

# ANNUAL QUALITY ASSURANCE REPORT 2016-17



**BITS Pilani**

Pilani | Dubai | Goa | Hyderabad



**SUBMITTED TO NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC)  
BANGALORE – 560072**



Revised Guidelines of IQAC and submission of AQAR

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## The Annual Quality Assurance Report (AQAR) of the IQAC

All NAAC accredited institutions will submit an annual self-reviewed progress report to NAAC, through its IQAC. The report is to detail the tangible results achieved in key areas, specifically identified by the institutional IQAC at the beginning of the academic year. The AQAR will detail the results of the perspective plan worked out by the IQAC. (Note: The AQAR period would be the Academic Year. For example, July 1, 2012 to June 30, 2013)

### Part – A

AQAR for the year (for example 2013-14)

2016-17

#### 1. Details of the Institution

1.1 Name of the Institution

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI

1.2 Address Line 1

VIDYA VIHAR

Address Line 2

JHUNJHUNU DIST.

City/Town

PILANI

State

RAJASTHAN

Pin Code

333031

Institution e-mail address

registrar@pilani.bits-pilani.ac.in

Contact Nos.

+91-1596-515298

Name of the Head of the Institution:

PROF. SOUVIK BHATTACHARYA  
(Vice-Chancellor-BITS,Pilani)

Tel. No. with STD Code:

+91-1596-515247

Mobile:

Name of the IQAC Co-ordinator:

Mobile:

IQAC e-mail address:

1.3 NAAC Track ID (For ex. MHCOGN 18879)

1.4 NAAC Executive Committee No. & Date:   
(For Example EC/32/A&A/143 dated 3-5-2004.  
This EC no. is available in the right corner- bottom  
of your institution's Accreditation Certificate)

1.5 Website address:

Web-link of the AQAR:

For ex. <http://www.ladykeanecollege.edu.in/AQAR2016-17.doc>

#### 1.6 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 <sup>st</sup> Cycle	A*****	-	07/02/2000	5 years
2	2 <sup>nd</sup> Cycle	A	3.71	29/01/2009	5 years
3	3 <sup>rd</sup> Cycle	A	3.45	16/12/2016	5 years
4	4 <sup>th</sup> Cycle				

1.7 Date of Establishment of IQAC : DD/MM/YYYY

1.8 AQAR for the year (for example 2010-11)

1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((for example AQAR 2010-11 submitted to NAAC on 12-10-2011)

i. AQAR \_\_\_\_\_ N.A. \_\_\_\_\_ (DD/MM/YYYY)

1.10 Institutional Status

University State  Central  Deemed  Private

Affiliated College Yes  No

Constituent College Yes  No

Autonomous college of UGC Yes  No

Regulatory Agency approved Institution Yes  No

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education  Men  Women

Urban  Rural  Tribal

Financial Status Grant-in-aid  UGC 2(f)  UGC 12B

Grant-in-aid + Self Financing  Totally Self-financing

1.11 Type of Faculty/Programme

Arts  Science  Commerce  Law  PEI (Phys Edu)

TEI (Edu)  Engineering  Health Science  Management

Others (Specify)

PHARMACY

1.12 Name of the Affiliating University (for the Colleges)

N.A.

1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University

DEEMED UNIVERSITY

University with Potential for Excellence

-

UGC-CPE

-

DST Star Scheme

-

UGC-CE

-

UGC-Special Assistance Programme

-

DST-FIST

19

UGC-Innovative PG programmes

-

Any other (*Specify*)

-

UGC-COP Programmes

-

## 2. IQAC Composition and Activities

2.1 No. of Teachers

10

2.2 No. of Administrative/Technical staff

-

2.3 No. of students

1

2.4 No. of Management representatives

1

2.5 No. of Alumni

1

2.6 No. of any other stakeholder and  
community representatives

1

2.7 No. of Employers/ Industrialists

2

2.8 No. of other External Experts

1

2.9 Total No. of members

17

2.10 No. of IQAC meetings held

5

2.11 No. of meetings with various stakeholders: No.  Faculty   
Non-Teaching Staff Students  Alumni  Others

*\*Please refer Annexure 1 for details*

2.12 Has IQAC received any funding from UGC during the year? Yes  No   
If yes, mention the amount

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos.  International  National  State  Institution Level

(ii) Themes

*\*Please refer Annexure 2 for details*

2.14 Significant Activities and contributions made by IQAC

IQAC contributed through planned interaction among various stake holders in the institute where by quality aspects are highlighted, suggestions for improvements are gathered and participative discussion are promoted.

IQAC members have made various suggestions, recommendations on the following matters.

- Academic improvement and curricular development and course structure
- Enhancing research activities, modes of enhancing external funding for research
- Industry collaborations and faculty immersion programs
- Student placements and quality of placement
- Outcome based learning objectives promoted
- Through activities of Teaching Learning Center\*
- Through activities of Intensive Teaching Workshop\*

*\* Please refer Annexure 7 for details*

## 2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year \*

Plan of Action	Achievements
<p>1. IQAC recommended the change in wordings of the outcomes of examiner report during evaluation of Ph.D thesis.</p> <p>2. Changes in the Open Book Evaluation Components</p> <p>(a) For First Degree Courses- 20% Evaluation component must be open book.</p> <p>(b) For Higher degrees – Including at least 40% of evaluation components that are Open book.</p> <p>IQAC recommended inclusion of the following possibilities under the Open book component For Higher Degree Courses: include two or more research-oriented activities (Literature Survey, Seminars/ Presentations/ Research Summaries, Design/ Development of processes/ products/ artifacts, Experimental or Quantitative Analysis of processes/ products/ phenomena, Design of Experiments etc.)</p> <p>3. IQAC recommended that expert feedback received during program evaluations undertaken by ARP should be given cognizance and curriculum improvements should be made.</p> <p>Accordingly,</p> <p>a) Inclusion of some additional courses in the Pool of Discipline electives for (i) M. Sc. Mathematics (ii) M.Sc. Physics ,(iii) M. Sc Economics (iv) B.E. Mechanical Engineering (v) M.E. Civil and Specialization in Infrastructure Engineering and Management , (vi) M.E . Design Engineering and (vii) M.E Software Systems</p> <p>b) Change in Core Course for M.E. Communication Engineering.</p>	<p>This was approved in the 114<sup>th</sup> Research Board meeting and presented in 179<sup>th</sup> Senate.</p> <p>Approved in 179<sup>th</sup> Senate Meeting</p> <p>Approved in 179<sup>th</sup> Meeting of senate</p>

\* Please refer Academic Calendar of the year as **Annexure 3**



2.15 Whether the AQAR was placed in statutory body      Yes       No

Management       Syndicate       Any other body

Provide the details of the action taken

Every functional Department heads are sensitised about the importance of data collection and verification for AQAR.

The Management understands the importance of AQAR and would prepare AQAR every year and would be submitting to NAAC.

## Part – B

### Criterion – I

#### 1. Curricular Aspects

1.1 Details about Academic Programmes (*for details please refer Annexure 4*)

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	All disciplines	-	-	All disciplines
PG	18	-	-	18
UG	10	-	-	9
PG Diploma	-	-	-	-
Advanced Diploma	-	-	-	-
Diploma	-	-	-	-
Certificate	-	-	-	-
Others	6	-	-	-
<b>Total</b>	33	-	-	33

Interdisciplinary	-	-	-	-
Innovative	-	-	-	-

1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options

(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	All UG and PG programmes
Trimester	Nil
Annual	Nil

1.3 Feedback from stakeholders\* Alumni  Parents  Employers  Students   
(*On all aspects*)

Mode of feedback : Online  Manual  Co-operating schools (for PEI)

\* Please refer to *Annexure 5* for details

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

BITS Pilani is a deemed University and changes in curriculum, introduction of new courses and improvements in pedagogy are regularly brought forward by the departments and are incorporated after approval by the senate. There is also comprehensive review of curriculum and structure with involvement of external subject experts and industrial persons every 5 years.

1.5 Any new Department/Centre introduced during the year. If yes, give details.

NA

## Criterion – II

### 2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty

Campus	Grand Total	Asst. Professors	Associate Professors	Professors	Others
Pilani	227	143	51	29	4
Goa	127	79	34	12	2
Hyderabad	145	87	41	15	2
Dubai	60	28	13	18	1
<b>Grand Total</b>	<b>559</b>	<b>337</b>	<b>139</b>	<b>74</b>	<b>9</b>

2.2 No. of permanent faculty with Ph.D.

537

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
39	-	3	-	1	-	19	-	62	-

2.4 No. of Guest and Visiting faculty and Temporary faculty

-

15

107

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended	88	161	4
Presented papers	74	177	4
Resource Persons	-	4	-

## 2.6 Innovative processes adopted by the institution in Teaching and Learning:

- Teaching Learning Center (TLC) activities
- Intensive Teaching Workshop (ITW) for all newly joined faculty members
- Continuous Feedback System
- Continuous Evaluation
- Return of evaluated copies of all examinations
- Display of Model Solution of every test paper along with marking scheme
- Recording and distribution of classroom lectures
- A few courses are offered on Moodle platform in flip class room mode
- Video content developed for Laboratory experiments and for a few courses.

*Refer Annexure 6 for details regarding activities under TLC & ITW*

## 2.7 Total No. of actual teaching days during this academic year

Pilani	Hyderabad	Goa	Dubai
184	181	171	200

## 2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

- Institute has mandatory 20 % minimum evaluation component in open book format.
- Evaluated answer scripts of all the examinations are returned back to the students
- Students can apply for recheck without any additional fee. Complete transparency and uniformity is ensured
- There is a provision of grade scrutiny also after the final grade has been awarded
- Institute has efficient in house reprographic facilities for production of question papers ensuring complete confidentiality.
- There is a provision to conduct online multi choice question based examinations using Moodle and most courses make use of this facility.
- Model answer of each evaluation component made available to the students

2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop

All faculty members are empowered to participate in curricular development exercise. 250 faculties as member of Senate are involved in the highest level of decision making regarding curriculum and structure revision.

2.10 Average percentage of attendance of students

At the three Indian campuses of BITS Pilani, there is no mandatory minimum number of attendance requirements however attendance is maintained for the purpose of record. There is requirement of 75% minimum attendance at BITS Pilani Dubai campus in first year and 60% in subsequent years.

UG	PG	PhD
60% To 70%	80% To 90%	90% To 100%

2.11 Course/Programme wise distribution of pass percentage:

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
*						

\* Please refer to **Annexure 7** for details

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

Many proposals of the IQAC have been placed before the statutory authorities of the universities for implementation. Few representative examples of these include curriculum review and expert committee visits to assess all discipline programmes across departments, increase in assignment based and open book components in curriculum and fine grained grading of students, strengthening of faculty and course feedback systems, establishment of teaching learning centre, etc.

2.13 Initiatives undertaken towards faculty development

<b>Faculty / Staff Development Programmes</b>	<b>Number of faculty benefitted</b>
Refresher courses	-
UGC – Faculty Improvement Programme	7 (Please. refer <b>Annexure 8 A</b> for details)
HRD programmes	11 (Please. refer <b>Annexure 8 B</b> for details)
Orientation programmes	20 (Please. refer <b>Annexure 8 B</b> for details)
Faculty exchange programme	-
Staff training conducted by the university	6 (Please. refer <b>Annexure 8 C</b> for details)
Staff training conducted by other institutions	

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Summer / Winter schools, Workshops, etc.	<i>(Please. refer Annexure 8 C for details)</i>
Others	

#### 2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	1085	0	74	NA
Technical Staff				

### Criterion – III

#### 3. Research, Consultancy and Extension

##### 3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

To transform BITS into a research led university and to enhance the research outputs of the university, several measures have been placed by IQAC before the Statutory authorities to be implemented: include recruitment of research focused faculty, introduction of research initiation grant , competitive research initiation grants, seed grants, OPERA awards for new faculty and Chair Professorships to senior faculty, increase of Professional allowance for faculty to the tune of 1 lakh/annum, introduction of Part Time Ph.D programme, revamping of Ph.D course structure , introduction of provision of co-supervisor ships, giving letter grades to thesis/Dissertation to encourage undergraduate/graduate research activities, etc.

##### 3.2 Details regarding major projects (Please refer to **Annexure 9** for details)

<u><b>Pilani Campus</b></u>	Completed	Ongoing	Sanctioned	Submitted
Number	18	31	30	124
Outlay in Rs. Lakhs	400.67	1108.69	1042.07	3930.77

<u><b>Goa Campus</b></u>	Completed	Ongoing	Sanctioned	Submitted
Number	12	21	35	32
Outlay in Rs. Lakhs	314.61	789.09	1608.64	3201.73

<u><b>Hyderabad Campus</b></u>	Completed	Ongoing	Sanctioned	Submitted
Number	19	53	17	81
Outlay in Rs. Lakhs	652.395	1618.31446	55.31	212.5

##### 3.3 Details regarding minor projects (**Pilani,Goa,Hyderabad**)

	Completed	Ongoing	Sanctioned	Submitted
Number	3, 1, 9	2, 7, 5	8, 5, 11	6, 8, 9
Outlay in Rs. Lakhs	13.44, 0.75, 53.6	6.25, 22.86, 2.28	23.72, 33.15, 51	28.37, 48,49

##### 3.4 Details on research publications

	International	National	Others
Peer Review Journals	701	76	Nil
Non-Peer Review Journals	Nil	Nil	Nil
e-Journals	Above publications are also available electronically		
Conference proceedings	379	409	Book Chapter-19 Erratum-03 Editorial- 03 Letter-01

For details please refer **Annexure 10 A & 10 B**

3.5 Details on Impact factor of publications:

Range  Average  h-index  Nos. in SCOPUS

For details please refer *Annexure 11*

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

(\*in lacs)

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	1-3	various	2919.84	1380.17
Minor Projects	1-2	various	101.23	38.03
Interdisciplinary Projects	1-3	various	7916.93	527
Industry sponsored	1-2	various	658.08	415.36
Projects sponsored by the University/ College	1-2	various	174.12	174.12
Students research projects <i>(other than compulsory by the University)</i>		-	-	-
Any other(Specify)		-	-	-
Total			11770.2	2534.68

For details please refer *Annexure 12*

3.7 No. of books published i) With ISBN No.  Chapters in Edited Books

ii) Without ISBN No.

3.8 No. of University Departments receiving funds from

UGC-SAP  CAS  DST-FIST   
DPE  DBT Scheme/funds

3.9 For colleges Autonomy  CPE  DBT Star Scheme   
INSPIRE  CE  Any Other (specify)

3.10 Revenue generated through consultancy :( in lacs) (Pilani, Goa, Hyderabad)

Level	International	National	State	University	College
Number	5	32	1	17	-
Sponsoring agencies	Various	Various	Various	Various	-



3.11 No. of conferences organized by the Institution

*For details refer Annexure 13*

3.12 No. of faculty served as experts, chairpersons or resource persons

3.13 No. of collaborations International  National  Any other

3.14 No. of linkages created during this year

3.15 Total budget for research for current year in lakhs:

From Funding agency  From Management of University/College

Total

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	9
	Granted	1
International	Applied	0
	Granted	0
Commercialised	Applied	0
	Granted	0

*For details refer Annexure 14*

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	Dist	College
60	14	46	-	-	-	-

3.18 No. of faculty from the Institution who are Ph. D. Guides   
and students registered under them

*For details refer Annexure 15 A & 15 B*

3.19 No. of Ph.D. awarded by faculty from the Institution

*For details refer Annexure 16*

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF  SRF  Project Fellows  Any other

3.21 No. of students Participated in NSS events:

University level	<input type="text" value="73"/>	State level	<input type="text" value="-"/>
National level	<input type="text" value="-"/>	International level	<input type="text" value="-"/>

3.22 No. of students participated in NCC events:

University level	<input type="text" value="-"/>	State level	<input type="text" value="-"/>
National level	<input type="text" value="-"/>	International level	<input type="text" value="-"/>

3.23 No. of Awards won in NSS:

University level	<input type="text" value="-"/>	State level	<input type="text" value="-"/>
National level	<input type="text" value="1"/>	International level	<input type="text" value="-"/>

3.24 No. of Awards won in NCC:

University level	<input type="text" value="-"/>	State level	<input type="text" value="-"/>
National level	<input type="text" value="-"/>	International level	<input type="text" value="-"/>

3.25 No. of Extension activities organized

University forum	<input type="text" value="-"/>	College forum	<input type="text" value="-"/>		
NCC	<input type="text" value="-"/>	NSS	<input type="text" value="4"/>	Any other	<input type="text" value="7"/>

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

BITS Pilani has a vibrant eco-system for its ISR and extension activities. Students in campus, Staff and faculty members, with support of Alumni and University management drives the effort.

*For details please refer to Annexure 17*

## Criterion – IV

### 4. Infrastructure and Learning Resources

#### 4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	709	-	-	709
Class rooms	173	-	-	173
Laboratories	152	-	-	152
Seminar Halls	22	-	-	22
No. of important equipments purchased ( $\geq$ 1-0 lakh) during the current year.	179	-	Capex & Govt. Grant	179
Value of the equipment purchased during the year (Rs. in Lakhs)	-	-	-	-
Others	-	-	-	-

#### 4.2 Computerization of administration and library

<ul style="list-style-type: none"> <li>• KOHA – Library Management Software</li> <li>• Digital Library – 11 computers</li> <li>• OPAC (Online Public Access Catalogue) – 4 computers</li> <li>• Help desk – 2 computers</li> <li>• Back office – 6 computers</li> <li>• LMS Server – 1 Blade server</li> <li>• Dspace Server – 1 computer</li> <li>• Self Issue / Return Kiosk – 1No.</li> <li>• RFID Security Gates – 2nos.</li> <li>• Wifi Access points – 04 Nos.</li> </ul>
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#### 4.3 Library services:

<u>Pilani campus</u>	Existing		Newly added (from 1st April 2017 to till date)		Total	
	No.	Value (Rs.)	No.	Value (Rs.)	No.	Value (Rs.)
Text Books	12227	--	58	31731	12285	--
Circulation Books	206968*	--	278	393877	207246	--
Reference Books	1305		13	7668	1318	
e-Books purchased	262**	939460	--	--	262	939460
e-Books available through INFLIBNET online	1000000***		NA		1000000	NA

<b><u>Pilani campus</u></b>	<b>Existing</b>		<b>Newly added (from 1st April 2017 to till date)</b>		<b>Total</b>	
	<b>No.</b>	<b>Value (Rs.)</b>	<b>No.</b>	<b>Value (Rs.)</b>	<b>No.</b>	<b>Value (Rs.)</b>
Journals	203	1031713	6	32063	209	1063776
e-Journals	38799	1743622 4	--	--	38799	17436224
Digital Database	34	1636753 5	1	7656	35	16375191
CD & Video	2395		1	13060	2396	
Others (specify)						
• Ph.D Theses	• 1244	--	73	--	1317	--
• Journals Back Volumes	• 24615	--	190	--	24805	--

\* Circulation books that are issuable to students and faculty

\*\* E Books purchased by library

\*\*\* E Books available free of cost through INFLIBNET during the year 2016-17

<b><u>Goa campus</u></b>	<b>Existing</b>		<b>Newly added August 2016 to July 2017</b>		<b>Total</b>	
	<b>No.</b>	<b>Value</b>	<b>No.</b>	<b>Value</b>	<b>No.</b>	<b>Value</b>
Text Books	5672	65,07,531	129	5,88,964.4		
Reference Books	1362	1,00,79,915	6	1,10,164.2		
e-Books	0	0	0	0		
Journals	89	6,37,366.3	2	1,31,173.11		
e-Journals	19	31,27,380.00	7	13,11,280.62		
Digital Database	7	57,57,500.59	0	0		
*CD & Video	1655					
Others (specify)						

<b><u>Hyderabad campus</u></b>	<b>Existing as on 31.07.17</b>		<b>Newly added *</b>		<b>Total</b>	
	<b>No.</b>	<b>Value(Rs)</b>	<b>No.</b>	<b>Value(Rs)</b>	<b>No.</b>	<b>Value(Rs)</b>
Books	24000	14,613,740	30	15012	24030	14,528,752
Text / Reference Books	8000	4,837,913	54	32000	8054	4,845,967
e-Books	885	10,99,376	0	0	885	1099376
Printed Journals	77	3,197,235	1	5000	58	3,202,235
e-Journals	3553	23,924,016	1	10000	17	23,934,016
Digital Database	9	7974672	0	0	9	7974672

<u>Dubai campus</u>	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	19417	AED 3017258	1073	AED 200887	20490	AED 3218146
Reference Books						
e-Books	4000	-	-	-	4000	-
Journals	50	AED 50598	-	-	50	AED 50598
e-Journals	6386	AED 266308	-	-	6386	AED 266308
Digital Database	5		-	-	5	
CD & Video	1351	-	149	-	1500	-
Others (specify)						
• Back Volumes	478	-	93	-	571	-
• Theses	383	-	82	-	465	-
• Book Bank	372	-	108	-	480	-
CD & Video	670	451374	0	0	670	451374

#### 4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Others
Existing	5000	54	Yes	5	5	306	All	
Added	-	-	-	-	-	-	-	
Total	5000	54	Yes	5	5	306	All	

#### 4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

Training to teachers and Students is always provided whenever there is technology upgradation.

#### 4.6 Amount spent on maintenance in lakhs:

i) ICT

70.41 lacs

ii) Campus Infrastructure and facilities

Pilani 430 lacs, Goa 850 lacs, Hyderabad 277

iii) Equipments

15.23 lacs

iv) Others

-

**Total :**

1642.64 lacs

## Criterion – V

### 5. Student Support and Progression

Knowledge, a key source of competitive and innovation in an Educational Institute, is the power supreme of BITS Pilani University. The strategy to better facilitate the acquisition and dissemination of knowledge requires something which continuously acquires, processes and disseminates knowledge throughout the whole organization-its stakeholders-Teacher and students, is a dynamic and evolving process. The IQAC of BITS Pilani helps to facilitate the acquisition and dissemination of knowledge.

#### 5.1 Contribution of IQAC in enhancing awareness about Student Support Services

1. A well-defined handout for every course which contains definite set of objectives, learning outcomes, lecture, tutorial details and the evaluation components.
2. Lectures and tutorials with continuous evaluation components like quiz, assignment, Mid-semester and comprehensive examination spread out over the entire semester engage students better with courses and thus help students to perform better.
3. Smaller tutorials for the courses with large number of students that ensure better faculty-student, student-student interaction (through flipped mode tutorial class), guidance (extra hour of discussion beyond the lecture and tutorial hours) and monitoring.
4. Sharing lecture notes, lecture videos, conducting quiz in Moodle (a open source software for better course management) ensures better connectivity of the students' with the course within and beyond the class hours.
5. Online lecture notes/teaching aids are available in library. The library infrastructure has been improved many-fold with many new subscription of e-Journals, books and materials involving case studies.
6. Offering specialized and popular courses to the students of all BITS campuses using the Tele-presence Classroom facility of the University ensures accessibility of courses and instructor(s) by any student irrespective of his/her physical location.
7. Offering online courses through the MOOCs using MIT edx provides a platform for the off-campus Industry professionals helps in building close connectivity with the Industry.
8. Wi-Fi enabled hostels, library, class rooms, cafeteria, all laboratories and administrative blocks to better facilitate the acquisition and dissemination of knowledge.

## 5.2 Efforts made by the institution for tracking the progression

1. For each and every course there is a handout. The students are provided with the handout of the course(s) made by the respective Instructor-in-charge(s) in which the objectives, learning outcomes, lecture and tutorial time schedule, extra meeting hour outside the scheduled class hours, dates and time of test(open/close book) and comprehensive examination(open/close book), quiz/assignment/project report/ seminar components are announced.
2. Measures like ICT enabled classrooms, smaller tutorials for better interaction, knowledge sharing and guidance, to carry forward the classroom discussion well beyond the class hours, more discipline oriented project courses, study project, design project, computer project and last but not the least the independent learning platforms like Sandbox etc. helps in creating a student centric learning environment.
3. The institute provides access to open source, nationally and internationally available online teaching and learning resources such as NPTEL lectures, OCW etc. The institute library has a portal which supports 32 online databases including Online Public Access Catalogue (OPAC) which provides access to over 235000 print e-books. These databases put together provide access to over 11000 full text journals.
4. Campus-wide network with data ports, wired and Wi-Fi connectivity is maintained so as to ensure internet facility at all hostel rooms, cafeteria, library, staff quarters, all laboratories and administrative blocks within the campus.
5. BITS has partnered with the MIT & Harvard's massive open online course (MOOC) platform edX to offer MOOCs to its own on-campus and off-campus students as well as students outside BITS. Massive Open Online Courseware (MOOC) platform was introduced to increase BITS technology footprint in education thus improving the learning experience of students.
6. Students whose CGPA are found to be 4.5 or below, comes under the category called ACB (Academic Counselling Board) automatically. An ACB student is closely mentored/closely monitored by a ACB faculty appointed by the Instruction Division.

## 5.3 (a) Total Number of students

Campus	UG	PG	Ph. D.	Total
Pilani	4080	590	378	5048
Goa	3362	151	255	3768
Hyderabad	3362	235	299	3869
Dubai	1509	64	35	1608
Total	12313	1040	967	14320

## (b) No. of students outside state

Campus	UG	PG	Total
Pilani	3169	480	3649
Goa	2633	75	2708
Hyderabad	2192	127	2319
Total	7994	682	8676

## (c) No. of international students

Pilani	Goa	Hyderabad	Total
0	18	53	71

Men	No	%	Women	No	%
	11617	81.27		2676	18.73

Last Year						This Year					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
*						*					

\* Admission is based purely on merit and this information are not captured.

Demand ratio

UG-59.9, PG-9.01

Dropout %

0.005

For details refer **Annexure 18**

## 5.4 Details of student support mechanism for coaching for competitive examinations (If any)

The Institute enables external experts to coach for GATE, GMAT, and CAT examinations, etc. After regular university classes students are free to attend these classes. Career guidance on how to prepare for and what to expect while pursuing Civil Services is also given.

Talks by eminent administrative heads, and high performers in public arena, business leaders, scientists, distinguished alumni etc., are arranged regularly to motivate the students and offer career guidance in competitive examinations.



No. of students beneficiaries

Many students are getting good results in these competitive exams.

5.5 No. of students qualified in these examinations : \*We do not collect this data.

NET  SET/SLET  GATE  CAT   
IAS/IPS etc  State PSC  UPSC  Others

5.6 Details of student counselling and career guidance

A group of 20 faculties counsel students who are under-performing as part of Academic Counselling Cell in one to one basis. They try to motivate and guide students in academics and life as well. ACC also conducts various events to bridge the gap between faculties and students. One Professional Counsellor also visits the campus twice in every month and engages in active counselling session with the students. He addresses to underperforming students as well.

**STUDENT MENTORSHIP PROGRAMME:** All newly admitted students are assigned a faculty mentor. The students are free to meet and consult the faculty mentor for academic and beyond academic matters. Also there are faculty members as Hostel warden and Assistant wardens who are approachable for consultation and support. Student Mentorship Program (SMP) is a student initiative at Hyderabad campus, which ensures that the transition of freshers' into BITS life is smooth and they can make informed decision when faced with choices in their life at BITS. For this purpose, every fresher joining the institute is assigned a mentor who they can approach with queries on any issue like academics, extracurricular, personal life or the issue of maintaining a balance between them.

No. of students benefitted

500 approx.

5.7 Details of campus placement

<i>On campus</i>			<i>Off Campus</i>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
332	2043	1710	121

## 5.8 Details of gender sensitization programmes

To maintain a working and learning environment free of intimidation, fear, bullying, revenge, retaliation in which students, faculty, and staff can develop intellectually, professionally, personally, and socially, 'Gender Champions' and 'Internal Complaints Committees' formally take care of Gender Sensitization Program in the Institute.

In each and every campus Gender Champions is a committee of students who undertake various activities to strengthen the potential of young boys and girls to advocate for gender equality and monitor progress towards gender justice under the guidance of Nodal Teachers.

Campus level Internal Complaints Committees (ICC) with members from faculty, staff and students entertain any kind of harassment complaint, also organize seminars/workshops/talks on gender related issues from time to time.

To name a few, talk by famous feminist Ms. Kamla Bhasin was held on April 15, 2016, on the topic "Gender, Patriarchy and Masculinity: Are they Harmful for Men Also?"

and a talk by Shabnam Hashmi on "Claiming Gender Equality" was held on Sept 17, 2017.

## 5.9 Students Activities

### 5.9.1 No. of students participated in Sports, Games and other events

State/ University level  National level  International level

No. of students participated in cultural events

State/ University level  National level  International level

### 5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports : State/ University level  National level  International level

Cultural: State/ University level  National level  International level

### 5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution	4264	1987 lacs
Financial support from government	101	36.84 lacs
Financial support from other sources	165	11.44 lacs
Number of students who received International/ National recognitions	35	21.88 lacs

### 5.11 Student organised / initiatives

Fairs : State/ University level  National level  International level

Exhibition: State/ University level  National level  International level

5.12 No. of social initiatives undertaken by the students

5.13 Major grievances of students (if any) redressed: No major grievance recorded

## Criterion – VI

### 6. Governance, Leadership and Management

#### 6.1 State the Vision and Mission of the institution

##### **BITS Vision**

BITS Pilani is focusing on developing their undergraduate program in engineering and the sciences by including more opportunities for research. As part of the Vision 20/20 Plan, we are striving to become one of the top three technical universities in India and one of the top 25 technical universities in Asia.

##### **BITS Mission**

BITS mission is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.

The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world's great challenges. BITS is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. We seek to develop in each member of the BITS community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind.

#### 6.2 Does the Institution has a management Information System

Yes.ERP System implemented.

#### 6.3 Quality improvement strategies adopted by the institution for each of the following:

##### 6.3.1 Curriculum Development

Curriculum comprehensively revised via a participatory process.

##### 6.3.2 Teaching and Learning

- Teaching workshops: 04 per Year
- Invited Expert lectures: 05 per Department per Year
- Online Tele-Presence Class Room: 01 (10 courses per semester)
- Wireless LCD projectors: All the class rooms
- All the Class rooms with Wi-Fi connections
- Outcome based teaching and learning introduced
- **Continuous 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
- To review the handouts of all the courses offered by a department with the assistance of the Departmental Committee of Academics (DCA) from Second Semester 2016-17
- The Mobile application for the learning management system has started functioning from Second Semester 2016-17. It facilitates the self-enrollment to the courses, notifications as and when study material/ notices are uploaded by the instructor and all the information uploaded, topic wise, by the instructor will be visible in a single page.

### 6.3.3 Examination and Evaluation

- Review the question papers of all the courses offered by a department with the assistance of the Departmental Committee of Academics from Second Semester 2016-17
- Tutorials, quizzes, projects, seminars and assignments to increase the learning of students
- Written booklets “Guidelines to Faculty” are provided to the faculty members to guide them in adopting a uniform procedure in conducting examinations and maintaining uniformity and fairness in the examinations. All those guidelines ensure complete satisfaction of the students.
- Committees namely Examination Committee as well as Disciplinary Committee ensure sanctity of the examinations and evaluation processes.

### 6.3.4 Research and Development

PhD students are provisionally admitted by Institute wide admission test.

A separate PhD qualifying examination is conducted for all provisionally admitted students.

Regular monitoring of progress of research by Departmental Research Committee (DRC). And Doctoral Advisory Committee (DAC) through report and 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 to the tune of Rs 25000/- per month.

### 6.3.5 Library, ICT and physical infrastructure / instrumentation

- **Guidance from faculty in selection of books**  
From time to time book exhibitions by publishers are arranged to facilitate faculty members selecting books for the library.
- **RFID technology**  
Library has successfully implemented RFID technology solution for circulation of books using SMART SERVE a Self issue return Kiosk and SMART STOCK for shelf reading and stock verification. It is saving a lot of time for both users and library staff
- **E-zones for accessing E-books in library**  
Library has made available E-Zones with good number of computers for users to access E-resources seamlessly and the details of all E- Resources are put up prominently to create enough awareness.
- **KOHA library management software**  
The Library web-site has been linked with the Institute home page for easy access. The home page was designed and developed by students. The Library had been using Koha, Library Management Software to automate all activities like search and housekeeping activities.
- **Regular updation information to students**  
The Library keeps the readers informed of all the books added to the Library through a regular display of new arrivals as well as updates on email.

### 6.3.6 Human Resource Management

1. Professional Allowance
2. Sabbatical Leave
3. Extraordinary Leave
4. Consultancy & Testing Projects
5. HRMS, ERP implementation

*For More details, Please refer Annexure 19*

### 6.3.7 Faculty and Staff recruitment

Recruitment process is tailored for various tracks.

1. On-Campus Tenured
2. On-Campus Non-Tenured
3. Off-Campus Tenured
4. Off-Campus Non-Tenured
5. Non-Teaching Recruitment

*For More Details, please refer Annexure 20*

### 6.3.8 Industry Interaction / Collaboration

- Strengthened the feedback system to improve the overall PS experience for students as well as the host organization
- New cell by name "Quality Assurance and Assessment Cell" was formed to enhance the quality of the PS reports submitted by students
- Identification of domain specific faculty members to guide students during PS-II course.
- Availability of skill gap courses for the benefit of students prior to PS-II for few domains
- Preparation of domain specific course handout with specific learning outcomes for PS-I students.
- Structured orientation programme for PS-I students through activity mapping, process mapping, process improvement mapping at the host organization.
- Faculty visit to various organizations to identify the assignments well in advance prior to PS-I
- Gap lectures by the senior executives for the benefit of PS-I students at the host organization.
- Project specific and course specific allotment of students for PS-II course for few select organizations.
- Domain specific evaluation in the form of quiz during PS-II courses.
- Participation of organization mentor during the evaluation components to improve the evaluation and assessment.

### 6.3.9 Admission of Students

We have strengthened the question bank for FD as well as for HD admissions by making new questions. This time the certain analytics was also carries out on question bank for FD admissions (BITSAT Question bank) based on the difficulty level and few key areas were identified to further work upon.

The HD admission test was modified as per the inputs received from various stake holder.

A greater focus is now given on the admission of candidates who hold the foreign passport and this year we admitted students in Pilani campus in addition to Goa and Hyderabad.

### 6.4 Welfare schemes for

Teaching	Children, Spouse, Self-education benefit Medical benefits Contributory PF Gratuity Sabbatical leave, Immersion scheme - University and Industry Research Initiation Grants Seed grant, Opera, Competitive Research Grant Reimbursable contingency Relocation allowance
Non teaching	Children, Spouse, Self-education benefit Medical benefits Contributory PF Gratuity
Students	Scholarship for FD, HD, Ph.D. Students Contingency grant for Ph.D. Students Earn-while-you-learn scheme

6.5 Total corpus fund generated

6.6 Whether annual financial audit has been done  Yes  No

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

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	-	-	-	-
Administrative	Yes	SR Batliboy & Associates LLP	Yes	Aneja Management Consultants, Mumbai

6.8 Does the University/ Autonomous College declares results within 30 days?

For UG Programmes      Yes       No

For PG Programmes      Yes       No

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

Right from its inception, BITS has been vigorously pursuing reforms in examinations as suggested by various education commissions. As a result, the following processes have become standard practices to be followed by all faculty in all courses over the past four decades. During the period under review, they have been further strengthened. BITS believes that learning and evaluation go hand in hand. So whenever new pedagogies are adopted, it necessitates in new methods of evaluation, which have been developed.

1. Continuous evaluation throughout the semester, including a final comprehensive examination.
2. Various types of evaluation suiting the needs of individual courses, viz., written tests, written quiz, online quiz, lab examination, seminar presentation, group discussion, viva. In the case of project type courses, submission of a final report before deadline and presentation/viva; in the case of industry internship (called Practice school in BITS) different kinds of evaluation components viz., diary writing, seminar, report, quiz, etc.
3. Every course must have at least 20 % open book evaluation in first degree courses and atleast 40% in higher degree courses. During the period under review, a new academic regulation is finalized for the open book component.
4. Number of courses where online examination components are there has increased during the period under review. These are conducted through Moodle software.
5. A beginning has been made to offer some courses in the flipped mode, where course material in video form is available to students and class room interaction is used for more involved discussion of the topics. The materials in digital form for these courses contain embedded quizzes so that the student can self-evaluate himself.
6. There is mandatory display of model answer key before distribution of answer books
7. There is a provision of grade scrutiny also after the final grade has been awarded.
8. Institute has efficient in house reprographic facilities for production of question papers



6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

Not Applicable

6.11 Activities and support from the Alumni Association

The following activities are generally held:

- Silver Jubilee Meet
- Golden Jubilee Meet
- Various other reunions
- Distinguished Alumnus Award
- BITSians Day
- Farewell to Graduating Students
- Embryo & On-campus Lectures
- Scholarships
- Multiple Awards in the name of Professors, Teaching Excellence
- Chair Professorships
- Gurudakshina to recognize senior professors by Batch of 1975.
- Mega Projects such as Telepresence Facility, games Facilities upgradation etc.
- Entrepreneurship Development programmes and courses – New course introduction such as New Venture Creation, Seed funding, mentoring support etc. is facilitated.

6.12 Activities and support from the Parent – Teacher Association

Not Applicable

6.13 Development programmes for support staff

- 1) Advance Cardiac Life Support
- 2) Awareness Programme on Anti Sexual Harassment of Women at Workplace
- 3) Basic Life Support
- 4) Bulandi Ki Oor Ek Safar
- 5) Business Communication & Telephone Etiquette
- 6) Connect Inside Out
- 7) English and Email
- 8) Exposure Visit to Ultratech
- 9) HR-ERP Capability Building workshop
- 10) Focus at Work
- 11) MS-Word & MS-Office
- 12) National Conference on GST
- 13) New Dimensions of Supervision
- 14) Professional Development program on Analytics
- 15) WILP Product Workshop
- 16) Orientation program on Productivity enhancement
- 17) Awareness on Basic Condition Improvement

## 6.14 Initiatives taken by the institution to make the campus eco-friendly

### a) A Multi-Sustainable Roof top Rainwater Harvesting: Safe Drinking Water for Billions

Prof. Rajiv Gupta has successfully implemented the Aakash Ganga: Self Sustainable Roof Top Rainwater Harvesting Scheme in six villages, namely BITS campus, Raila, Harinagar, Kokeru Kalan, Indrasar, and Lasdi. It received nearly Rs 1 Cr as grant from World Bank, USA and the scheme was implemented in other three villages namely Harinagar, Lasdi, and Kakerukalan. The project was successfully implemented and appreciated by villagers, engineers and Government of Rajasthan. Many engineers and official visited the village Raila to implement it in different places. The scheme had number of innovations and showed a number of features first time implemented in a social project. Some of the features that are implemented are:

**Self Sustainable:** The harvested water is used to irrigate the plants, planted on the land donated by the government in the village. Different schemes are implemented to generate the revenue which would be used for the maintenance, and rebuild the scheme after its lifetime is over. Drip irrigation, solar pump, and the plants which need minimum water are some of the features of the vatika.

**Economic Model:** It is proposed to implement the “water exchange” wherein a local body acquires rights, from homeowners, for a fee to harvest their rooftop rainwater during the rainy season. (Homeowners view it as “free” money). The village body supplies the stored and filtered drinking water to the villagers for a fee that is affordable, economically viable and socially equitable. At a macro-economic level, the “water exchange” model converts the annual public expenditure on trucking or transporting water into an infrastructural investment. It is a Social Entrepreneurship Model by which enough resources are generated by drinking water supply and horticulture to support maintenance, and development for the system and business for oneself.

**Partnership:** Aakash Ganga conceived a semi-commercial local body headed by an NGO and with an advisory board of five people from the village. These advisors have unhindered access to the finances and water usage but no operational say. Villagers, thereupon, contributed 15% of the project cost debunking the myth that villagers would not pay. Out of the village contribution 1/3<sup>rd</sup> (5%) was reserved for the maintenance fund called “Kosh”.

**Public Policy Formulation:** The dire shortage of drinking water has prompted the Rajasthan Government to formulate a public policy for widespread adoption of rooftop rainwater harvesting both in the rural and urban areas. The Aakash Ganga experience is expected to provide the essential data to base the public policy on.

Certain Achievements and Recognitions:

1. Supported by Rajasthan Association of America: Rs 25 L
2. Supported by World Bank, USA: Rs 95 L
3. Supported by Department of Science and Technology, India: Rs 62 L
4. Centre of Excellence, BITS, Pilani: Rs 91 L
5. Nominated for Rajiv Gandhi Chair at Ministry of Drinking Water and Sanitation, India
6. Invited to Share the scheme with Chief Secretary, Rajasthan, Official: 5 Chief Engineers, 50 SE, EEs of Rajasthan.
7. One of the 20 projects all over India selected and presented in INDOVATION 2014 conducted by Home Ministry: Aug. 2014: adopted to implement the scheme in any state with available fund
8. One of the selected scheme uploaded at site of Ministry of Drinking Water and Sanitation, India
9. Exhibited the model, by invitation at Rashtrapathi Bhawan, March 2015
10. Recognized to be adopted by Ministry of Urban Development
11. Accepted as one of the recommendations to be adopted in consultative Workshop "Alignment of National Action Programme on combating Desertification to 10 years Strategy of UNCCD" at Arid Forest Research Institute, Jodhpur: 18.3.2015

### b) Water and wastewater treatment

Two prestigious grants from Bill and Melinda Gates Foundation of USD 135,000 and USD 42,000 (Rs. 1.2 cr) were awarded to Prof. Srikanth Mutnuri in partnership with Cranfield University (UK) and Caltech (USA) in the area of water and wastewater treatment at K K Birla Goa Campus.

### **C) Other measures**

#### **1.Planting Saplings (Efforts for Carbon neutrality):**

- 5700 saplings to refurbish and to maintain landscaping at the campus
- 500 saplings for "Haritha Haram" to support the green drive of Telangana State Government.

#### **2.Water Conservation:**

- Renovation of STP for effective utilization of re-cycled water for landscaping
- Controlled water supply for all the quarters 1000lts per day per quarter
- Pressmatic taps arranged at the Academic Block to minimize wastage of water

#### **3.Energy Conservation:**

- LED Lights were provided across the campus:
  - o Hostels Corridors,
  - o Hostel QT's,
  - o Hostel Wash Areas,
  - o Hostel food court lawns.
  - o Mess I
  - o Mess II

#### **4. Renewable Energy:**

- 70 nos. of Solar Lights were provided around the campus pathways & outer Road.

#### **5. Trash Bins:**

- Provided adequate Trash Bins across the campus to control the littering of the unwanted waste material.

#### **6. Bio-Digester:**

- Food waste generated from Students' Mess is treated in-situ through thermophilic biomethanation process and the biogas produced is used as supplement fuel in the hostel kitchen for cooking.
- Hazardous waste management: This factor has been taken care of in an adequate manner to provide an eco-friendly environment within the campus.
- E-waste management: e-waste generated is collected and sent either to e-waste dealer or to the collection point prescribed by pollution board.
- Sewage water is being treated and the treated water is pumped back to maintain the avenues, horticulture and flushing the toilets.

## Criterion – VII

### **7. Innovations and Best Practices**

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

- RFID technology and Self check-in and check-out KIOSK facility at library resulted
  - Quick & Efficient Circulation Operations
  - Enhanced Security for Library Items
  - Seamless Inventory Management
  - Emerging Technology Experience for Library users
- Mobile application for LMS developed
  - Browse the content of courses anytime anywhere
  - Receive instant notifications
- Department-wise training on designing/formulating course learning outcomes
  - Incorporation of learning outcomes in course handouts
- Sandbox lab is inaugurated where facilities such as laser printer, laser cutter, 3D printer and electronic tools to support creative projects by students outside classroom and curriculum.
  - Boost to student creative projects
- In addition to the wired internet connections Faculty / Staff residence areas are now Wi-Fi enabled.
  - Introduce redundancy, ensure 24x7 availability of internet connection
- Library halls are renovated with meeting rooms and projector facilities are made available for the use by faculty and students.
  - Facilitate professional discussion
- All financial transactions are fully digitized.
  - Better checks and balance and better MIS
- Waste disposal: All faculty / staff residences are provided with Blue / Green waste bins to enable waste segregation at source.
  - Green campus

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

1. On decimating information(IQAC webpage) : The IQAC webpage set up by the University has been periodically updated with new information necessary for building transparency in the appointment teaching and non-teaching staff and their promotion, in admission of students in several undergraduate and postgraduate programmes and University research activities and its other outreach activities connecting Industries, Universities in India and abroad.
2. Assessment of the course Instructors by the students and course feedback: The assessment of teachers by the students is provided to all departments and all the teachers voluntarily take necessary corrective measures. For every course the feedback is taken on the content of the course from the students. Based on the feedback received from the students on the course content, the course is updated time to time.
3. On the faculty recruitment/promotion: The IQAC is analyzing faculty performance on the basis of their publications in peer-reviewed journals, books and conference proceedings etc, their sponsored research activities, their other professional achievement like reviewer of reputed journals, member of society of National (e.g. Indian Academy of Science(IAS)) and International repute(e.g. American Chemical Society(ACS), American Physical Society(APS) etc).
4. Quality publication by faculty, Ph.D. students, FD students: The IQAC has a mandate to ensure quality of journal/conference proceeding publication. As per its recommendation, all the departments have worked out a list of peer-reviewed journals, conference proceedings in categories like Tier 1, Tier 2 and Tier 3 which are in compliance with the UGC recommended list of Journals and are either SCI-indexed or SCOPUS indexed. Faculty, Ph.D. students and undergraduate and M.E. students are publishing their work in those journals and conference proceedings.

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

#### A) University Review

The University Review Council comprises the Vice-Chancellor, the Advisor to Chancellor and the Executive Assistant to Chancellor. It undertakes reviews periodically at university level as also at the campus level. Through these reviews, BITS would like to:

- a. continuously improve all critical academic and non academic processes leading to continuous improvement in the Institute's reputation
- b. grow in a quality way and ensure the Institute remains financially sustainable
- c. rapidly contemporize every aspect of its way of working

Scope of the reviews are as follows

- Faculty: Capacity and capability, Expectations, Faculty Engagement, support, rewards, recognition, Talent pipeline etc
- Research: Expectation, contribution, Outcomes, Resources used etc
- WILP & Industry Engagement: Execution of the Transformation Project and outcomes; Relevance, Rigour, Quality of WILP Programmes offered etc
- Student Intake & Mix (FD, HD) and Academic Programmes: Growth and Mix of Students; Relevance, Rigour, and Quality of Academic Programmes offered etc

- Student Placements: Employability, employer perception etc
- Regulations and Accreditation
- International Programmes & Collaboration: Growth & matrix of student exchanges, faculty exchanges & MOU's with other universities
- ERP: Overall growth pattern
- Departments:Expectation, contribution, Outcomes, Resources used

Reviews held till date

	<b>University Review</b>	<b>Campus Review</b>
1	14 July 2015 (Pilani)	7 Jan 2016 (Goa)
2	6 Oct 2015 (Hyd)	3 April 2016(Dubai)
3	6 Jan 2016 (Goa)	5 April 2016(Hyd)
4	8 April 2016 (Pilani)	7 April 2016 (Pilani)
5	21 Sep 2016 (Pilani)	22 Sep 2016 (Pilani)
6	16 May 2017 (Hyd)	17 May 2017 (Hyd) June 14 2017 (Dubai)

**B) Basic Condition Evaluation**

Basic Condition Evaluation is a well-designed assessment framework developed by Corporate Business Excellence. BCE Format has been further modified by MABEC to take care of Campus activities. The process helps a campus to know the adequacy of its basic processes, conditions and standards which are needed for smooth running of the campus. It is seen that Campus having good level on BCE are able to sustain the achieved level of high performance.

The assessment framework provides guidelines to gauge key processes on a three dimensional scale. Processes are categorized as:

1. 5S for Workplace Organising /Basic Upkeep  
(5S: Sort, Straighten, Shine, Standardize, Sustain)
2. Safety, Health, Environment
3. Maintenance
4. Operation

Assessment requires the processes to be examined from the following three viewpoints and all three Indian campuses have been assessed already in this framework:

- a. Physical condition
- b. System
- c. Behavior.

#### 7.4 Contribution to environmental awareness / protection

- i) 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
- ii) Use of renewable energy: Solar Powered Street Lighting; Solar Powered Water Heating System.
- iii) 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.
- iv) 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
- v) Plantation: Every year we have plantation drives to increase the greenery with the replacement of deceased plants. We have self-sufficient staff in house as well as through external housekeeping contractors for maintenance of landscape.
- vi) Hazardous waste management: This factor has been taken care of in an adequate manner to provide an eco-friendly environment within the campus.
- vii) E-waste management: e-waste generated is collected and sent either to e-waste dealer or to the collection point prescribed by pollution board.

7.5 Whether environmental audit was conducted? Yes  No

7.6 Any other relevant information the institution wishes to add.

#### **Project Lakshya**

BITS has initiated a project Lakshya with the Boston Consulting Group to defining the strategic plan for BITS. Key actions to be undertaken

- Detail out, refine and refresh the specifics of the strategy to achieve the vision
- Define and create alignment on the action plans and goals/ targets
- Bring the faculty and staff fully on board with the plan
- Detail out the financial plan in light of the strategy

Following five focus areas have been identified:

- Research & Innovation
- Programs, Curriculum, Pedagogy and Quality Assurance
- Faculty
- Industry Connect
- Alumni Relations

#### **Nielson study**

A group of alumni looked at how to improve placements team engagement with the potential employers that visit / do not visit BITS campuses. The team recommended a market research study to help define the Brand Value Proposition will primarily indicate where does BITS Pilani as an educational institution stand on key performance and image metrics amongst the stake holders. Nielsen, a leading market research company, was engaged to carry out this study. The research study has been completed. BITS has implemented some of the suggested steps to reap benefits leading to having one of the best Placement statistics in the country.

#### **Aon Hewitt**

BITS Pilani had initiated a study with AON Hewitt on key responsibilities (also called Job Description) of various positions across BITS Pilani, such as University / campus Deans, HoDs etc. This study was completed in 2015.

#### **Continuous and Transparent Evaluation**

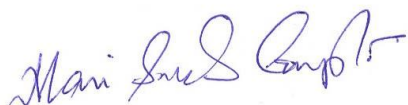
BITS Pilani since its inception has been following a continuous evaluation system. All evaluation components are internal – conducted and evaluated by the faculty who is/are teaching the course. The components of evaluation (tests, quizzes, take-home assignments, laboratory exercises, seminars, reports etc.) are specified with weightages, duration, and time in the handout issued by the teacher in the beginning of the semester. For each component, the teacher evaluates and returns the answer sheets to the students within a week of completion of that component. The model answers and marking scheme are published before this. The student has the right to seek a clarification or re-evaluation. The teacher considers all such requests, clarifies, and/or re-evaluates the answers, and returns it to the student. Further redress mechanisms are available to the student in the form of an examination committee in each campus. But the process is robust enough that one in a thousand student or less has had ever to approach the examination committee.



## 8. Plans of institution for next year

- Installing electricity generation through solar power in certain parts of campus.
- Upgrading waste management and disposal facilities
- Establishing and upgrading labs in a New Academic Block.
- Increasing Wi-Fi coverage in campus
- Construction of new academic blocks and augment sports facilities

Name: Prof. M.S. Dasgupta



Signature of the Coordinator, IQAC

Name Prof. Souvik Bhattacharyya



Signature of the Chairperson, IQAC