



**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE , PILANI**



**BITS Pilani**  
PILANI | DUBAI | GOA | HYDERABAD



## **ANNUAL QUALITY ASSURANCE REPORT**

**(2015-16)**

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

## 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)

2015-16

#### 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

09836833100

Name of the IQAC Co-ordinator:

Prof R. N. Saha

Mobile:

9414082463

IQAC e-mail address:

rnsaha@dubai.bits-pilani.ac.in

1.3 NAAC Track ID (For ex. MHCOGN 18879)

RJUNGN10005

**OR**

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:

<http://www.bits-pilani.ac.in>

Web-link of the AQAR:

<http://www.bits-pilani.ac.in/AQARS>

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				
4	4 <sup>th</sup> Cycle				

1.7 Date of Establishment of IQAC :

DD/MM/YYYY

25/05/2004

1.8 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 \_\_\_\_\_ (DD/MM/YYYY)
- ii. AQAR \_\_\_\_\_ (DD/MM/YYYY)
- iii. AQAR \_\_\_\_\_ (DD/MM/YYYY)
- iv. AQAR \_\_\_\_\_ (DD/MM/YYYY)

1.9 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

1.10 Type of Faculty/Programme

Arts  Science  Commerce  Law  PEI (Phys Edu)

TEI (Edu)  Engineering  Health Science  Management

Others (Specify)

Pharmacy

1.11 Name of the Affiliating University (for the Colleges)

NA

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

Autonomy by State/Central Govt. / University	University		
University with Potential for Excellence	-	UGC-CPE	-
DST Star Scheme	-	UGC-CE	-
UGC-Special Assistance Programme	√ *	DST-FIST	√ *
UGC-Innovative PG programmes	-	Any other ( <i>Specify</i> )	-
UGC-COP Programmes	-		

\*Almost all the eligible departments have received support under UGC-SAP (DRS) and DST-FIST.

## **2. IQAC Composition and Activities**

2.1 No. of Teachers	11
2.2 No. of Administrative/Technical staff	-
2.3 No. of students	-
2.4 No. of Management representatives	-
2.5 No. of Alumni	1*
2.6 No. of any other stakeholder and community representatives	-
2.7 No. of Employers/ Industrialists	2
2.8 No. of other External Experts	1 *(is also Alumni)
2.9 Total No. of members	14

2.10 No. of IQAC meetings held 2

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

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

\*The IQAC of the Institute actively monitors the quality sustenance issues and promotes positive changes for quality enhancement through its meetings and discussions. Please refer Annexure 3 for total conferences conducted.

2.14 Significant Activities and contributions made by IQAC

IQAC's objective has always been to improve the academic performance of the institution and promote measures for institutional functioning towards Quality enhancement.

IQAC Team discussed regarding Mentioning of specialization in the Transcript for the students of M.Sc. (Tech.) General Studies. They felt the need of adding Specialization in the Transcript as part of the narrative for any student completing the M.Sc. (Tech.) General Studies. This was approved by Senate.

The team also had discussion regarding Changing of nomenclature of First Degree Programs i.e., B.E. (Hons.) to B.E., B.Pharm. (Hons.) to B.Pharm., M.Sc. (Hons.) to M.Sc., M.Sc. (Tech.) to M.Sc. for students admitted to these programmes. They presented their views and the requirement details to the Senate and got it approved.

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>The IQAC Team planned of Mentioning of specialization in the Transcript for the students of M.Sc. (Tech.) General Studies. Team felt Specialization should be added in the Transcript as part of the narrative for any student completing the M.Sc. (Tech.) General Studies.</p> <p>The team also felt the need of Changing of nomenclature of First Degree Programs i.e., B.E. (Hons.) to B.E., B.Pharm. (Hons.) to B.Pharm., M.Sc. (Hons.) to M.Sc., M.Sc. (Tech.) to M.Sc. for students admitted to these programmes</p> <p>In process of enhancing curriculum, Embedded Systems programme for UTC Aerospace Systems (UTAS), Bangalore was planned.</p>	<p>The Team had a detailed discussion about the Plan of Action and had submitted their recommendations to the Senate which was approved in 174<sup>th</sup> and 175<sup>th</sup></p>

\* Attach the Academic Calendar of the year as Annexure.

2.15 Whether the AQAR was placed in statutory body

Yes

No

Management

Syndicate

Any other body

Provide the details of the action taken

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

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	14	-	-	14
UG	9	-	-	9
PG Diploma	-	-	-	-
Advanced Diploma	-	-	-	-
Diploma	-	-	-	-
Certificate	-	-	-	-
Others ( Integrated Masters )	6	-	-	6
<b>Total</b>	29	-	-	29
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	-
Annual	-

- 1.3 Feedback from stakeholders\*  
 (On all aspects)

	Alumni	Parents	Employers	Students
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mode of feedback :	Online <input checked="" type="checkbox"/>	Manual <input checked="" type="checkbox"/>	Co-operating schools (for PEI) <input type="checkbox"/>	

\*Please provide an analysis of the feedback in the Annexure : Please refer Annexure 16

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

BITS has initiated a curriculum review for each discipline/program by external experts from academia and industry in India. These reviews have been started in July 2015.



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

Teaching Learning Center : The Institute set up the Teaching Learning Centre (TLC) in 2015. It is involved in improving the overall teaching – learning environment at BITS Pilani , across all 4 campuses. The Centre carries-out research on innovative teaching pedagogy, collection of good practices of teaching learning from all over the world and disseminates the same among the faculty. The center also engages in conduct of intensive teaching workshops for newly joined faculty.

## Criterion – II

### 2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty	Total	Asst. Professors	Associate Professors	Professors	Others
	692	351	144	87	110

2.2 No. of permanent faculty with Ph.D.

565

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
36		4		1		9		50	

2.4 No. of Guest and Visiting faculty and Temporary faculty

0

3

2

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended Seminars/ Presented papers	National Level – 454 International Level – 324. Total - 778		
Resource Persons	Please refer Annexure 1		

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

Teaching Learning Center : The Institute set up the Teaching Learning Centre (TLC) in 2015. It is involved in improving the overall teaching – learning environment at BITS Pilani , across all 4 campuses. The Centre carries-out research on innovative teaching pedagogy, collection of good practices of teaching learning from all over the world and disseminates the same among the faculty. The center also engages in conduct of intensive teaching workshops for newly joined faculty.

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

175

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

1. Open Book Evaluation

2. All examination copies are returned to students, Students can interact face to face with faculty with any re-evaluation claim, Model solution displayed.

- 2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop
- |   |   |   |
|---|---|---|
| 2 | 0 | 0 |
|---|---|---|

- 2.10 Average percentage of attendance of students

BITS is one of the progressive universities in the country which has permitted a voluntary attendance for its students. No minimum attendance is mandatory. Students shine academically and engage actively in various extracurricular activities.

- 2.11 Course/Programme wise distribution of pass percentage :

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
UG (2886 Students Appeared)		7.73 %	66.35%	25.92%		100%
		Please refer Annexure 15				

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

Many decisions 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 center, etc.

### 2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	6
UGC – Faculty Improvement Programme	-
HRD programmes	2
Orientation programmes	14
Faculty exchange programme	4-5%
Staff training conducted by the university	48
Staff training conducted by other institutions	23
Summer / Winter schools, Workshops, etc.	-
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	1041	0	0	0
Technical Staff		0	0	0

## 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-supervisorships, giving letter grades to thesis/Dissertation to encourage undergraduate/graduate research activities, etc.

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	Please refer Annexure 13			
Outlay in Rs. Lakhs				

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	Please refer Annexure 13			
Outlay in Rs. Lakhs				

3.4 Details on research publications

	International	National	Others
Peer Review Journals	International – 515* National - 46*  Please refer Annexure 2(a) and Annexure 2(b)		
Non-Peer Review Journals			
e-Journals			
Conference proceedings			

*\*More than 90% of the Publications are reviewed by Peers.*

3.5 Details on Impact factor of publications:

Range  Average  h-index  Nos. in SCOPUS

*\*Please refer Annexure 14*

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

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	Please refer Annexure 13			
Minor Projects				
Interdisciplinary Projects				
Industry sponsored				
Projects sponsored by the University/ College				
Students research projects <i>(other than compulsory by the University)</i>				
Any other(Specify)				
Total				

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

\*Almost all the the eligible departments have received support under DST-FIST.

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

\*Almost all the the eligible departments have received support under DST-FIST.

3.10 Revenue generated through consultancy

Level	International	National	State	University	College
3.11 No. of conferences Organized by the Institution	International - 6				
Sponsoring agencies	National -33 Please refer Annexure 3				

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

3.13 No. of collaborations International  National  Any other

**Please refer Annexure 12**

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

Type of Patent		Number
National	Applied	5
	Granted	-
International	Applied	2
	Granted	-
Commercialised	Applied	-
	Granted	-

year

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
Please refer annexure 4						

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

390
716

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

18
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3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF	27	SRF	46	Project Fellows	110	Any other	
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3.21 No. of students Participated in NSS events: **Please refer annexure 5**

University level	900	State level	
National level		International level	

3.22 No. of students participated in NCC events: **NA**

University level		State level	
National level		International level	

3.23 No. of Awards won in NSS: **Please refer annexure 5**

University level		State level	
National level		International level	

3.24 No. of Awards won in NCC: **NA**

University level		State level	
National level		International level	

3.25 No. of Extension activities organized : **Please refer Annexure 11**

University forum  College forum   
 NCC  NSS  Any other

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility : **Please refer Annexure 11**

## 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 acres			709 acres
Class rooms	173			173
Laboratories	152			152
Seminar Halls	22			22
No. of important equipments purchased ( $\geq$ 1-0 lakh) during the current year.				
Value of the equipment purchased during the year (Rs. in Lakhs)				
Others				

4.2 Computerization of administration and library

IT Infrastructure & IT enabled services in the campus are provided to the Faculty / Offices (administration, Library etc.)/ Departments / Students through a separate Division / Unit. Institute has campus specific entity which is responsible for planning, specific need forecasting for improvement of IT infrastructure of the individual campus, specific maintenance of the IT infrastructure and uninterrupted delivery of the IT services to the user community. Each library in all four campuses have made available IT Zones with good number of computers for users to access E-resources seamlessly.

#### 4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	212351				212351	
Reference Books	4694				4694	
e-Books	87776				87776	
Journals	-				-	
e-Journals	29701				29701	
Digital Database						
CD & Video	6149				6149	
Others (specify)						

#### 4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Others
Existing	4206	23	1200 mbps	-	-		4	-
Added	-	-	-	-	-	-	-	-
Total	4206	23	1200 mbps	-	-	-	4	-

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

<p>BITS has always pioneered in upgrading Teachers and Students in Technology. Below are few examples of workshops conducted.</p> <ul style="list-style-type: none"> <li>• 16th International Conference on Distributed Computing and Networking, organised &amp; hosted by BITS Goa from 4 June 2015 to 6 June 2015. Source of funding: Google, Accenture, TCS, IBM &amp; DEITY.</li> <li>• ACM India Annual Event 2015 jointly organised with Goa University, ACM Goa Chapter at BITS Goa from 5th February to 7th February 2015. Source of funding: ACM India , Persistent Systems.</li> </ul>
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4.6 Amount spent on maintenance in lakhs :

i) ICT	Rs. 170.5
ii) Campus Infrastructure and facilities	
iii) Equipments	
iv) Others	
<b>Total :</b>	Rs. 170.5 /-

## Criterion – V

### 5. Student Support and Progression

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

1. Handouts refined and learning outcomes clearly defined.
2. Smaller tutorials for better interaction and guidance
3. Online lectures teaching aids made available in library and overall library infrastructure improved. Many E-journals, books and case materials were procured for academic use.
4. Offering online courses through the MOOCs using MIT edx. Platform.
5. Wi-Fi enabled hostels and administrative block to promote knowledge acquisition

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

1. The students are provided with the course handouts by the course In-charge which clearly specify the date and time for scheduled tests and comprehensive examination apart from all other components pertinent to that specific course like quizzes, home assignments, lab work, project report, viva-voce, seminars etc. Dates for conducting tutorial test and / or open book test / assignments / quiz are announced by the instructor-in-charge of the respective courses.
2. Student centric learning has been strengthened by measures like ICT enabled classrooms, smaller tutorials for better interaction and guidance, more discipline oriented project courses, independent learning platforms like sandboxx etc.
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 dataports, wired and Wifi connectivity is maintained so as to ensure internet facility at all hostel rooms, cafeteria, library, staff quarters, and all laboratories 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.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
11053	836	815	-

(b) No. of students outside the state

Data not captured

(c) No. of international students

28

Men	No	%	Women	No	%
	10231	81		2473	19

Last Year						This Year					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
Information on SC/ST; OBC is not captured in our application form as the admissions are purely based on merit.											

Demand ratio - ~ 82

Dropout % -

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

5.5 No. of students qualified in the

Many students are getting good results in these competitive exams.

NET	<input type="text"/>	SET/SLET	<input type="text"/>	GATE	<input type="text"/>	CAT	<input type="text"/>
IAS/IPS etc	<input type="text"/>	State PSC	<input type="text"/>	UPSC	<input type="text"/>	Others	<input type="text"/>

\*We do not collect this data.

## 5.6 Details of student counselling and career guidance

Student Counselling is provided to all students and in a more intensive manner to those who do not fare well in the evaluation components. A committee called Academic Counselling Board (ACB) monitors their programmes and gives guidance to help them improve their performance. The committee meets the students regularly and monitors their performance in various tests, quizzes, etc., and also interacts with the different course instructors to get feedback regarding the student performance. In addition, the Academic Counselling Cell (ACC), comprising of faculty members and students, is also involved in mentoring students. The institute has also recently evolved a mechanism in which all students of the first year are divided into small groups and each group is assigned a faculty member as advisor to provide academic and personal guidance.

No. of students benefitted

Around 1000 students got benefitted

## 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
362	Around 2200	1805	-

## 5.8 Details of gender sensitization programmes

Institute does not per se have such programmes. However, due weightage is given to individual and personal issues during and after appointment of faculty and staff at all levels. In addition, Institute also committees for combating sexual harassment and redressal committees, at all campuses to immediately address concerns, if any. The Institute addresses any act of indiscipline, at all levels, seriously, and necessary corrective measures /actions are taken at the earliest.

## 5.9 Students Activities – **Please refer Annexure 8**

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

State/ University level  National level  International level

*\*More than 5000 students across the Nation participate in Sports Events*

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 – **Please refer Annexure 8**

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	<b>Please refer Annexure 9</b>	
Financial support from government		
Financial support from other sources		
Number of students who received International/ National recognitions		

5.11 Student organised / initiatives: **Please refer Annexure 10**

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

**Please refer Annexure 11**

5.13 Major grievances of students (if any) redressed: The Institute has student grievance redressal mechanisms. Institute addresses student grievances, if any, and in general works to maintain the well-being of the student community. It also addresses the issues, investigates and recommends feasible solutions for resolving issues for the mutual benefit of the students and the Institution.

The student council and the student welfare division, jointly take up the issue of student grievances. The students approach the council with their problems which are then taken up with the administration as and when required.

Eg: Some grievance for internet timing and speed was addressed in this academic year to the satisfaction of the student community.

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## Criterion – VI

### 6. Governance, Leadership and Management

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

**Vision:** BITS' lasting vision is to cultivate a scientific mind in young men and women, and provide them with a value-based education that fosters creativity, innovation and leadership, and prepare them to serve humanity. Our commitment to transparency and stress on equal opportunity has been a key contributing factor behind our emergence as an institution of national repute; our rigorous intake process rewards only merit and ensures that only truly motivated students join us. Our curriculum is continuously being innovated and updated to reflect the latest developments in technology and trends within industry. Pure academics are supplemented by pervasive industry engagement and every student is exposed to practical applications of classroom knowledge under a structured semester-long engagement programme.

**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 an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. BITS seeks to develop in each member of its 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

Management at BITS Pilani involves faculty and staff members contributing to educational administration at various levels based on their nomination for a particular role. Apart from the leadership team of BITS which includes Vice Chancellor and Directors of individual campuses, all functional divisions are headed by University level Deans who are in turn assisted by Campus level Associate Deans. The departmental Heads are responsible for the functional activities of the individual disciplines and departments. Individual faculty members can contribute in the capacity of nucleus members of these divisions. All functional units are adequately supported by non teaching staff for its various activities. In addition, administrative professionals are also employed for domains where special functions like placements, IT, Finance, HR, etc.. require specific domain knowledge. Review of these governance structures is done periodically and changes are made to ensure smooth working of BITS Pilani, a multi campus university.

#### 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

BITS Pilani has established a **Teaching and Learning Center (TLC)** in each of its campuses with committed faculty, time and budget. The ambit of TLC includes:

- Support for professional development of faculty and technical support staff involved in teaching like lab demonstrators.
- Support for research and innovation in teaching and learning processes
- Training of instructors in technology-enhanced learning

### 6.3.3 Examination and Evaluation

Examination papers (answer books) are examined by the examiner or a group of examiners (all internal evaluation), marks are entered in the marks list of the specific courses and then the answer books are distributed (given back) to the students within 10 days from the date of examinations either in the class rooms or after announcing the date/time/venue of distribution. Students after receiving the answer books go through them to ensure the proper evaluation of all questions, award of marks/part marks for all questions. If they are not satisfied, they immediately give them back for recheck of the question / answer book before leaving the distribution hall. The teacher (examiner) collects back all the papers requested for recheck, re-evaluates them accordingly, tabulates the changes of marks, if any, and then redistributes the rechecked papers to the concerned students. Thus, the examination and evaluation system is very transparent. Also the marks for every test and any other components are either displayed in the notice boards and/or uploaded in the site specific for the course that is available to all registered students pertaining to that course. Also, mid-semester grades and pre-comprehensive total marks are either displayed or uploaded in the specific website before the final examinations are conducted. Students verify their marks, and error or dispute, if any, is brought to the notice of the Course In-charge who takes care of the issue instantly after verifying/cross checking the matter. Apart from these, grade sheets are handed over to the respective student after the final results are passed by the examination committee of the University.

After this, students are allowed to apply for scrutiny of the results of any course, if they are not satisfied with the results mentioned in the grade sheet. The scrutiny applications are sent to the Course In-charges who look again at the results critically to address the grievances mentioned in the scrutiny forms. If there is any error detected, that is corrected after scrutiny, and if there is any change in the grade for the course after scrutiny, it is submitted again to the examination committee, who verify the facts before passing the new grade in place of the old grade after scrutiny. And, if there is any change of grade after scrutiny, the student is given a “Revised” grade sheet.

#### 6.3.4 Research and Development

Over past five years, BITS Pilani is aggressively pursuing an agenda for research and innovation, which includes (i) expansion of academic research conducted at all three tier of education; First Degree, Higher degree and PhD level, and (b) innovation and entrepreneurship through sponsored research and consulting. BITS has taken several initiatives to support and cultivate research culture at all four campuses.

BITS continues to make it more attractive for students to join PhD programme by taking several initiatives -

- Enabled professionals working in organizations in the vicinity of BITS campuses to join our PhD programme on a Part- Time basis.
- Provided 90% waiver in tuition fees to all full time PhD scholars, and 80% tuition fee waiver to all Part time PhD scholars.
- While BITS is expected to pay a stipend to 50% of all full time PhD students, the number of PhD students receiving scholarships from CSIR/UGC/ICMR/DBT etc or by sponsored R&D has grown significantly from 23 in 2010 to 238 in 2015.

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

- A wide range of e-books, e-journals are available through BITS central library portal for effective learning of students. BITS central library also provide e-catalogue which can be accessed through computer systems placed inside the library which helps the students to search for available books and journal in bound volumes.
- One Tele-presence (TP) room is established in each campus of the University for organizing Tele-presence lectures. TP room is equipped with LCD projector, Wi-fi access, teleconferencing facility with other campuses as well as with any place through internet. This facility helps students to discuss and to clarify their doubts with instructors from different campuses/other connected places. All these lead to better quality of teaching and learning.
- All the classrooms are equipped with state of the art technology. Wireless LCD projectors, Wi-fi connection are introduced in almost all the classrooms.
- There is a dedicated unit for students called Information Processing Center (IPC) which provides IT facilities like computers with internet connection, printers etc.

#### 6.3.6 Human Resource Management

Human resource department created

### 6.3.7 Faculty and Staff recruitment

The Coordination and monitoring of courses, and appointment of faculty needs meticulous planning and rigorous implementation. The institute puts in conscious effort to recruit motivated & research-focused faculty with outstanding academic background and potential to excel in research & teaching through six step robust and transparent recruitment process. The process involves initial screening of applications followed by a cross-discipline review of the short-listing done by various departments in a given campus. This is then followed by a cross-campus review by the university-level short-listing committee. Shortlisted candidates then go through a rigorous interview by the selection committee comprising of external experts along with BITS leadership.

### 6.3.8 Industry Interaction / Collaboration

Industry engagement has been one of the important elements at the core of the educational philosophy of the Institution from its inception. Deepening this engagement to define the distinctive character of the Institution, and to achieve the objectives, is an important aspect of the plan for growth and development.

### 6.3.9 Admission of Students

Unique admission process initiated in 2005 through test called BITSAT.

6.4 Welfare schemes for

Teaching	<b>Please refer Annexure 7</b>
Non teaching	
Students	

6.5 Total corpus fund generated

1,134,704,235 INR.

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	The departmental reviews, in terms of academic and administrative structures, curriculum, infrastructure and facilities etc. are done periodically through visiting committees comprising of eminent academicians and researchers from Institutes across the country. <b>Please find annexure 17.</b>			
Administrative				



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. 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.

- i. Continuous evaluation throughout the semester, including a final comprehensive examination.
- ii. Total internal evaluation for all courses, except PH D thesis.
- iii. 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.
- iv. Every course must have at least 10 % open book evaluation. During the period under review, this percentage has increased in number of courses.
- v. Number of courses where online examination components are there has increased during the period under review. These are conducted through Moodle software.
- vi. Online lab exams are also used to test and groom the coding problem solving skills of students.
- vii. 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.
- viii. BITS has been following relative grading wherein the teacher will award letter grades based on the performance of the class. There were 5 letter grades ( A, B ,C, D ,E). Based on feedback from stakeholders, the division of grading has been made finer with 8 levels (A, A-, B, B-,C,C-, D , E) during the period under review.

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

NA

## 6.11 Activities and support from the Alumni Association

The University has a registered Alumni association; BITSAA International Inc. The website for the same is <http://www.bitsaa.org/>. The BITS Alumni Association (BITSAA) has been functioning since 1989 as a nodal agency for maintaining liaison with Alumni all over the world and to involve them with the development of the Institute.

The role of BITS Alumni Affairs Division includes the following: to plan, implement and promote alumni programs that support the BITS Pilani strategic initiatives; to establish and build relationships with a wide range of alumni as well as local, regional, national and international alumni chapters; serve as the single point of contact for alumni & Institute for all matters related to alumni affairs, and to maintain regular communication with alumni; Educate graduating students about alumni benefits and engage them in various programs.

Gurudakshina is the signature program by the BITS Charitable Trust (of the 1970-75 batch) and is held every year to offer gurudakshina to professors who taught in their times. During this program, the batch members felicitate their gurus and award cash prizes while recalling their contributions in students' lives.

Mantra Award: Mantra Awards are instituted by BITS alumni, to recognize and reward outstanding students who have demonstrated extraordinary leadership potential and/or entrepreneurial initiative. They are awarded in the following four categories : 1) Award for Outstanding Leadership; 2) Entrepreneur of the Year Award; 3) Award for Social Leadership; 4) Innovator of the Year Award

Teaching Excellence Award are instituted by BITS Alumnus in the name **Prof. S Venkateswaran and Kris Ramachandran** , to encourage, honor retain, and develop faculty who are the key part of student development. Also department specific student award are instituted by the alumni in honour of their favourite professor. Awards like Prof. R. P. Vaid from Chemical Engineering, Prof. K. E. Raman, for EEE etc. are awarded to a deserving student studying in BITS campuses

Alumni also contribute towards infrastructural development of the university by creating sports facilities for the students. They encourage research initiatives of the undergraduate students by supporting travel grants for conferences and scholarships. Alumni also encourage entrepreneurial activities on the BITS campuses by acting as Mentors and Angel Investors for student start ups.

## 6.12 Activities and support from the Parent – Teacher Association

BITS leadership has very strong interaction with all its stakeholders.

At the time of admission, the university organises a day long orientation programme in order to familiarise the new students with the Academic Programmes at BITS and to give them an idea about their campus life and co-curricular activities. The Vice Chancellor, Director, and senior faculty members meet the parents of Freshmen at an interactive session organized at the time of admission. Director of each campus interacts with the parents on several other occasions.

### 6.13 Development programmes for support staff

1. The Institute organizes 2 weeks to 6 months of training programmes on a periodic basis for upgradation of skills and technical expertise. Major training areas have been Soft skill training, public relations, retraining of staff for ERP, workshop equipments, common laboratory, classroom equipments, instruments in various laboratories, office, security personnel, etc.
2. Opportunities are given to some category of staff members for pursuing Higher Degree and Ph.D. by providing fee waiver and other facilities.
3. Staff members are given recognition in the form of excellency awards for their contribution to institutional building.

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

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.
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
5. 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.
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 e-waste dealer or to the collection point prescribed by pollution board.  
replacement of deceased plants. We have self-sufficient staff in house as well as through external housekeeping contractors for maintenance of landscape.

## 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.

The Institute embarked on an innovative initiative that would allow multiple benefits from a resilient service infrastructure across its campuses by the way of providing a high-quality, interactive collaborative facility in keeping with the times. Termed as the BITS-Connect 2.0, this initiative has benefitted the Institute in following ways :

- Multi-campus meetings with eye-to-eye contact and collaboration capability, leading to huge savings in terms of travel time and associated costs while allowing class-schedules and family lives of the faculty and leadership largely unaffected.
- Permits efficient use of faculty, particularly in the areas of specializations which would otherwise have required each campus to have dedicated experts in even those areas wherein there may be hardly double digit student registration in a given campus.
- Allowed expert alumni and external experts visiting a given campus (or even from their offices / homes anywhere in the world) to share their experience and expertise to students and faculty across campuses.
- Permits multi-campus Faculty Recruitment committees to interact simultaneously with a given aspirant.
- Permits placement agencies to visit any one campus and yet to be able to address and interview students across all relevant campuses.
- Conducting multi-campus seminars, mass addresses, workshops and training programmes became possible due this innovative enterprise.

In the first stage Pilani, Goa and Hyderabad campus got access to this unified multi-service ecosystem, in addition to Mumbai ABG Headquarters. In this year, Dubai campus too got connected seamlessly to this facility.

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

As per the Plan of Action decided upon at the beginning of the Year, (1)Specialization in the Transcript for the students of M.Sc. (Tech.) General Studies was mentioned (2) Nomenclature of First Degree Programs was changed i.e., B.E. (Hons.) to B.E., B.Pharm. (Hons.) to B.Pharm., M.Sc. (Hons.) to M.Sc., M.Sc. (Tech.) to M.Sc. and (3) , Embedded Systems programme for UTC Aerospace Systems (UTAS), Bangalore was planned. All the above recommendations from IQAC were approved in 174<sup>th</sup> and 175<sup>th</sup> Senate meetings.

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

**Please refer Annexure 6**

*Provide the details in annexure (annexure need to be numbered as i, ii,iii)*

7.4 Contribution to environmental awareness / protection

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.
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
5. 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.
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 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. (for example SWOT Analysis)

Reassessment of the University for IIIrd cycle of NAAC re-accreditation and activities pertaining to the same were initiated in this period (2015-16).

### 8. Plans of institution for next year

-Expansion of campuses as planned in Growth phase II with new hostels, academic buildings and increased student strength.

Name <u>Prof. R.N.Saha</u>	Name <u>Prof. Souvin Bhattacharyya</u>
	
Signature of the Coordinator, IQAC	Signature of the Chairperson, IQAC

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