty and Staff recruitment (no. for permanent recruitment):

Teaching		Non-teaching	
Permanent	Full Time	Permanent	Full Time
76	Nill	55	30

6.3.5 – Welfare schemes for

Teaching	Non-teaching	Students
Research Initiation Grant, Seed Grant Scheme, Chair Professorship, OPERA Award, Relocation Allowance Computer Equipment Replacements, Professional Development Allowance, Sabbatical Leave, Extra Ordinary	Retrial Benefits as per applicability i.e. PF, EPS and Gratuity, Accommodation, Medical Benefits Fee Scholarship, LTC, Loan i.e. Furniture, Housing, Computer, Vehicle and PF, Leave – CL, HPL, Hospital and	institute merit Scholarship for 3 Students Institute Merit Cum-Need Scholarship for 27 Students BITSAA Scholarship for 1 students approximately Student Aid Fund for financial weaker Students

Leave, Industry Immersion Scheme, University Immersion Scheme, Retrial Benefits as per applicability i.e. PF, EPS and Gratuity, Accommodation, Medical Benefits, Fee Scholarship, LTC, Loan i.e. Furniture, Housing, Computer, Vehicle and PF, Leave - CL, HPL, Hospital and Summer Vacation, Maternity Leave for Female employees	Summer Vacation, Maternity Leave for Female employee	on their request mediclaim for every students

6.4 – Financial Management and Resource Mobilization

6.4.1 – Institution conducts internal and external financial audits regularly (with in 100 words each)

Yes, institution conducts internal and external regularly.

6.4.2 – Funds / Grants received from management, non-government bodies, individuals, philanthropies during the year(not covered in Criterion III)

Name of the non government funding agencies /individuals	Funds/ Grnats received in Rs.	Purpose
As per attached list	51700000	As per attached list
View File		

6.4.3 – Total corpus fund generated

76958891

6.5 – Internal Quality Assurance System

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

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	Academics experts from IITs and Industries	Yes	Department committee of academics regularly conducts internal audit of curriculum
Administrative	Yes	SR Battliboi and Associates LLP (Financial Audit)	Yes	Aneja Management Consultants Pvt Ltd (Financial Audit)

6.5.2 – What efforts are made by the University to promote autonomy in the affiliated/constituent colleges? (if applicable)

Unitary University, No affiliated college

6.5.3 – Activities and support from the Parent – Teacher Association (at least three)

Not Applicable

6.5.4 – Development programmes for support staff (at least three)

Excel Training Program (Beginner Intermediate stage) Workshop on Labour Contract Compliance Certification Course on Basic Life Support High Impact Presentation Skills Solid works software training Advance Course on Electrical Safety, Electrical Safety Audit and Risk Management. Fire Safety Training

6.5.5 – Post Accreditation initiative(s) (mention at least three)

The strategic exercise, christened as Project "Lakshya" (with support from Boston Consulting Group) is now in implementation phase, with focus on 5 thrust areas: 1. Research 2. Faculty 3. Programs Pedagogy 4. WILP Industry Connect 5. Alumni Relations. The thrust areas, each led by senior leader, have set themselves goals that would strengthen and enhance BITS' position amongst global science and technology institutions.

6.5.6 – Internal Quality Assurance System Details

a) Submission of Data for AISHE portal	Yes
b)Participation in NIRF	Yes
c)ISO certification	No
d)NBA or any other quality audit	No

6.5.7 – Number of Quality Initiatives undertaken during the year

Year	Name of quality initiative by IQAC	Date of conducting IQAC	Duration From	Duration To	Number of participants
2019	SEER (Sharing Experience and Educational Research) 3	26/08/2019	26/08/2019	26/08/2019	500
2019	Intensive Teaching Workshop 2	20/08/2019	20/08/2019	20/08/2019	400
2019	Intensive Teaching Workshop 3	22/08/2019	22/08/2019	26/09/2019	500
2019	SEER (Sharing Experience and Educational Research) 4	24/09/2019	24/09/2019	24/09/2019	600
2019	Student led Classes for Teachers' Day	10/09/2019	10/09/2019	10/09/2019	100
2019	Ph.D. Scholars Workshop	07/09/2019	07/09/2019	07/09/2019	78
2020	TLC Goa Conference 2020	13/02/2021	13/02/2020	15/02/2020	250

CRITERION VII – INSTITUTIONAL VALUES AND BEST PRACTICES

7.1 – Institutional Values and Social Responsibilities

7.1.1 – Gender Equity (Number of gender equity promotion programmes organized by the institution during the year)

Title of the programme	Period from	Period To	Number of Participants	
			Female	Male
Understanding LGBTQI issues and Diversity & Inclusion	13/11/2019	13/11/2019	40	60
Reflections on the Touchstone of Sexual Violence and #MeToo"	01/02/2020	01/02/2020	100	120

7.1.2 – Environmental Consciousness and Sustainability/Alternate Energy initiatives such as:

Percentage of power requirement of the University met by the renewable energy sources
18

7.1.3 – Differently abled (Divyangjan) friendliness

Item facilities	Yes/No	Number of beneficiaries
Physical facilities	Yes	Nill
Provision for lift	Yes	Nill
Ramp/Rails	Yes	Nill
Rest Rooms	Yes	Nill

7.1.4 – Inclusion and Situatedness

Year	Number of initiatives to address locational advantages and disadvantages	Number of initiatives taken to engage with and contribute to local community	Date	Duration	Name of initiative	Issues addressed	Number of participating students and staff
2019	1	Nill	01/08/2019	365	Disha	Educational field	200
2019	1	Nill	01/08/2019	365	Gyan Bodh	Educational field	200
2019	1	Nill	01/08/2019	365	School Adoption Program (SAP)	To develop the infrasructure in nearby Governmen	200

						t Schools	
2019	1	Nill	01/08/2019	365	Shiksha Ki Ore (SKO)	Shiksha ki Ore, one of our projects at BITS Pilani chapter has been through a phenomenal transformation where our volunteers changed the fate of one nearby slum, Natbasthi in 2.5 years. Once known for its abundant supply of child laborers, the basti	200
2019	1	Nill	01/08/2019	365	Utkarsh scholarship	With the help of Utkarsh scholarship program, 29 meritorious students are continuing their study.	200
2019	1	Nill	01/08/2019	15	Unnati-1	The goal of our project is to empower women, by providing education, teaching	200

							them new skills, giving them a sustainable livelihood and in turn making them financially independent. We have two centres. At one, we have vocational training courses for	
2019	1	Nill	01/02/2019	15	Unnati-1	We took steps to establish Unnati 2 as a Self-Help Group. We are just a step or two away from becoming one work will continue once the semester resumes	200
2019	1	Nill	01/08/2019	365	Participatory Community Development (PCD)	Participatory Community Development (PCD) aims to understand the community and identify local leaders who will take up the work of developing	200

							their villages	
2019	1	Nill	12/10/2019	7	Joy of Giving Week	Based on the theme "Turn the Frown Upside Down", "Joy of Giving Week" or "Daan Utsav" or "Festival of Giving" is held in all the BITS Pilani campus every year, a unique, week-long festival of giving-money, time, skills or resources, thereby fulfilli	200	
2019	1	Nill	07/09/2019	5	Junoon	Junoon is an event that gives a platform to the specially-abled to showcase their talent to the more privileged section of society to reinstate the fact Everybody is Equal	200	

7.1.5 – Human Values and Professional Ethics Code of conduct (handbooks) for various stakeholders		
Title	Date of publication	Follow up(max 100 words)
Guidelines For Dealing With Student Indiscipline And Misconduct Cases	15/11/2014	It may be mentioned that perfect standardization may not be feasible especially in discipline related matters as nature of the cases differ, intensity of involvement may differ from student to student in same or similar cases and gravity associated with year in which student is studying. It takes lot of effort on the part of the Disciplinary Committee to clearly identify the involvement of each student in a given case of indiscipline. It is asserted that wherever clear identification of involvement of a student in specific case of indiscipline gets established, almost similar approach to rectification and/or punishment are suggested.
Revised Guidelines for the award of punishment to unfair means cases (On campus programs)	22/01/2019	Five categories of offence has been identified and corresponding punishments are specified
Conduct Rules for employees	01/03/2008	Conduct rules for employees of the Institute have been specified in memorandum of association, Rules and regulations.

7.1.6 – Activities conducted for promotion of universal Values and Ethics			
Activity	Duration From	Duration To	Number of participants
HSS F343: Professional Ethics	01/08/2019	31/07/2020	331
HSS F345: Gandhian Thoughts	01/08/2019	31/07/2020	81
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7.1.7 – Initiatives taken by the institution to make the campus eco-friendly (at least five)

1. Energy conservation • Use of Energy Efficient Equipment • Insulation of Hot Water Pipes • Dual Layered Glass to prevent Green House Effect • Use of CFL/LED and Energy Rated equipment's and fixtures • Master Switches for each Room to shut down power of entire room when not in use • CRT monitors being replaced with LCD/LED Monitors • Thermostat controlled cooling system 2. Use of renewable energy: Solar Powered Street Lighting Solar Powered Water Heating System for Hostels. 1000KW Roof Top Solar Power Plant is operational in the Campus, which helps in saving the electrical energy. 3. Water harvesting- • New Academic Block is equipped with Rain Water Management System with Channelized Drain Pipe Network, Rain Water Holding Tank, Pumps and Ground Water Recharge Pits. • Approx. 2km of Storm Water Drain Line is also provided with four rain water recharge pits • Rain Water Harvesting Recharge Pits are provided at numerous locations of the campus. 4. Efforts for Carbon neutrality- Tree plantation is carried out to achieve carbon neutrality to cover the most open areas. Institute residents are encouraged to use cycle as a transport medium within the campus. All the wastes generated in the campus are taken care of as per norms. Decrease in electrical usage by substitution with renewable sources of energy. Four small Electrical Loader vehicle were added on to the inventory for Wet garbage collection (02 nos.) and transportation of material (02 nos.) within the Campus thereby reducing the carbon footprint. 5. Plantation – Entire campus has approx. 12,000 trees and various types of plantation. About 150 acres of land in the campus is under landscape and natural plants. In 2018 1300 sapling of various types of tree were planted to increase the green cover or to replace the deceased plants in the Campus. 6. Hazardous waste management – This factor has been taken care of in an adequate manner to provide an eco-friendly environment within the campus. 7. E-waste management - e-waste generated is collected and sent either to an e-waste dealer or to the collection point prescribed by pollution board.

7.2 – Best Practices

7.2.1 – Describe at least two institutional best practices

The curriculum and the educational process are distinguished by various flexibilities that enable worthy educational goals to be met: • A fairly unique flexibility is the dual degree programme that permits a student to pursue two first degrees concurrently, typically an engineering degree with a science degree. • Other features include the crafting of an individual timetable, the possibility of transfer from one programme to another, the option of enrolling in a minor programme, control over the pace of progress through the programme, project courses that provide for independent study and investigation, the choice of a thesis as an option to Practice School, and the concept of open electives. Industrial and material welfare of the nation is an object of the Institute, and the importance of practice in education is a core belief: • BITS has been offering the program called Practice School, as a part of the curriculum since 1973. This enables a student to spend up to 7.5 months carrying out internship in industry, working under the supervision of faculty and industry experts, and earning academic credit. In the academic year 2018-19, over 5800 students underwent the Practice School programme in over 500 organizations, with 220 faculty members supervising. Direct industry support to students by way of stipend was Rs. 51 crores, and over 680 placement offers resulted. • BITS has been Work Integrated Learning Programmes (WILP) since 1979. Contextualized for the workplace, these formal continuing education programmes are offered in partnership with the employing industry, enabling working professionals to upgrade their knowledge and skills in domains directly relevant to their careers and Industry sectors. Emphasis is place on all round development of students: • The curriculum is broad based, with a common Institutional foundational requirement, and a requirement of a minimum number of units from courses in the Humanities and Social Sciences (for students of

science and engineering) as electives. • Students enjoy complete autonomy in managing their co-curricular and extra-curricular activities. • Students participate in various Institutional activities, and are members of various bodies including the Senate. • Opportunities for students to develop and hone their entrepreneurial capabilities. Emphasis on harnessing the power of emerging technologies in instruction and education management: • In 2005, the first online entrance test of its kind in the nation, BITSAT, was introduced. • In 2012, high definition telepresence videoconferencing was deployed, connecting all four campuses, and enabling offering of courses across campuses, faculty selection, and various committee meetings. • Full scale ERP has been implemented integrating student life cycle, finance and HR processes. • Learning Management Systems (LMS), synchronous teaching platforms (virtual classrooms), and Virtual and Remote Laboratories are used extensively, especially in the programmes for working professionals. Performance Monitoring, Strategic Planning and University Review: University Review A 3-person Review Council comprising the Vice-Chancellor, Advisor to Chancellor and EA to Chancellor, conducts performance review at university and campus levels with the objectives of: 1. Continuously improve all critical academic and non-academic processes leading to continuous improvement in the Institute's reputation 2. Grow in a quality way and ensure the Institute remains financially sustainable 3. Rapidly contemporize every aspect of its way of working Campus Review focuses on the following: • Achievements of their departments • Aspirations and Excellence across key metrics selected by them • Resources that they will required to achieve their aspirations across these These reviews provides insight on areas which has worked properly it also gets the attention of the areas which needs the special attention. Project Lakshya BITS initiated a Strategic Planning exercise called Project Lakshya with support from the Boston Consulting Group. Key actions undertaken were: 1. Detail out, refine and refresh the specifics of the strategy to achieve the vision 2. Revised Guidelines of IQAC and submission of AQAR Page 4 3. Define and create alignment on the action plans and goals/ targets 4. Bring the faculty and staff fully on board with the plan 5. Detail out the financial plan in light of the strategy Following five focus areas were identified for this year to work on: 1. Research Innovation 2. Programs, Curriculum, Pedagogy and Quality Assurance 3. Faculty 4. Industry Connect 5. Alumni Relations Entrepreneurship Education New Venture Creation is a unique course being offered at BITS Pilani that enables students to graduate as job givers than job takers/seekers. The purpose of this course is to not teach entrepreneurship but to create entrepreneurs. The course enables the student start-ups, mostly technology based, to grow by providing the building blocks for creating an enterprise using the lean start up method. By providing students with the tools to take their ideas to the market this one semester course is able to convert more than 10 of the ideas to real start-ups. As a key differentiator, the course collaborates with large number of BITSian entrepreneurs as well as several non-BITSian entrepreneurs and investors. Some of the Startups that are doing well in the market are: 1. Framebench (FreshDesk) 2. Tunepatrol 3. Sattva Medtech 4. Thinkerbell Labs 5. Prokure 6. Nyrvana Stock Solutions 7. cubito.in 8. Recopro 9. Drone Nation 10. Hitchtag In order to create a successful startup, student entrepreneurs are required to address various issues in startup creation: market research, competitor analysis, customer development, technology viability, product development, marketing amp sales strategy, team formation, legal compliance and fund raising. Interactive sessions with entrepreneurs across the globe are supplemented with faculty facilitated hands-on workshop sessions to work on creating deliverables like elevator pitch, business model canvas and minimum viable product. Offered through the special Tele-Presence Classroom facility connecting all BITS Campuses, the sessions are able to connect virtually with speakers across the globe. Each team is assigned an experienced entrepreneur as mentor who guides them through the semester and

beyond. The teams compete with each other and the top teams are awarded seed funding to pursue the business idea for incubation after the completion of the course and eventually to launch the business. Library http://library.bits-pilani.ac.in/ Sandbox https://www.facebook.com/SandboxBPGC/

Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link

http://library.bits-pilani.ac.in/

7.3 – Institutional Distinctiveness

7.3.1 – Provide the details of the performance of the institution in one area distinctive to its vision, priority and thrust in not more than 500 words

BITS Pilani views education as a continual engagement and experience, and ensures that the learning experience is integrated seamlessly not only across its classrooms and laboratories, but also in the industry, as exemplified by its Work Integrated Learning Programmes (WILP) and Practice School (PS). WILP enables Employed professionals to pursue programs at BITS while they are working whereas Practice School (PS) is an innovation seeking to link industry experience with university instruction for students studying at the different campuses of BITS. Performance details for Academic Year 2019 (1st Aug, 2019 to 31st July 2020) for both are given below: WILP: ? Launch of new programmes specializations in view of trends indicating rapid digital transformation of businesses across many Industry sectors: The advent of 4th Industrial Revolution or Industry 4.0 has catalyzed a major surge in demand for workforce development programmes to enable existing employees learn new age digital technologies. BITS Pilani responded to this need by offering many new M.Tech MBA programmes and also many new specialization tracks in areas like Business Analytics, FinTech, Automotive Electronics, Digital Manufacturing, Data Analytics, Security, Networks cloud and Embedded Systems. ? Significant Augmentation of Experiential Learning in WILP: WILP makes Extensive use of virtual laboratories, remote laboratories, simulations, and case studies for effective experiential learning. A major augmentation of WILP's experiential learning capacity was undertaken by addition of several new remote labs in areas such as ADAS, Automotive Cyber systems, Industrial IOT, Vehicle dynamics, Augmented reality etc. ? Asynchronous Learning Content Development: BITS Pilani has a state-of-the-art recording studios in its campuses to record high quality video content, which is supplemented by rich animation and multimedia content. Engaging content for many new courses was developed that further augmented WILP's rich repository of digital content. PS: ? Launch of many Quality Improvement initiatives to achieve enhanced learning outcomes for the students: This included set up of a Quality Assurance and Assessment Cell" to focus on enhancing the outcomes and also capture regular feedback. Additionally increased involvement of faculty with expertise in domains relevant to the PS projects also significantly enhanced the learning experience. ? Launch of Customized Pre-PS deployment preparatory programmes for students: To ensure that the students are fully equipped to maximize their learning during PS, many specific customized preparatory modules were launched delivered by BITS. These modules were designed keeping in view the domain and specific processes the student will work on during his/her PS deployment at specific organizations. The primary focus was to providing prerequisite knowledge or filling of any priority skill gap before a student begins the PS. ? Innovated a Remote PS model to meet the unprecedented challenge posed by the Pandemic: The pandemic challenge was met by evolving a Unique Remote PS Model in close cooperation with the Industry Partners and by adopting technology enabled Learning Management Systems. Model ensured that both the students and the Industry partners could continue to participate seamlessly in the PS ecosystem without any disruption in education continuity.

Provide the weblink of the institution
https://www.bits-pilani.ac.in/

8.Future Plans of Actions for Next Academic Year

8. Future Plans of action for next academic year (500 words) BITS Pilani hires potential candidates for its faculty positions dominantly from the overseas. This is one of the IoE mandates. Faculty recruitment advertisements are put up in international society journals and periodicals of great repute, viz. ACM (Association for Computing Machinery), SIAM (Society for Industrial and Applied Mathematics) especially in the area of Computer Science and Mathematics. Seeing the success rate of these efforts, we plan to go for more such drives for various other disciplines. BITS Pilani also has been actively participating in faculty hiring events organized by the US-based Sci-ROI (https://sciroi.net/) since last three years which hosts large multi-day gatherings at University of Chicago. BITS has participated in the in-person mode (a delegation led by the VC attended and interviewed prospective faculty over there for days) and lately in the virtual mode. These efforts have helped us with an increased percentage of qualified faculty members having exposure in overseas institutes of repute. Expansion Plan Our plans to upgrade the physical infrastructure in the three Indian campuses are taking shape across all our campuses. Project Parivartan across Pilani, Goa and Hyderabad campuses envisages an investment of about Rs. 1450 Cr to build new buildings or renovate existing academic spaces and housing for students, faculty and staff. Following are the Campus wise progress for AY 2019-20: Pilani • Renovation and augmentation of Krishna Bhawan KG Mess were completed and handed over. • 64 flats of Faculty housing renovated and handed over • 24 flats of D2 type houses handed over • Renovation of Meera Bhawan 5 6 (Girls Hostel) were handed over • Infra Cluster 5 Cluster 6 were handed over • Renovation of Sankar Bhawan handed over • FD1 Academic Block handed over • Johnsons Control Lab in Dept of Mechanical Engg created and handed over. Hyderabad • New Academic Block (B C) with 11 classrooms, 15 labs 125 faculty rooms handed over • New Academic Block (A D) with 11 classrooms, 9 labs 81 faculty rooms handed over • Hostel HB 09 with 778 beds handed over • FH 04, 04,05 06 handed over • Married PhD Students' hostel comprising 64 flats handed over Goa • 2 boys hostel of 200 beds handed over • New Academic Block – Phase 1 and Phase 2 handed over.