



Proposal for Institute Development and Financial Projections of IITRAM (10 Years Plan)



**Institute of Infrastructure, Technology, Research And
Management, Ahmedabad, Gujarat**

(An Autonomous University, Established by Government of Gujarat)

1. About IITRAM:

Institute of Infrastructure, Technology, Research And Management (IITRAM) was established by Government of Gujarat as an Autonomous University vide Gujarat Legislature Act No. 5/2013. IITRAM offers B.Tech., M.Tech. and Ph.D. programs with the objective of building a strong, dynamic and quality conscious center of knowledge in the field of Infrastructure, responsive to rapid technological advances at National and International levels. Institute vigorously works towards building confidence and creativity in the minds of students. Credit based academic programmes with wide choices of elective courses are offered at Departmental and Institute level.

2. Vision and Mission of University:

- Impart knowledge and offer courses with specialization in Infrastructure and Management of Infrastructure in particular.
- To impart knowledge in the other areas of higher education with focus on science, technology, management and allied areas.
- To develop training facilities for urban bodies, industries and technical teaching and other allied bodies.
- To be an open institution to attract best minds of the world (students as well as faculty) and to be globally competent.
- To set up innovative foundation in developing Knowledge parks, Techno parks and Technology incubators to foster entrepreneurship.

3. Progress of the University Since 2013 :

- Institute started academic activities in the year 2013-14, with B.Tech. Programs in the area of Civil and Electrical Engineering. In subsequent year, the Institute added another program in the area of Mechanical Engineering. Since inception, Institute has emphasized on flexibility to students and teachers. This allowed framing of curriculum that focused on fundamentals with an eye on emerging trends in infrastructure development. In addition, laboratories have been developed to match the current industry standards. To further enhance growth

opportunities for students in the core and allied disciplines, Honors and Minor programs have been added. The details of the programs are as given in Table 1.

Table 1: Details of UG Programs

Program	Discipline	Start Year	Current Intake
B. Tech. (4 Years)	Civil Engineering	2013	68*
	Electrical and Computer Science Engg. Dept.		68*
	Mechanical and Aero-Space Engg. Dept.	2014	68*
Honors Program		Minor Program	
1. Civil Engineering		1. Aero Robotics	
2. Electrical Engineering		2. Computer Science Engineering	
3. Mechanical Engineering		-	

* Including EWS

- The post graduate programs in the Institute started with a view to develop skilled manpower in the fields of infrastructure development as envisaged by the State and Central Government. The program curriculum has been designed to inculcate research aptitude amongst students and promoted projects based on real-life infrastructure problems. Subsequent to the launch of post-graduate programs, the teething issues have been resolved and firm foundation is laid out for the launch of new programs critical for infrastructure development. The post-graduate programs offered by the Institute with its commencement year is outlined in Table 2.

Table 2: Details of PG Programs

Department	Specialization	Start Year	Intake
Civil Engineering Dept:	Urban Infrastructure	2016	10
	Geotechnical Engineering	2021	10
Electrical and Computer Science Engg. Dept.	Electrical Infrastructure	2016	15
	Communication Engineering	2019	10
Mechanical and Aero-Space Engg. Dept.	Industrial Infrastructure	2016	15

- Recognizing the critical needs of research, Ph.D. program in all available specializations of Engineering, Sciences and Social Sciences & Humanities have been initiated since 2016.
- Commensurate with the academic growth of the Institute, recruits of faculty members and non-teaching staff is being stepped up to match the growing needs. The summary of progress witnessed in terms of number of Faculty members and Non-teaching staff along with under-graduate and post-graduate/PhD students is provided in Table 3. In order to ensure quality of teaching and research at the Institute, faculty members have been selected through stringent recruitment criterion with a minimum eligibility qualification of Doctoral degree (Ph.D.)

Table 3: Details of Students and Faculty from A.Y. 2013-2021

Sr. No.	Description	Academic Year								
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
1	Faculty members	12	19	31	46	43	45	52	51	
2	Non-Teaching Staff	14	32	42	42	37	60	52	51	
3	Programs	B.Tech.	2	1						
		B. Tech. Honors and Minors	-	-	-	-	-	3 (Hons.) 1 (Minor)	1 Minor	-
		M.tech.	-	-	-	3	-	-	-	1
		Ph.D.	-	-	-	All Disciplines				
4	Number of enrolled students	B.Tech.	61	189	304	495	596	627	663	657
		M.tech.	0	0	0	30	57	50	32	63
		Ph.D.	0	0	0	3	21	41	45	73

4. Research Growth since 2014:

The Institute promises to foster research and is making every attempt to enhance its research footprints at the national and international level. Despite its modest beginning and limited availability of resources, IITRAM has steadily improved its research footprint and the same is reflected in progressive growth in

international/national publications and the research project grants received from National and State funding agencies. The growth in number of publications since 2014 is shown in Figure1.

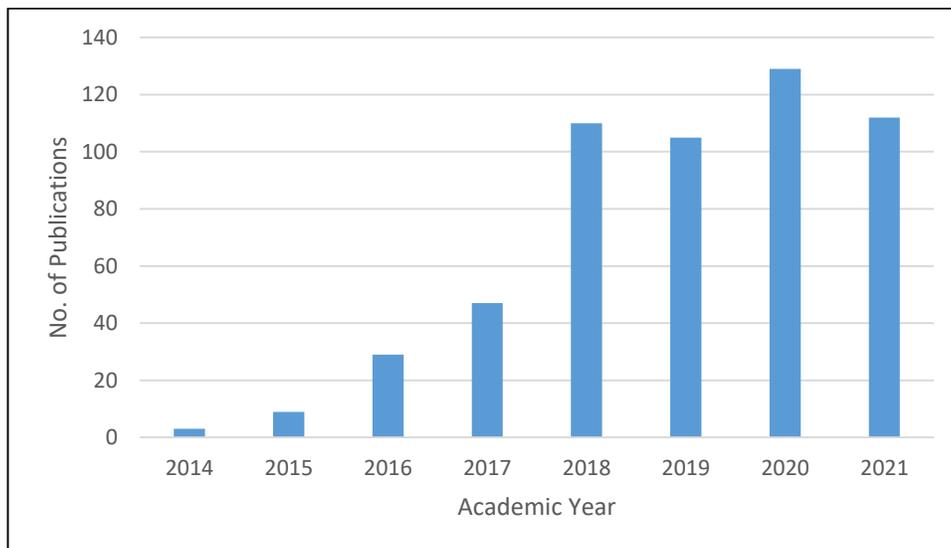


Figure 1: Growth of Research Publications since 2014

The details of research projects received so far are as per Table 4.

Table 4: Details of Research Projects Received

Sr. NO.	Number of Research Projects	Amount (Rs. in lakhs)	Status
1	5	150.92	Completed
2	10	252.72	Ongoing

5. Industrial and Academic Consultancy Growth since 2013:

Along with basic and applied research in broad areas of infrastructure development, Institute is also aggressively pursuing its collaborations with public and private enterprises to share its technical expertise through Design and Material Testing consultancy projects. Over last few years, Institute has enhanced the scope of its Industrial and Academic consultancy services from testing to project specific designs, third party proof-checking and validation expert assessment. Institute is providing consultancy services to various organizations

like Ahmedabad Municipal Corporation, Ahmedabad Urban Development Authority, Central Warehousing Corporation, Aztech Fluids Swarnim Gujarat Sports University Desar, Gujarat Road Safety Authority, CWE, Military Engineering Services Ahmedabad, Air Force Gandhinagar and many more. In addition, Institute is also collaborating on projects of national importance with agencies including SAC(ISRO), IDST, L&T (NHSRCL), BRNS, SERB, GUJCOST etc. The financial growth in consultancy works taken till date is shown in Table 5.

Table 5: Industrial and Academic Consultancy Growth

Sr. NO.	Financial Year	Consultancy Amount (Rs. In lacs)
1	2016-17	42
2	2017-18	16
3	2018-19	78
4	2019-20	113
5	2020-21	135

6. Institute Performance in GSIRF Rankings

National and State rankings are becoming critical parameters to assess the growth of an Institute and its relative position amongst similar class of institutions. Institute started participation into state and national ranking framework since 2020. As compared to 2020, Institute under university category has improved four positions to rank at 6 in 2021 as compared to 10 in 2020. The cumulative score and scores for each parameter are given in the Table 6.

Table 6: Details of GSIRF Ranking

GSIRF Rank and Parametric Score		2020	2021
State Ranking		10	06
Score		55.55	63.04
i	Teaching and Learning Resources (TLR)	81.18	76.89
ii	Research and Professional Practice	64.0	65.26
iii	Graduation Outcomes	56.0	71.99
iv	Outreach and Inclusivity	48.0	60.0

7. Infrastructure Development Plan:

Commensurate with the academic development plan, it is essential to develop physical infrastructure. Envisaging the growing needs, expansion of the physical infrastructure had been planned. Following physical infrastructure had been planned and the necessary approvals for the execution has been obtained.

7.1. Academic Block Extension: The academic building of the Institute will be extended by additional five floors thus offering an area of 18,986 sq.mt to accommodate the requirement of new academic development plan. The financial outlay of Rs.45.02 cr for the development is approved by the Education Department, GoG with the execution responsibility to Roads and Buildings Dept, GoG. The Roads and Building Department has already floated tender for the same and the work is expected to commence in short time.

7.2. Hostel Block: Hostel blocks with a capacity to accommodate 960 male and 144 female students are planned. Keeping in view that number of female students will increase in future, two floors in girls hostel building is reserved for future expansion. In addition to girls hostel, the hostel building will also house guest house and amenities including swimming pool, indoor games, computer and reading rooms. The financial outlay of Rs. 72.71 cr for the project is approved by Education Department, GoG and the execution is being taken up by Roads and Building Department, GoG. The tender for execution of the work is floated by Roads and Building Department and the work is expected to commence in short time.

7.3. Faculty Housing: With a view to promote incampus housing, Institute has taken up the development of faculty accommodation with 56 units in the current plan. The proposed structure is 14 storey structure with four units on each floor. The building estimated to cost Rs.30.00 cr is approved by the Education Department, GoG and work for floating of tenders for the same has been completed by Roads and Buildings Department, GoG.

The hostel block and faculty housing will come up in new area allotted in the campus of Swarnim Dental College, less than a kilometer from the Institute.

The period for completion of civil/electrical work for the works listed above is expected to be completed in a span of two years. Post completion of construction works, furnishing of the buildings will be done in a phased manner to match the growing requirements.

8. Proposed Academic Development Plan for 10 Years:

Over last seven years, Institute has streamlined its under-graduate and post-graduate programs and has demonstrated the ability to contribute in cutting edge research through its year on year publication and project growth, in the areas of Infrastructure Development.

Keeping in view that Institute is recognized as Research University by the State Government under new education policy, the expansion plan envisages higher growth in post-graduate programs and research centers. The ratio of undergraduate to graduate student currently stands at 3.0. The development plan envisages to improve this ratio to 1.4.

To enhance interdisciplinary research and enable development of state of the art research facilities, it is proposed to establish center of excellence and central

experimental and computational facilities in research areas of priority for central and state government. In line with the new education policy framework, the student intake will cross the threshold capacity of 3000 in the year 2030-31.

The envisaged plan if fully implemented will see overall growth of three times in student intake, over six times growth in PG/PhD students and almost three fold increase in program offerings. The proposed academic development plan with projected student strength is shown in Table 7.

Table 7: Proposed Academic Development Plan

Components	Academic Year									
	2021-22 (As On)	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
UG Programs	3		1		1		1			
PG Programs	5	2	2	3	2	2	2	2	3	2
Centres for Excellence	2		1	1		1	1	1	1	
Central Experimental & Computational Facilities	-			1			1			
Projected Student Strength										
UG	816 [#]	864	988	1064	1216	1368	1520	1672	1748	1824
PG	120 [#]	170	230	305	380	455	545	620	695	770
Total UG and PG	936	1034	1218	1369	1596	1823	2065	2292	2443	2594
PhD Students	150 [*]	207	244	274	319	365	413	458	489	520
Total Student Strength	1086	1241	1462	1643	1915	2188	2478	2750	2932	3114
UG/PG Ratio	3.02	2.29	2.09	1.84	1.74	1.67	1.59	1.55	1.48	1.42

* Current students (86) + Deficit (64) = 150

As per Intake capacity of respective programs

The ambitious plan of the Institute to enhance research and promote growth at under-graduate and post-graduate levels require strong base of faculty members and non-teaching staff. To ensure, seamless development with continuous up-

graduation, year wise projection on requirement of faculty and non-teaching staff is highlighted in Table 8.

Table 8: Faculty and Staff Projections

Year	2021-22 (As On)	2022- 23	2023- 24	2024- 25	2025- 26	2026- 27	2027- 28	2028- 29	2029- 30	2030- 31
Faculty	51+13*	69	81	91	106	122	138	153	163	175
Non-Teaching Staff (1:1.1)	51+15#	76	89	100	117	134	151	168	179	190

* Deficit to meet the Faculty: Student ratio.

9. Budget Projections for 10 Years:

In order to match the goals of the Institute and take it up to the global level, financial support is must. The financial projections are made in following three parts:

1. Budget Projections on As-it-is Basis
2. Budget Projections for Infrastructure Development
3. Budget Projections for Proposed Academic Development Plan

The details of each are given in sub-sections as below.

9.1 Budget Projections on As-it-is Basis:

The financial projections to run the Institute on As-it-is basis are done considering the recurring and capital budget requirements only along with the arrears of 7th CPC and NPS implementation. The details are given in Table 9.

9.2 Budget Projections for Infrastructure Development:

The financial projections are with respect to the construction activities described in Section 7 of this proposal. The administrative approval for the construction and its related estimate are already received from Govt. of Gujarat. The expected completion time for the said construction projects in 2023. The budget projections from 2023-24

include components like furniture requirements and maintenance activities. The details are given in Table 10.

9.3 Budget Projections for Proposed Academic Development Plan:

The financial projections are with respect to the New Academic Development plan as described in Section 8 of this proposal. Over a period of 10 years, it is proposed to start 3 new UG Programs, 20 new PG programs, 6 new Centres for Excellence, and 1 new Central Experimental and Computational Facilities respectively. The key concepts of new Education Policy are taken into consideration. The details of financial projections for the same are given in Table 11 which consists of two parts (a) Capital Budget and (b) Recurring Budget corresponding to proposed developments.

9.4 Summary of Budget Projections with all Components:

This section includes a summary of budget projections including all the aspects of development of the Institute. The details are given in Table 12.

Table 9: Budget Expenses Projection for the Period 2021-2030 (As it is)**Amount in lakhs.**

Sr. No.	Components	Academic Year										
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	Recurring Budget	1,884	2,073	2,519	3,309	3,641	4,008	4,411	4,856	5,346	5,886	6,481
2	Arrears											
a	7th CPC	-	550	-	-	-	-	-	-	-	-	-
b	NPS	-	250	-	-	-	-	-	-	-	-	-
3	Non-Recurring Budget (Capital Budget)	0.16	607	661	731	799	882	969	1,064	1,174	1,294	1,419
	Total	1,884	3,480	3,180	4,040	4,440	4,890	5,380	5,920	6,520	7,180	7,900

The details are attached in Annexure-1.

Table 10: Budget Projection for the Period 2021-2030 (with Infrastructural Development)**Amount in lakhs.**

Sr. No.	Components	Academic Year									
		2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	Infrastructure Development	7,380	7,380	719	411	128	14	16	16	26	26
	Total	7,380	7,380	719	411	128	14	16	16	26	26

**Table 11 (a) : Capital Budget Projection for the Period 2021-2030
(with Proposed Academic Development Plan)**

Amount in lakhs.

Sr. No.	Components	Academic Year								
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	New UG and PG Programs									
a	UG Program		280	280	280	280	280	280	0	
b	PG Program	620	620	930	620	620	620	620	930	620
2	Centres for Excellence		200	200	200	300	300	300	200	200
3	Central Experimental and Computational Facilities	200	200	200	200	200	200	200	200	200
4	New PhD Students - Scholarships	771	147	121	182	182	194	182	121	121
	TOTAL	1,591	1,447	1,731	1,482	1,582	1,594	1,582	1,451	1,141

**Table 11 (b) : Recurring Budget Projection for the Period 2021-2030
(with Proposed Academic Development Plan)**

Amount in lakhs.

Sr. No.	Components	Academic Year								
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	Recurring Budget	650	1,500	2,300	3,060	3,810	4,570	5,330	6,080	6,840

The details are attached in Annexure-2.

Table 12: Overall Summary of Budget Projections

Amount in lakhs.

Sr. No.	Components	Academic Year										
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	Recurring Budget and Non-Recurring	1,884	3,480\$	3,180	4,040	4,440	4,890	5,380	5,920	6,520	7,180	7,900
2	Infrastructure Development	-	7,380#	7,380#	720	410	130	20	20	20	30	30
3	New Academic Programs											
a.	Capital Budget*	-	-	1,590	1,450	1,730@	1,490	1,590	1,600	1,590	1,450	1,140
b.	Recurring Budget	-	-	650	1,500	2,300	3,060	3,810	4,570	5,330	6,080	6,840
	Total	1,884	10,860	12,800	7,710	8,880	9,570	10,800	12,110	13,460	14,740	15,910

\$ Amount stated includes arrears towards implementation of 7th CPC and NPS.

Figures mentioned are financial grants approved for Extension of academic block, construction of hostels (Boys and Girls) and faculty housing.

* Capital Budget for new academic program includes laboratory development and class room and related infrastructure.

@ The increased budget is due to 3 PG program considered for that Academic Year.

Note: (i) One new UG Programs is proposed to start in each of the A.Y. 2023-24, 2025-26 and 2027-28 respectively.

(ii) It is proposed to introduce 2 new PG programs in each academic year from 2022-2031, except for 2024-25 and 2029-30 where 3 new PG programs are proposed.

10. Deliverables :

- Institution of Excellence in the field of Infrastructure Engineering and Management.
- Research and Development Centre.
- Distinguished and unique Institute with strong linkage with Industry.
- Augmenting the teaching resources in the state through the sharing of quality manpower and state-of-art equipped laboratories and Centres of Excellences.

Annexure-1 : Details of Recurring Budget

Sr. No.	Components	Academic Year										
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	Gross Salary - Teaching	900	990	1,287	1,416	1,557	1,713	1,884	2,073	2,280	2,508	2,759
2	Gross Salary -Non-Teaching	180	198	257	283	311	343	377	415	456	502	552
3	HouseKeeping Exp	120	132	145	160	176	193	213	234	257	283	311
4	Security Exp	48	53	58	64	70	77	85	94	103	113	124
5	Transpotation Exp	48	53	58	64	70	77	85	94	103	113	124
6	Electricity Exp	54	59	65	72	79	87	96	105	116	127	140
7	Electricity Exp Hostel	4	4	4	5	5	6	6	7	8	8	9
8	Hostel Rent	120	132	145	160	176	193	213	234	257	283	311
9	Facutly House Rent	48	53	58	64	70	77	85	94	103	113	124
10	Telephone and Internet	11	12	13	14	16	17	19	21	23	25	28
11	Civil Work	36	40	44	48	53	58	64	70	77	85	93
12	Office Exp	12	13	15	16	18	19	21	23	26	28	31
13	Municipal Tax	22	24	26	29	32	35	38	42	46	51	56
14	Advertisement Exp	6	7	7	8	9	10	11	12	13	14	16
15	Electrical Exp	2	3	3	3	4	4	4	5	5	6	6
16	Gym Exp	6	7	7	8	9	10	11	12	13	14	16
17	Honorarium Exp	6	7	7	8	9	10	11	12	13	14	16
18	Stationary & Postage Exp	5	5	6	6	7	8	9	9	10	11	12

19	Insurance Exp (Staff Only)	18	20	22	24	26	29	32	35	39	42	47
20	Laboratry Exp	6	8	9	12	15	18	23	29	36	45	56
21	Library Exp (subcription)	52	57	62	69	76	83	91	101	111	122	134
22	CPDA Grant Exp	60	66	73	80	88	97	106	117	129	141	156
23	LTC Exp	7	8	9	10	11	12	13	14	15	17	19
24	Other Misc Exp	60	66	73	80	88	97	106	117	129	141	156
25	Phd Student Stipend	54	59	65	72	79	87	96	105	116	127	140
26	New Hostel and Faculty Quarters Building and Extension of Campus											
a	House keeping Exp.				250	275	303	333	366	403	443	487
b	Security Exp				80	88	97	106	117	129	142	156
c	Electricity exp				150	165	182	200	220	242	266	292
d	Fire Safety and Lift Maintenance				5	6	6	7	7	8	9	10
e	Warden Salaries				15	17	18	20	22	24	27	29
f	Routine Campus Maintenance				25	28	30	33	37	40	44	49
g	Municipal Tax				3	3	4	4	4	5	5	6
h	Civil Work				8	9	10	11	12	13	14	16
	TOTAL	1,884	2,073	2,519	3,309	3,641	4,008	4,411	4,856	5,346	5,886	6,481

Annexure 2: Recurring Budget Projections considering New Academic Development Plan:

Amount in lakhs.

Sr. No.	Components	Year								
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	Gross Salary -Teaching	456	980	1,391	1,847	2,303	2,759	3,215	3,671	4,127
2	Gross Salary -Non-Teaching	132	284	403	535	667	799	931	1,063	1,195
3	Transportation Exp	-	25	76	101	126	151	176	201	226
4	Telephone and Internet	7	15	21	28	35	42	49	56	63
5	Office Exp	10	22	31	41	51	61	71	81	91
6	Advertisement Exp	3	6	9	12	15	18	21	24	27
7	Honorarium Exp	3	6	9	12	15	18	21	24	27
8	Stationary & Postage Exp	5	11	15	20	25	30	35	40	45
9	Insurance Exp (Staff Only)	4	9	12	16	20	24	28	32	36
10	Laboratory Exp	-	66	201	267	333	399	465	531	597
11	Library Exp (subscription)	-	20	61	81	101	121	141	161	181
12	CPDA Grant Exp	14	30	37	47	60	72	78	93	106
13	LTC Exp	16	26	33	52	58	75	98	102	118
	TOTAL	650	1,500	2,300	3,060	3,810	4,570	5,330	6,080	6,840