

Perspective Plan for the growth of IIT Bhubaneswar (2016 – 2021)



**A
Proposal
Submitted to**

**Ministry of
Human Resource Development,
Govt. of India**

by

**Indian Institute of Technology Bhubaneswar
Bhubaneswar– 751013, Odisha
March 2016**



प्रो. आर वी राजकुमार
निदेशक
Prof. R V Raja Kumar
Director



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
INDIAN INSTITUTE OF TECHNOLOGY
BHUBANESWAR

No.V/D/MHRDC/2009/040
April 15, 2016

To

Shri R. Subrahmanyam
Additional Secretary to the Govt. of India
Ministry of Human Resource Development
Department of Higher Education
Shastri Bhawan, New Delhi-110 115

Sub: Submission of a perspective plan for the growth of IIT Bhubaneswar from 2016-2021 for the consideration of MHRD.

Dear Shri Subrahmanyam,

IIT Bhubaneswar came into existence in 2008 with a total of 94 students admitted into three academic programmes. Along with the compatriot new IITs, IIT Bhubaneswar has been developed in project mode for the initial 6 year period which was later extended to eight years to end in March 2016. As per the modified DPR, by the end of 2015-16, the student strength is supposed to rise to 2360 with a proportionate rise in the faculty and staff strength. The original infrastructure planned was 2,21,000 sqm at a cost of Rs 388 crore. For various reasons, as such, by the end of 2015-16, the student strength could grow to only 1050 against the mandated 2360 and built-up space including the ongoing works of 1,02,587 sqm by nearly spending the full budget allocated for infrastructure. The Institute now doesn't have vital facilities like class room complex, auditorium, student activity centre, adequate hostels and quarters. The present infrastructure is less than even 50% of the originally planned infrastructure for 2360 students.

It is needless to mention that when the student strength is low, the per capita overhead expenditure increases and it is not economical to run an Institute for a small number. The Institute has to now expand its infrastructure in order to accommodate more students in different undergraduate, postgraduate and research programmes and make up for the serious deficit developed over the last eight years. As a forward looking institution, IIT Bhubaneswar aspires to compensate for the past deficiencies in the growth through spirited functioning and likes to grow forward to meet the aspirations of the citizens, meet the challenges and reach a mandated target of 4,730 students in the coming 5 years.

The Institute undertook a careful planning and design exercise including planning of right academic programmes, faculty & staff growth, infrastructure creation and pedagogical system. The infrastructure requirement is planned according to the growth of student strength, faculty and staff strength over the five years and timed appropriately and incorporated in the attached perspective plan.

Growth of the Institute as per the plan costs Rs 1,432 crore, Rs 296.86 crore, Rs 398.10 crore, and Rs 287.91 crore for infrastructure, laboratory equipment, operations &

services and salaries, respectively, totalling Rs 2,415.34 crore for the coming 5 year period. The estimates given here are exact and full support is essential for the growth to happen as per the plan. Any deficiency in the same may lead to deviation from the plan and cost escalation may take place.

The perspective plan drawn is attached herewith for the kind consideration of the Ministry. We request for necessary action at your end including seeing to it that the plan is considered and funds are provided as per the plan for IIT Bhubaneswar.

Looking forward for your kind action and with warm regards,

Encl: As above

Yours sincerely,



(R. V. Raja Kumar)

Copy to:

Ms Tripti Gurha, Director (IITs)
Government of India
Ministry of Human Resource Development
Department of Higher Education
Shastri Bhawan, New Delhi-110 115

A Perspective Plan for the Growth of IIT Bhubaneswar

1. Present Status (2008-09 to 2015-16):

1.1 Student and Faculty Strength:

IIT Bhubaneswar has come into existence from 2008 with a total of 94 students in three (3) undergraduate programmes viz. Civil, Electrical and Mechanical Engineering. The new IITs have been developed in project mode for the initial 6 year period which was later extended to end in March 2016. As per the modified DPR, by the end of 2015-16, the student strength is supposed to rise to 2360 with a proportionate rise in the faculty and staff strength to 236 and 260, respectively as shown in Table-1.1 and Table-1.2.

Table 1.1 Student Enrolment Projection for a period of six years which was later extended to 8 year period as per the DPR

Title	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
B.Tech.	120	250	380	400	450	500
M.Tech.	-	50	80	150	200	250
Ph. D.	-	-	20	40	60	80
Post-doc Fellows	-	-	-	10	20	30
Total Strength	120	300	480	600	730	860
Cumulative (4yr, 3yr and 2yr for BTech, PhD & MTech, resp)	120	420	900	1450	1900	2360

Table-1.2 Faculty & Staff Strength Projection as per the DPR

Title	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Students	120	420	900	1450	1900	2360
Faculty	30	60	90	145	190	236
Staff	33	66	99	160	209	260

Presently, the Institute has 1038 Students (B Tech - 589, M Tech - 71, M Tech - PhD - 66 MSc - PhD - 141, PhD – 171), 108 full-time faculty members including one Chair Professor. In addition, the Institute has 10 officers and 70 supporting staff. The institute has grown to have 7 schools

Actually, as per the DPR for each new IIT as mandated by MHRD in July 2008, the expected growth plan of all the eight IITs started in 2008 including IIT Bhubaneswar is as shown below:

1.2 Financial Sanction and Infrastructure Status:

MHRD sanctioned Rs.760 crore to each of the 8 new IITs. Accordingly, out of this 760 crore a sum of Rs.529 crore was earmarked for construction and equipment ($388 + 141 = 529$). The remaining 231 crore was meant for recurring expenditure both salary and non-salary components. The project duration was six years initially but this was subsequently made eight years. IIT Bhubaneswar is still in the project mode. As per MHRD communication the built up area has been taken as 2,21,000 sq. meter which is as per the original area allocated and approved by the Cabinet. The total built up area of 2,21,100 sq. meter includes 63,000 sq. meter area under the Academic Complex and 1,58,000 sq. meter area under Residential Complex for the student strength of 2360 by the end of the project period of 8 years. The details are as given in Tables 1.3 and 1.4 respectively.

Table 1.3 Funds provided by the ministry till end of 2015-16.

S No	Fund components	Fund allocation as per DPR (crore)	Fund actually provided (crore)
1	Infrastructure (Non-rec) under Head 35C	388.00	387.60
2	Lab infrastructure (Non-rec) under Head 35E	141.00	74.47
3	Services and salaries (Rec) under Head 31 & 36	231.00	224.40
	Total	760.00	686.47

Table 1.4 Infrastructure status till end of 2015-16.

S No	Fund components	As per DPR
1	Funds as per the DPR (Rs crore)	Rs 388.00 crore
2	Funds actually provided (Rs crore)	Rs 387.60 crore
3	Actual amount for which approval was given to PMC (Rs crore)	Rs 410.00 crore
4	Actual payments made to CPWD (Rs crore)	Rs 337.00 crore
5	Originally planned space in Sq.m. (@ Rs. 16,000 per sq.m)	2,21,000 sqm
6	Actual status of space in Sq.m. (@ DSR rates of Rs. 3,300 per sq.m)	1,02,587sqm
7	Shortfall in space (sq.m)	1,18,413 sqm

1.3 Shortfall in development, serious difficulties and need for growth:

Infrastructure planned in the first instance (5th meeting of the Finance Committee and 6th meeting of the Board of Governors on 14.01.2011) for the Institute was 2,21,388 sqm whereas the construction of infrastructure was taken up to the tune of 1,02,974.60 sqm only which is inadequate for the Institute and it is very difficult to manage without many vital facilities like class room complex, student activity centre, hostels etc., as shown in Table 1.4. It is less than 50% of the original plan for creation of infrastructure for 2360 students.

At the moment even though the student strength is 1050, at the end of the 8 year period, the institute is unable to think of shifting academics to the new campus due to no class room complex. Also the Institute finds it very difficult to increase its student intake due to non-existence of classrooms, and shortage of research laboratories, hostels, student activity centre, auditorium etc. With great difficulty, we could shift classes of 1st and 2nd year BTech students yet again by an interim arrangement of converting lab rooms into temporary class rooms. As such the institute could grow to 1050 students against the mandated 2360. When the student strength is low, the per capita overhead expenditure increases and it is not economical to run an institute for a small number. The Institute has to expand its infrastructure in order to accommodate more

students in different undergraduate, postgraduate and research programmes and make up for the serious deficit developed over the last eight years.

2. Perspective Plan for Growth over the Next Five Years:

An aspiring and forward looking institution to meet the aspirations of the citizens should meet the challenges and reach the mandated target. With this concern, IIT Bhubaneswar aspires to compensate for the past deficiencies in the growth with spirited functioning and likes to grow forward to reach a mandate of 4,730 students in the coming 5 years. A carefully made perspective plan is very essential for a proper and deterministic growth of the institution. Keeping this in mind, the institute undertook a careful planning and design exercise including planning of right academic programmes, faculty, staff growth and infrastructure creation. In view of the same, a perspective plan is prepared for the growth of the institute for the coming 5 years. The effect of rising the intake in the coming 5 years will be felt in the requirements at the institute for 5 more years (the rise in intake of the batch entered in 2019-20 would cause rise in student strength for the next 4/5 years till the first batch comes out). The plan is prepared considering the human resource utilization scenario in the country, the birth of new areas and the human resource requirement.

2.1 Academic Programmes and Student Strength:

It is known that, world over many of the conventional branches of study engineering and sciences continue to be as relevant as in the past except of inclusion of some modern courses of recent interest in the updated curricula. New courses that would be emerging include, Product Design and Development, Computer Science & Data Analytics and Cyber security & Forensic Engg. The perspective plan including the proposed 4-yr BTech, 5-yr Dual Degree, 2-yr MSc, 5-yr MSc, 2-yr MTech as shown in Tables 2.1 to 2.4 respectively and PhD programmes in Table 2.5. **It may be noted that quality of education is of utmost importance and the proposed growth can be realized only when the required faculty strength of high quality could be raised. However, this target is achievable with spirited implementation and efforts from all involved.**

The perspective plan includes the projection of student intake whose raise is planned for over the next five years till 2020-21. The student intake into BTech, MTech, and MSc degree would eventually rise till 2019-20 to 530, 420, and 220 respectively including the Dual degree students. The effect of the intake on the rise in intake till 2023-24 and the student strength of BTech, MTech, MSc and PhD students 2120, 1000, 710 and 900 respectively totalling to the strength of 4,730 students.

The student, faculty and staff strength projections for the proposed growth are given in Table 2.6. The perspective plan also includes the requirement of faculty, staff and the infrastructure. The faculty student ratio is kept at 1:10. In few of further automation, the faculty staff ratio may be kept at 1:1 ratio.

2.2 Infrastructure:

It is planned that the campus is fully residential for students and faculty while accommodation will be provided for 50% of the staff while the rest are expected to come from surrounding areas in Jatni and Bhubaneswar. The hostel and faculty residential infrastructure requirement projections are given in Table 2.7.

An important aspect of infrastructure planning is the planning for a centralized class complex. A centralized complex would facilitate optimum utilization of resources and is desirable. The class sizes are divided into 60, 120 and 240 seated facilities. Going by the academic programmes being offered, the pedagogy and projected students strength, the requirement is arrived at as shown in Table 2.8.

2.3 Pedagogical System:

The institute believes in providing holistic education to its students, with the objective of shaping them into positive and well-rounded personalities with excellent technical/scientific knowledge, good health, social sensitivities and a good individuals. Emphasis will be put on the following:

- Strong technical education supported by practical's and hands-on.
- Human values and wellness environment
- Broad-based education including Humanities courses

A right infrastructure involving a student activity center, play fields and health center are essential to make this possible. More importantly, right systems with a right culture with spirited functioning are an absolute must.

Emphasis will be placed on the following to provide strong technical education:

- Enlightenment in a subject towards meaningful and actual education.
- Learner centricity and participatory.
- Objective and purpose oriented.
- Discourage ritualistic operations in the teaching/learning and examination centricity amongst students and faculty.
- Conceptual, sense of enquiry, thought provoking, encourages own solution towards innovative thinking.
- Learning to learn, ability to do self-learning.
- Ability to apply known knowledge to solve unsolved problems in order to prepare the students to have significantly high research capabilities.
- Teaching should have engg design, applications and case studies included.

Home assignment with serious evaluation and individual feedback to students is very essential too. The institute would also like to leverage and use technology and ICT for education introducing video courses as electives in very specialized subjects. Furthermore, the students would be encouraged to have at least 10-20% of browsing of video lectures from the best of professor's in the world with Teaching Assistance to do mentoring. The institute shall make available the following e-resources for everyone in the campus:

- Video courses from very selected experts
- IIT Bhubaneswar own courses
- NPTEL courses
- p-NPTEL courses
- Other resources (MOOCs, MIT, public domain lectures)
- e-content and e-books for browsing
- e-journals,
- information on www

Facilities for browsing of the e-resources in common places will be provided and the students will be encouraged to use the common facilities rather than to use one's own laptop in own closed hostel room.

This apart, motivated by the hon'ble Prime Minister's Start-up India campaign, all efforts would be made to encourage innovative thinking, entrepreneurship and start-up creation. Emphasis will be placed on the following in the teaching learning process:

- Motivating students and faculty to take up entrepreneurship.
- Driving the culture of creativity and innovation in almost all engineering courses including theory and practice.
- Providing opportunities for a student and faculty member to carry on his/her creative and innovative pursuits anywhere on campus including in all laboratories.
- Providing opportunities to incubate technologies on the campus.
- Offering breadth courses that help entrepreneurship and innovation.
- Providing access and facilitating enterprise mentoring, angel and venture funding.
- Creating a Science & Technology Entrepreneurship Park (STEP) within the campus.

While the entrepreneurship park will be developed with other funds, the laboratories and department/school buildings would facilitate entrepreneurship and innovation through adequate consumable support for students.

Table 2.1 Proposed 4-Yr BTech Programmes

S. No.	Branch	Student intake in Academic Year													
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	Electrical Engg	40	40	40	40	40	40	40	40	40	40	40	40	40	40
2	Comp Science and Engg				40	40	40	40	40	40	40	40	40	40	40
3	Electronics & Comm Engg							40	40	40	40	40	40	40	40
4	Energy Engg								20	20	20	20	20	20	20
5	Product Design and Development								20	20	20	40	40	40	40
6	Industrial Engg & Management								20	20	20	20	20	20	20
7	Mech Engg	40	40	40	40	40	40	40	40	40	40	40	40	40	40
8	Civil Engg	40	40	40	40	40	40	40	40	40	40	40	40	40	40
9	Environmental Science & Tech									20	20	20	20	20	20
10	Met & Mat Engg					20	20	20	20	20	20	40	40	40	40
11	Bio-Engg									20	20	20	20	20	20

Table 2.2 Proposed 5-Yr Dual Degree Programmes

S. No.	Branch	Academic Year													
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	Civil Engg							20	20	30	30	30	30	30	30
2	Mech Engg							20	20	30	30	30	30	30	30
3	Electrical Engg									20	20	20	20	20	20
4	ECE								20	20	20	30	30	30	30
5	CSE									20	20	20	20	20	20
6	Computer Science & Data Analytics							20	20	20	20	20	20	20	20
7	MME							20	20	20	20	20	20	20	20
	Btech Intake	120	120	120	160	180	180	300	380	480	480	530	530	530	530
	UG Student Strength				520	580	640	820	1040	1340	1640	1870	2020	2070	2120

Table 2.3 Proposed 2-Yr MTech Programmes

S. No.	Specialization	Student Strength in Academic Year													
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	Structural Engg				18	18	30	30	30	30	30	30	30	30	30
2	Transportation Engg				0	18	20	20	20	20	20	20	20	20	20
3	Construction Engg & Management				0	0	20	30	30	30	30	30	30	30	30
4	Water resources/ Civil				0	0	20	20	20	20	30	30	30	30	30
5	Environmental Systems Engg & Management				0	0	20	20	20	20	20	20	20	20	20
6	Environmental and Sustainable Engg				0	0	0	0	20	20	20	20	20	20	20
7	Manufacturing				0	0	20	20	30	30	30	30	30	30	30
8	Thermal Science & Engg				0	18	20	20	20	20	20	20	20	20	20
9	Mechanical Systems Design				18	18	20	20	30	30	30	30	30	30	30
10	Electronics & Comm Engg				18	18	20	30	30	30	30	30	30	30	30
11	Electrical Engg				18	18	20	20	20	30	30	30	30	30	30
12	Computer Engg				0	0	0	10	20	30	30	30	30	30	30
13	Cyber security & Forensic Engg				0	0	0	10	20	30	30	30	30	30	30
14	Circuits and VLSI Engg				0	0	0	0	0	20	20	20	20	20	20
15	Material Science & Engg				18	18	20	20	30	30	30	30	30	30	30
16	Climate Science & Technology				18	18	20	20	20	20	20	20	20	20	20
	PG student intake				108	144	250	290	360	410	420	420	420	420	420
	PG student strength				216	252	394	540	650	770	830	920	940	1000	1000

Table 2.4 Proposed 2-Yr MSc and 5 – Yr Integrated MSc Programmes

Programme	S No.	Specialization	Intake in Academic Year											
			2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
2 yr MSc	1	Mathematics		20	20	20	30	40	40	40	40	40	40	40
	2	Physics		20	20	20	30	30	30	30	30	30	30	30
	3	Chemistry		20	20	20	20	20	20	20	20	20	20	20
	4	Atmosphere & Ocean Sciences		0	20	20	20	20	20	20	20	20	20	20
	5	Geology		20	20	20	20	20	20	20	20	20	20	20
5 yr MSc	1	Mathematics			0	0	0	40	40	40	40	40	40	40
	2	Physics			0	0	0	30	30	30	30	30	30	30
	3	Chemistry			0	0	0	20	20	20	20	20	20	20
MSc Intake				80	100	100	120	220	220	220	220	220	220	220
MSc student strength					180	200	220	340	440	530	620	710	710	710

Table-2.5 Proposed Projection of PhD student strength

Strength	Strength in the Academic Year											
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
PhD Students		180	180	270	270	360	450	540	630	720	810	900

Table 2.6 Student Strength, Faculty and Staff Strength Projections

Strength	Strength in the Academic Year											
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Under graduate and Post-graduate Students		736	1012	1234	1580	2030	2550	3000	3410	3670	3780	3830
PhD Students		180	180	270	270	360	450	450	510	600	690	690
Total Student strength		916	1192	1504	1850	2390	3000	3450	3920	4270	4470	4520
Faculty requirement		119	150	185	239	300	345	392	427	447	452	452
Non-teaching staff requirement		119	150	185	239	300	345	392	427	447	452	452

Table 2.7 Projection of Residential Infrastructure Requirement

Strength	Projected Accommodation Requirement in Academic Year											
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total Student strength		916	1192	1504	1850	2390	3000	3450	3920	4270	4470	4520
Faculty requirement		119	150	185	239	300	345	392	427	447	452	452
Non-teaching staff requirement		119	150	185	239	300	345	392	427	447	452	452
Faculty housing		119	150	185	239	300	345	392	427	447	452	452
Staff housing		60	75	93	120	150	173	196	214	224	226	226
800 seated boys halls				1	1		1	1		1		
200 seated Girls halls				1	1		1	1		1		
Total student accommodation				1000	2000	2000	3000	4000	4000	5000	5000	5000
85 seated Faculty quarters construction				1	1	1	1	1				
Available faculty quarters				85	170	255	340	425				
40 seated Staff accommodations				1	1	1	1	1				
Available Staff accommodations				40	80	120	160	200				

Table 2.8 Projection of Class Room Requirement (central class room complex)

Seating capacity	Class Room Construction by year				Remarks
	Jul-16	Jul-17	Jul-18	Total no.	
60	20	20	10	50	Multimedia Projector from ceiling, laptop connections, WiFi, White board, chalk board, white screen for pulling
120	8	8	4	20	Audio, Multimedia Projector from ceiling, laptop connections, WiFi, White board, chalk board, white screen for pulling
240	0	2	2	4	Audio, Multimedia Projector from ceiling, laptop connections, WiFi, White board, chalk board, white screen for pulling

This part of the perspective plan was proposed by Prof R V Raja Kumar, Director which was further examined by Schools, recommended by Committees of Heads & Deans and the Building Works Committee and approved by Board.

Prof R V Raja Kumar
Dt 24th Oct 2015

3. Budgetary Requirement Projection:

The infrastructure requirement is planned according to the growth of student strength, faculty and staff strength over the five years and timed appropriately. The details are worked exactly as per the requirement without any inflation as shown in Table 3.1. The other features of the infrastructure planning are as follow:

- i. **The space and budget estimates are also computed exactly as per the requirement and the projections are exact.**
- ii. The budget figures are computed as per Delhi Schedule of Rates – 2016 of the CPWD.
- iii. The same standards for infrastructure as already done for phase-1 constructions are followed to maintain continuity of requirements and architecture.

The projected expenditure for the laboratory equipment is obtained with the participation of the faculty of various schools considering both the teaching and research laboratories and is as given in Table 3.2 considering only the priority items. The schools need another equivalent of what is shown here and such equipment may be built using the funds from sponsored research projects.

Similarly, the projected expenditure for the recurring component involving the various services and administrative expenditure etc., are projected as shown in Table 3.3. These are estimated from the projected student, faculty and staff strength.

The budgetary requirement for the salary component of faculty and staff are computed considering the strength projections, likely salary rise as per 7th pay commission and considering the average salaries in various cadres and categories. The projected details are as shown in Table 3.4.

The finer details and budget of the various components under infrastructure, laboratory equipment, services and salary expenditure are illustrated very much in detail in the annexures.

The overall budget for the proposed growth is as given Table 3.5. The proposed growth of the institution as per the plan costs Rs 1,432 crore, Rs 296.86 crore, Rs 398.10 crore, and Rs 287.91 crore respectively for infrastructure, laboratory equipment, operations & services and salaries, respectively,

totalling Rs 2,415.34 crore for the coming 5 year period. The estimates are exact and the full support is essential for the growth to happen. Any deficiency in the same may lead to deviation from the plan and cost escalation may take place. Similarly enhancement of the budget may result in excess supply of funds.

Indian Institute of Technology Bhubaneswar

Table 3. 1 Budget for New Infrastructure

Amount in Crores of Rupees

Sl. No.	Item	No. of Floor	Total Area in Sqm	2016-17			2017-18			2018-19			2019-20			2020-21		
				Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount
1	Boys' Hostel (800 Seater)	G+7	22049.00	1	71.92	71.92				1	71.92	71.92	1	71.92	71.92	1	71.92	71.92
2	Girls' Hostel (200 Seater)	G+7	7132.00	1	21.89	21.89				1	23.55	23.55	1	23.55	23.55	1	23.55	23.55
3	Scholars' Hostel (Married)	G+7	3080.00													1	10.55	10.55
4	Faculty Quarters																	
a)	Type – A (80 Nos.) (PA-2200Sft and SBA-2860Sft)	G+7	21264.00							1	64.10	64.10						
b)	Type – B (80 Nos.) (PA-1800Sft and SBA-2340Sft)	G+7	17398.00	1	52.66	52.66							1	52.66	52.66			
c)	Type – C (80 Nos.) (PA-1600Sft and SBA-2080Sft)	G+7	15465.00				1	47.00	47.00									
5	Staff Quarters																	
a)	Type – D (40 Nos.) (PA-1200Sft and SBA-1560Sft)	G+7	5800.00										1	19.80	19.80			
b)	Type – E (40 Nos.) (PA-1900Sft and SBA-1170Sft)	G+7	4350.00				1	15.30	15.30	1	15.30	15.30						
c)	Type – F (40 Nos. – Single Bed) (PA-700Sft and SBA-910Sft)	G+7	3383.00	1	16.46	16.46												
6	60 Seated Class Room - 20 Nos. (1200 capacity)	G+1	4930.00	1	21.50	21.50	1	21.50	21.50	0.5	21.50	10.75						
7	120 Seated Class Room - 8 Nos. (960 capacity)	G+1	3943.00	1	17.30	17.30	1	17.30	17.30	0.5	17.30	8.65						
8	240 Seated Class Room-2 Nos. (480 capacity)	G	1972.00				1	8.65	8.65	1	8.65	8.65						
9	Student Activity Centre	G	5500.00	1	22.09	22.09												
10	Dispensary	G+1	1500.00	1	6.43	6.43												
11	1000 capacity Auditorium	G	2500.00	1	24.40	24.40												
12	Director's Bungalow	G+1	400.00	1	1.63	1.63												
13	Central Workshop	G	792.00	1	3.50	3.50												
14	Construction of Extension Part of School of Electrical Sciences	G+3	8468.00				1	39.21	39.21									
15	Construction of Extension part of School of Mechanical Sciences	G+3	8563.00				1	39.54	39.54									

16	Construction of Extension part of School of Infrastructure	G+3	8490.00				1	39.51	39.51								
17	Construction of Extension part of School of Basic Sciences	G+3	8468.00				1	39.33	39.33								
18	School of Minerals, Metallurgical & Materials Engineering	G	5000.00							1	24.00	24.00					
19	School of Earth, Ocean & Climate Sciences	G	5000.00				1	24.12	24.12								
20	School of Humanities, Social Sciences & Management	G	3000.00							1	15.98	15.98					
21	Construction of Central Research & Instrumentation Facilities	G	1536.00							1	6.46	6.46					
22	Providing and laying sewerage and STP & ETP			1	16.20	16.20				1	16.20	16.20					
23	Open Air Theatre			1	5.00	5.00											
24	Landscaping & allied work			1	10.00	10.00	1	10.00	10.00	1	10.00	10.00					
25	Water works			1	11.04	11.04											
26	External water supply, fire fighting and rain water harvesting			1	20.90	20.90	1	14.90	14.90	1	5.00	5.00					
27	Roof top Solar PV Power Plants			1	3.63	3.63	1	3.63	3.63	1	3.63	3.63	1	3.63	3.63		
28	Playgrounds			1	3.41	3.41	1	3.41	3.41								
	Total					329.96			323.40			284.19			171.56		106.02
	PMC Charges @ 6% (approx.)					19.80			19.41			17.05			10.29		6.36
	Furniture @ 5% (approx..)					16.50			16.17			14.21			8.58		5.30
	Spill Over Expenditure of 2015-16					83.68											
	Total					449.94			358.98			315.45			190.43		117.68
	Grand Total		169983.00									1432.48					
	Say											1433.00					

Table 3.3 Details of Projected Expenditure on Recurring Expenses (Head - 31)

Rs. In Crore

Particulars		2016-17	2017-18	2018-19	2019-20	2020-21	Total
A	Departmental operating expenses	3.94	5.83	7.39	8.33	9.28	34.77
B	Details of Wages & Other Services	11.07	13.77	17.03	19.12	21.24	82.22
C	Non salary Components	6.72	9.85	12.52	14.13	15.73	58.95
D	Repair & maintenance (minor works)	0.51	0.68	0.96	1.39	2.08	5.62
E	Scholarships and Student Support Service	13.05	19.85	24.29	26.32	26.70	110.21
F	Other Administrative Expenses	6.15	9.10	11.54	13.01	14.48	54.27
G	Seed Money Grant	11.21	14.44	11.97	7.22	7.22	52.06
Total Recurring Expenses (Head - 31)		52.65	73.51	85.69	89.52	96.73	398.10

Table 3.4 Projected Expenditure Under Head 36 (Salary)

Rs. In Crore

Major Head		Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	Total
36	1	Salary Teaching	22.37	33.06	41.93	47.28	52.62	197.26
	2	Salary Non-Teaching	10.29	15.06	19.29	21.76	24.24	90.65
	Under Head 36 (Salary)		32.67	48.12	61.22	69.04	76.86	287.91

Indian Institute of Technology Bhubaneswar

Table 3.5 Consolidated Statement of Projected Expenditure for the period 2016-17 to 2020-21

Rs. in Crore

Year	Under Head 35 (Non-Recurring)		Head No.31 Plan Recurring	Under Head 36(Salary)	Total
	Head No.35 C	Head No.35 E			
2016-17	449.94	61.04	52.65	32.67	596.29
2017-18	358.98	59.28	73.51	48.12	539.89
2018-19	315.45	58.54	85.69	61.22	520.91
2019-20	190.43	57.35	89.52	69.04	406.34
2020-21	117.68	60.65	96.73	76.86	351.92
Total Projected Expenditure	1,432.48	296.86	398.10	287.91	2,415.35

[Signature]
15.4.16
Registrar
IIT Bhubaneswar

[Signature]
15/4/16
CR VRAJA KUMAR
निदेशक/ Director
भा प्रौ संस्थान भुवनेश्वर
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Bhubaneswar-751013