SELF ASSESSMENT REPORT (SAR)

For Accreditation of UG Engineering Program

BE – Civil Engineering (Tier-1)

Submitted to

National Board of Accreditation

New Delhi

By

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE

(A Grant in-aid Autonomous Engineering College Estd. in 1960)

(Approved from AICTE and Affiliated to RGPV & Barkatullah University, Bhopal)

NAAC Accreditated, UGC Autonomous

(An Autonomous Institute declared by RGPV, BU and Full fledged Autonomy by UGC)

Vidisha (M.P.)

: PHONES :

STD Code : (07592)

Registrar	**:** 251083, 250744, 250741	**E-mail**	**:** registrar@satiengg.org
E-mail	**:** sati@satiengg.org	**Website**	**:** www.satiengg.in
Steno to Director :	250121	**Fax**	**:** 250124

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SAMRAT ASHOK TECHNOLOGICAL INSTITUTE

(Engineering College)
Vidisha (M.P.)

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PART A: Institutional Information

1.	**Name and Address of the Institution**	:	Samrat Ashok Technological Institute (Engineering College), Civil Line, Vidisha (M.P.) 464 001
2.	**Name and Address of the Affiliating University**	:	Rajiv Gandhi Prodyogiki Vishwavidhyalya Airport Bypass Road, Gandhi Nagar, Bhopal, Madhya Pradesh 462036
3.	**Year of establishment of the Institution**	:	1960
4.	**Type of the Institution**	:	
	Institute of National Importance	:	☐
	University	:	☐
	Deemed University	:	☐
	Autonomous	:	☑ Year of Autonomy - 2010
	Any other (Please specify)	:	☐

Note:

1. In case of Autonomous and Deemed University, mention the year of grant of status by the authority.
2. In case of University Constituent Institution, please indicate the academic autonomy status of the Institution as defined in 12th Plan guidelines of UGC. Institute should apply for Tier 1 only when fully academically autonomous.

5.	**Ownership Status**	:	
	Central Government	:	☐
	State Government	:	☐
	Government Aided	:	☐
	Self financing		☐
	Trust		☐
	Society	:	☑
	Section 25 Company		☐
	Any other (Please specify)	:	☐

Provide Details:

The Institute "Samrat Ashok Technological Institute" is established by Maharaja Jiwaji Rao Education Society (MJES) on November 1, 1960 under the open door policy of Government of India. The society constituted a Board of Governors (BOG) which governs the Institute as per the rules, regulation of Government of India, State Government and AICTE. A managing committee has been constituted by the BOG to take decisions on behalf of the BOG.

Following are the members of the society:

S.N.	Name	Designation
1.	Shrimant Shri Jyotiraditya M. Scindia	President
2.	Sh. Motilal Vora	Vice President
3.	Dr. Laxmikant Markhedkar	Secretary
4.	Er. Ramesh Agrawal	Treasurer
5.	Justice (former) N.K.Modi	Member
6.	Dr. K.K. Agrawal, Founder Vice-Chancellor of Indraprastha University	Member
7.	Sh. Bharat C Chhaparwal, Ex-Vice-chancellor, DAVV, Indore	Member
8.	Sh. Prashant Mehta (IAS retd.)	Member
9.	Sh. Bimal Julka IAS	Member
10.	Sh. Mahendra Sethia (Industrialist), Indore	Member
11.	Dr. Anoop Raj (Educationalist) New Delhi	
12.	Finance Secretary, Govt. of MP	Member
13.	Principal Secretary, Technical Education & Skill Development, Govt. of MP	Member
14.	Dr. N.C. Shivaprakash (AICTE Nominee)	Member
15.	Dr. C.M. Chitle (UGC Nominee)	Member
16.	Vice-Chancellor, RGPV, Bhopal	Member
17.	Director	Member Secretary
18.	Institute Professor	Member
19.	Institute Professor	Member

The function for which the society is established are:

1. To administer and manage the funds which may be received from time to time from any sources what so ever for establishing institutions at Vidisha (Bhilsa) or elsewhere for imparting of technical, vocational or other type of education.
2. To establish and run an institution or institutions for imparting technical education in Civil, Mechanical, Electrical, Electronics, Computer Science, Information Technology, Telecommunication Engineering and other science & Technological subjects, to establish

and run vocational and other educational institution.

3. To acquire either by purchase, exchange, lease, gift or otherwise and to hold, shell receive the purchase money of convey assign, lease exchange and administer and utilize all such property wholly and completely in furtherance of the aims and ends of the society and for the achievement of any other object what so ever.
4. To layout and prepare for building purposes of the society and lands, acquired by or leased to the society.
5. To erector procure the erection of buildings, of any and all kinds upon any such lands as aforesaid and to alter, pull down improve, decorate maintain, furnish and do any other works on or for or in respect of all or any building in which the society may be interested.
6. To aid in the establishment and support of association for the benefit of persons employed by the society of in any way connected with the society.
7. To invest or land money whether belonging or entrusted to the society upon such manner as may from time to time be determined by the society.
8. To raise money or mortgage or change or in such other manner as the society shall think fit and in particular by the issue of debentures charged upon all or in any of the property of the society both present and future.
9. To apply the income and property when so ever derived towards the promotion of the objects set out above.
10. To do all or any of the above things either along or in conjunction with others and to do all other such things as the society may consider necessary, incident or conductive to the attainment of the above objects.
11. To raise or borrow money as may be required from time to time for the purpose of the society.

6. Other Academic Institutions of the Trust/Society/Company etc., if any:

Name of the Institution(s)	**Year of Establishment**	**Programs of Study**	**Location**
Samrat Ashok Technological Institute (Polytechnic)	1957	Diploma in Engineering	Vidisha (M.P.)

Table A.6

7. Details of all the programs being offered by the institution under consideration:

S.No	Programme	Name of the Department	Year of Start	Intake	Increase/ Decrease in intake, if any	Year of Increase /Decrease	AICTE Approval	Accreditation Status*
UG-Engineering								
1.	BE- Civil Engineering	Civil	1960	60			Yes	Accredited 2012-15
2.	BE - Mechanical Engineering	Mechanical	1960	30	120	2019	Yes	Accredited 2018-19 to 2020-21 1.23-25 Sept. 2011, 2.8-10 April 2015
3.	BE- Electrical Engineering	Electrical	1960	30	60	2001	Yes	Accredited 2012-15
4.	BE- Electronics & Instrumentation	EI	1985	30	120	2019	Yes	Accredited 2018-19 to 2020-21 & 2012-15

5.	BE- Computer Science Engineering	CSE	1988	30	120	2017	Yes	Not Accredited 1.23-25 Sept. 2011, 2.8-10 April 2015
6.	B.E. Electronics and communication	EC	2000	60			Yes	Not Accredited 8-10 April 2015
PG-Engineering								
7.	M.E. Construction Technology & Management	Civil	1997	18			Yes	Not Eligible
8.	M.E. Environmental Engineering	Civil	1999	18			Yes	Not Eligible
9.	M.E. Trasportation Engineering	Civil	2003	18			Yes	Not Eligible
10.	M.E. Advanced Production System	Mechanical	1993	18			Yes	Not Eligible
11.	M.E. Power Electronics	Electrical	1997	18			Yes	Not Eligible
12.	M.Tech CSE	CSE	2001	25			Yes	Not Eligible
Others Courses								
13.	M.Sc. Applied Chemistry	Chemistry	1972	25			Yes	--
14	Master in Business Administration	MBA	2001	30	60	2012	Yes	--

Table A.7

* ***Write applicable one:***

Applying first time

- Granted provisional accreditation for two/three years for the period(specify period)
- Granted accreditation for 5/6 years for the period (specify period)
- Not accredited (specify visit dates, year)
- Withdrawn (specify visit dates, year)
- Not eligible for accreditation
- Eligible but not applied

Note: Add rows as needed.

8. Programs to be considered for Accreditation vide this application

S.No.	Programme Name
1.	B.Tech. Civil Engineering

Table A8

9. Total number of employees:

A. Regular Employees (Faculty and Staff):

Items		CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)	CAYm3 (2016-17)

		Min	Max	Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	43	44	42	45	42	42	42	43
	F	06	06	06	07	06	06	06	06
Faculty in Maths, Science & Humanities teaching in Engineering Programs	M	09	09	09	09	09	09	09	09
	F	04	04	04	04	04	04	04	04
Non-Teaching Staff	M	130	131	131	138	57	57	62	62
	F	15	16	16	16	10	10	16	16

Table A9a

Note: Minimum 75% should be Regular/Full Time faculty and the remaining shall be Contractual Faculty/Adjunct Faculty/Resource Source from industry as per AICTE norms and standards.
The contractual Faculty will be considered for assessment only if a faculty is drawing a salary as prescribed by the concerned State Government for the contractual faculty in the respective cadre and who have taught over consecutive 4 semesters.

CAY – Current Academic Year
CAYm1- Current Academic Year minus1= Current Assessment Year
CAYm2 - Current Academic Year minus2=Current Assessment Year minus 1

B. Contractual Staff Employees (Faculty and Staff): (Not covered in Table A):

Items		CAY (2019-20)		CAYm1 (2018-19)		CAYm2 (2017-18)		CAYm3 (2016-17)	
		Min*	Max	Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	41	41	41	53	31	45	32	35
	F	17	18	17	21	17	20	18	18
Faculty in Maths, Science & Humanities teaching in Engineering Programs	M	05	06	06	06	02	04	02	02
	F	01	01	01	01	01	01	01	01

Table A9b

* NPIU faculty is to added

10. Total number of Engineering Students:

(i) Undergraduate-Engineering

Item	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)
Total no. of Boys	1520	1508	1583

Total no. of Girls	466	536	545
Total no. of Students	1986	2044	2128

Table A.10

(ii) Postgraduate-Engineering

Item	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)
Total no. of Boys	79	104	104
Total no. of Girls	16	35	50
Total no. of Students	95	139	154

Table A.10

(iii) Others (M.Sc., MBA and MCA)

Item	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)
Total no. of Boys	46	62	96
Total no. of Girls	85	97	111
Total no. of Students	131	159	207

Table A.10

(Instruction: The data may be categorized in tabular form separately for undergraduate, postgraduate engineering, other program, if applicable)

Note: In case the institution is running programs other than engineering programs, a separate table giving similar details is to be included.

11. Vision of the Institution:

To contribute towards service and development of the mankind through quality education and research, in the area of science and technology and Management.

12. Mission of the Institution:

To create quality manpower equipped with technical skills ,social values, leadership, creativity and renovation for the benefit and betterment of mankind and sustainable development of the nation.

13. Contact Information of the Head of the Institution and NBA coordinator, if designated:

i. Name : Dr. J.S. Chauhan

Designation : Director

Mobile No. : 9826244840

Email ID : director@satiengg.org

ii NBA Coordinator, if designated

Name : Dr. Sanjay Katarey

Designation : Professor

Mobile No. : 9826050049

Email ID : nba@satiengg.org

14. General Information of the Institute

Samrat Ashok Technological Institute, a premier institute of the region, was established on November 1, 1960 under the "Open Door" policy of the Government of India, by Maharaja Jiwajirao Education Society, Vidisha with a donation from the Gangajali Trust Fund of the Scindias, erstwhile rulers of the Gwalior state, and commitment of non-recurring grants from the Government of India and the Government of Madhya Pradesh in agreed proportions.

The Institute has completed its 57 glorious years. During the last 57 years, the institute grew up in a big way. The institute which was started with 3 UG programmes in Engg., now offers nine undergraduate courses in Engineering (B.E.), eleven Post graduate courses in Engineering (ME/M.Tech.), Master of Computer application (MCA), Master of Business Administration (MBA), four P.G. courses in Applied Sciences, and Full Time/Part-time Ph.D. programmes with approx 3000 students. Institute has academic autonomy status, recently Institute has got NAAC accreditation also. Institute has well qualified, experienced & dynamic faculty to impart the high quality education in Engg./Technology, Science and Management. There are well equipped modern laboratories, well stocked Digital E-Library, sports facilities and other facilities to meet academic, Co-curricular extra-curricular activities, and other requirements. MHRD, Govt of India, New Delhi, has selected this institute under the World Bank Scheme TEQIP-III with financial assistance of Rs. 15.00 crores. The objective of the scheme is to establish Academic Excellence in the institute through various activities and enhance the employability of UG/PG students.

Since its inception, Institute has played a significant role in developing human resources to meet the requirement of industries with high social values at home and abroad.

Campus

The college campus a few minute walk from the Railway station, is situated in Civil lines area of Vidisha a district headquarter. It spreads over 85 acres of lush green land with well maintained internal road and approaches, play ground, garden, administrative building, academic departments, workshop, hostels, residential quarters etc. Some of the highlights of the campus are:

- Well spread over 85 acres of lush green land with internal roads and approaches.
- Total built-up area of the institute in 34463 Sq. m.
- Embedded with all amenities required for a technical institute.
- Houses sixteen academic departments, other supporting sections, workshop etc.
- Residential zone for faculty and staff.
- Three boys and two girls hostel + one girls hostel under construction.
- Post office, Two Banks, ATM, Cooperative store, Canteen, Dispensary, Central Reprographic Centre.
- Enclosed by RCC boundary wall
- One guest house, one alumni Transit House
- Indoor Auditorium of 600 capacity and open auditorium
- Own 33 KVA/400 Volt power sub station
- Overhead tanks, internal water supply pipeline, tube well etc.
- Sports complex with all indoor and outdoor sports facilities

- Round the clock security
- Power backup with two 62.5 KVA and one 200 KVA Generator sets.

PART B: Program Level Criteria

CRITERION 1	**Vision, Mission and Program Educational Objectives**	**50**

1.1. State the Vision and Mission of the Department and Institute (5)

Vision of the Institute :

To contribute towards service and development of the mankind, through quality education and research in the area of Science, Technology and Management.

Mission of the Institute :

To create quality manpower equipped with technical skills, social values, leadership, creativity, and innovation for the benefits, betterment of mankind and sustainable development of the nation.

Vision of the Civil Engineering Department :

To be the fountainhead of new ideas, innovations and to provide necessary knowledge, skill and guidelines to the society in the field of Civil Engineering

Mission of the Civil Engineering Department :

To foster & sustain world-class education and research facilities at an affordable price**,** so as to develop quality civil engineering infrastructure in our country and abroad.

1.2. State the Program Educational Objectives (PEOs) (5)

PEO -1 :

Technical Knowledge -Provide student with a solid foundation of technical knowledge ranging from fundamental principles to state-of-the-art technologies and the skills abilities

PEO-2 :

Complementary knowledge -Ensure that students compliment their technical knowledge with a broad understanding of liberal arts and social sciences

PEO-3 :

Professional Preparation -Provide regular and special instruction on communication, leadership/management skills, principles of ethics and other subject that prepare the students for

their professional career.

PEO -4 :

Student Quality -Attract outstanding students interested in the field of civil engineering **Facilities** -Maintain & upgrade Classroom and Laboratory facilities and development of new to support programme modernization.

1.3. Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)"

Vision and Mission are being displayed at various key locations of the Department, published in Institute's brochure and have been uploaded on the college website.

External Stake Holders -

1. Parents

2. Employers

3. Industry

4. Alumni

5. Various funding agencies like, AICTE, UGC, etc

Internal Stake Holders -

1. Management - MJES (Maharaja Jivajirao Education Society)
2. Government of Madhya Pradesh
3. Faculty members
4. Non-Teaching Staff
5. Students

1. The mission and vision of the Institute is published on the Institutional website.

(www.satiengg.in) so that all the stakeholder's and future students can have access to it.

2. The mission and vision is being displayed at prominent locations in the campus which can be viewed by students, parents, faculty members and others.

3. For newly admitted students, institute organizes orientation program in which they get information about the Institutional profile.

4. College Brochure

The Vision, Mission and PEO's of the department are disseminated through :

1. Departmental Notice Boards

2. Faculty's Cabins

3. Departmental Laboratories

4 Civil Engineering Department Website

(http://www.satiengg.in/Departments/Department_Home.aspx)

5. Class rooms & Tutorials rooms

6. Institute's Workshop

7. Seminar rooms

8. Department Library

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

PEOs have been established on the basis of interactions that are regularly held with

i. Alumni

ii. Industries

iii. Students

iv. Government organizations

v. Recruiters

Process for defining the Vision and Mission of the Department

1. Study of the basic aim, objective and theme of the Vision and Mission of the Institute.

2. SWOT analysis has been conducted by considering internal stakeholders including management and alumni.

3. On the basis of this, the department tried to develop Vision and Mission of the Civil Engineering Department.

4. The Department circulated necessary information among the stakeholders to develop the Vision and Mission of the Department.

5. Finally, the committee headed by Head of the Department (HOD) finalized Vision and Mission of the Department.

1.5. Establish consistency of PEOs with Mission of the Department (10)

(*Generate a "Mission of the Department – PEOs matrix" with justification and rationale of the mapping*)

PEO Statements	M1 Education	M2 Research	M3 Quality (skill)	M4 Affordable Price
PEO-1: Technical Knowledge - Provide students with a solid foundation of technical knowledge ranging from the fundamental principles to the state-of-the-art technologies and the skill abilities.	3	2	3	3
PEO-2: Complementary Knowledge -Ensure that students complement their technical knowledge with a broad understanding of liberal arts and social sciences.	3	1	3	3

PEO-3: Professional Preparation-Provide regular and special instructions on communication, leadership management skills, principles of ethics and other subjects that prepare the students for their professional career.	3	2	2	3
PEO-4: Student Quality-Attract outstanding students interested in the field of civil engineering Facilities-Maintain & upgrade Classroom and Laboratory facilities and develop new facilities in order to support programme modernization.	3	1	2	3

Table B.1.5

Note: M1, M2, . . Mn are distinct elements of Mission statement. Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

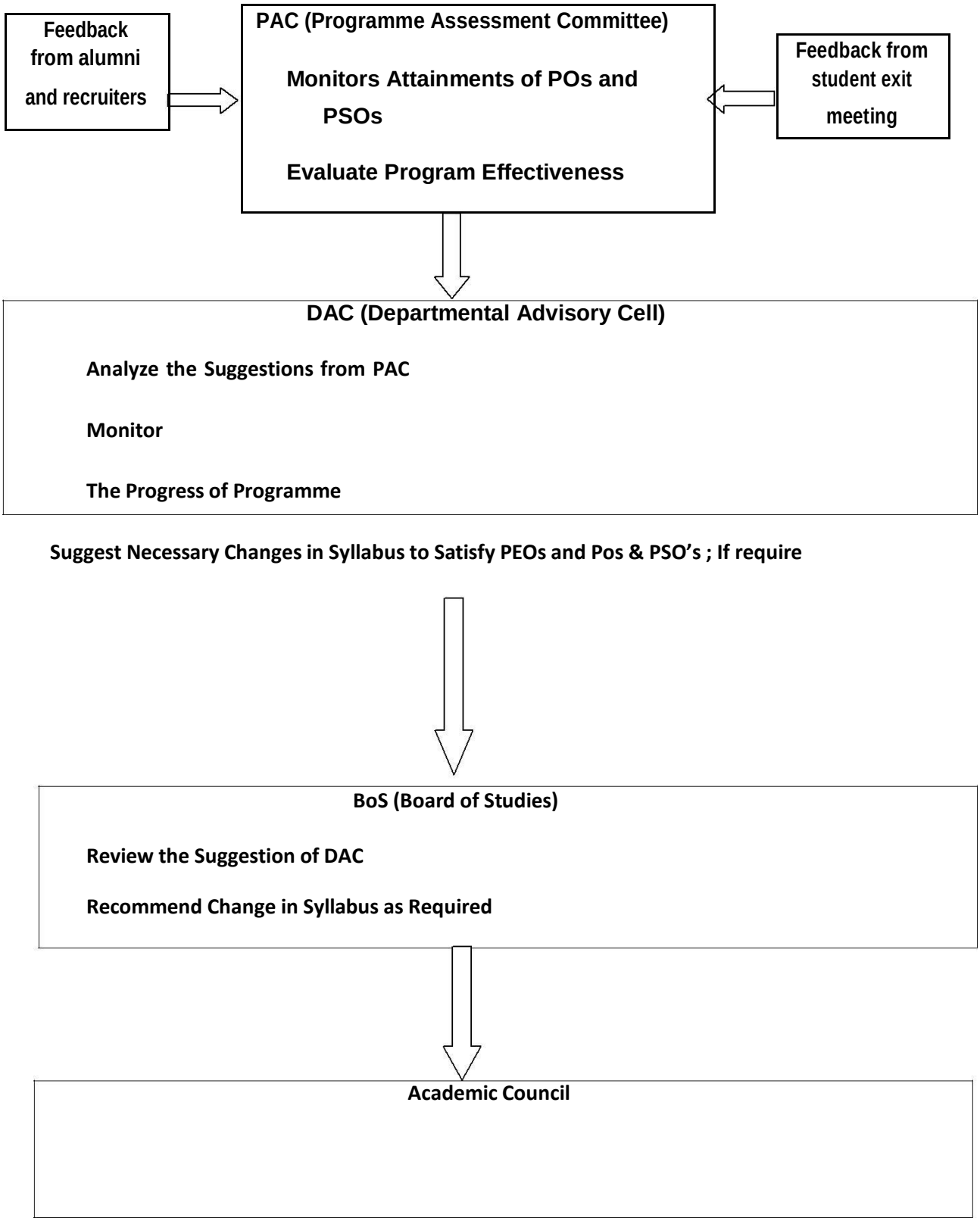
If there is no correlation, put "-"

Note: Wherever the word "process" is used in this document its meaning is process formulation, notification to all the concerned, and implementation

CRITERION 2	Program Curriculum and Teaching – Learning Processes	100

2.1. Program Curriculum (30)

2.1.1. State the process for designing the program curriculum (10)



Approve the Recommendation of BoS

2.1.2. Structure of the Curriculum (5)

Course Code	Course Title	Total No. of Contact Hours				Credits
		Lecture (L)	Tutorial (T)	Practical# (P)	Total Hours	
BT-1811	Engineering Chemistry	3	-	2	5	4
BT-1812	Basic Electrical & Electronics Engineering	3	-	2	5	4
BT-1813	Engineering Graphics	3	-	2	5	4
BT-1814	Communication Skills Engg.	3	-	-	3	3
BT-1815	Engineering Mathematics-I	3	1	-	4	4
BT-1816	Manufacturing Practices	-	-	2	2	1
BT-1821	Engineering Physics	3	-	2	5	4
BT-1822	Basic Civil Engineering & Engineering Mechanics	3	-	2	5	4
BT-1823	Basic Mechanical Engineering	3	-	2	5	4
BT-1824	Energy, Environment Ecology & Society	3	-	-	3	3
BT-1825	Engineering Mathematics-II	3	1	-	4	4
BT-1826	Computer Programming	-	-	2	2	1
BT-1831	Building Material & Construction	3	1	-	4	4
BT-1832	Mechanics of Materials	3	-	2	5	4
BT-1833	Building Planning Architecture	3	-	2	5	4
BT-1834	Surveying and Geomatics	3	-	2	5	4
BT-1835	Engineering Mathematics-III	3	-	-	3	3
BT-1836	Language lab	-	-	2	2	1
BT-1837	Evaluation of Internship – I completed at I year level & Seminar (personality development)	-	-	4	4	2
BT-1841	Engineering Economics	3	-	-	3	3
BT-1842	Quantity Surveying & Costing	3	1	-	4	4
BT-1843	Geology & Concrete Technology	3	-	2	5	4
BT-1844	Fluid Mechanics - I	3	-	2	5	4
BT-1845	Transportation Engineering- I	3	-	2	5	4
BT-1846	Instrumentation and Sensor Technology for Civil Engg.	-	-	2	2	1
BT-1851	Transportation Engineering- II	3	-	-	3	3

BT-1852	Fluid Mechanics -II	3	-	2	5	4
BT-1853	Structural Design & Drawing - I (RCC)	3	-	2	5	4
BT-1854	Structural Analysis -I	3	1	-	4	4
BT-1855	Advance Surveying	3	-	2	5	4
BT-1856	Civil Engg. Software lab.	-	-	2	2	1
BT-1857	Internship – II (Evaluation) (personality development)	-	-	4	4	2
BT-1861	Structural Design and Drawing- II (Steel)	3	-	2	5	4
BT-1862	Geotech. Engineering - I	3	-	2	5	4
BT-1863	Environmental Engg. - I	3	-	2	5	4
BT-1864	Structural Analysis- II	3	-	-	3	3
BT-1865	Hydrology & Water Resources Engineering	3	-	-	3	3
BT-1866	Minor Project-I	-	-	4	4	2
BT-1871	Elective - 1	3	1	-	4	4
BT-1872	Elective – 2	3	1	-	4	4
BT-1873	Elective - 3	3	-	-	3	3
BT-1874	Irrigation & Hydraulic Structure	3	-	-	3	3
BT-1875	Advanced Structural Design	3	-	-	3	3
BT-1876	Geo Technical Engineering – II	-	-	2	2	1
BT-1877	Advanced Structural Design	-	-	4	4	2
BT-1878	Major Project Prelim	-	-	4	4	2
BT-1881	Elective - 4	3	-	-	3	3
BT-1882	Construction Planning & Management	3	-	-	3	3
BT-1883	Major Project final	-	-	16	16	8
Total		**111**	**7**	**84**	**202**	**160**

2.1.3. State the components of the curriculum (5)

Course Component	Curriculum Content (% of total number of credits of the program)	Total No. of Contact Hours	Total Number of Credits
Basic Sciences	11.9	21	19
Engineering Sciences	11.3	24	18
Humanities and Social Sciences	6.3	11	10
Program Core	43.1	81	69
Program Electives	8.7	14	14
Open Courses	5.6	9	9

Project(s)	7.5	24	12
Internships/Seminars	3.1	10	5
Any other (Please specify)	2.5	8	4
Total number of Credits			**160**

2.1.4. State the process used to identify extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I (10)

This institute is Grant –in-Aid an autonomous engineering college Institute has been

Accorded academic autonomy by Rajiv Gandhi Prodyogiki Vishwavidyalaya vide letter No. F-

5/RGPV/Academic/Autonomy/2011/59, Bhopal, Dated 07.01.2011 w.e.f. session 2010-11.

Accorded autonomy by University Grant Commission, New Delhi vide letter No. F. 22-1/2015(AC), New Delhi, Dated 01.05.2015 w.e.f. session 2015-16.

Accorded autonomy by Barkatullah University Bhopal vide letter No. 1618/Academic/Affiliation/2015, Bhopal, Dated 09.07.2015 up to 2020-21.

The course curriculum of Civil Engineering departmental has been developed by the department.

Following is the process used to identify extent of compliance of curriculum for attaining the POs and PSOs.

Identify Course Outcomes for each subject

Map each Course Outcome with POs and PSOs

Based on All CO-POs/PSOs mapping, Map subject with POs and PSOs

Categorize entire Curriculum into Core Courses, Science & Humanities, Programming, Inter Disciplinary, Projects / Lab Practices

Map each category with POs and PSOs

2.2. Teaching-Learning Processes (70)

2.2.1. Describe Processes followed to improve quality of Teaching & Learning (15)

Following steps were taken:

- Training of Teachers was done with the help of organizing seminars at college level.
- Teachers were encouraged to attend various training held at NITs/IITs.
- Academic calendar were strictly followed and course files were periodically checked.
- Make up tests and doubt sessions for weak students were executed.
- Department follows the academic calendar provided by the academic section of institute. It consists of the activities planned for the semester which includes internal test dates, laboratory and end examination schedules etc.
- Subject allotment is done well in advance for the staff members to prepare lesson

- plans, course plan, soft and/or hard copies of the lecture notes.
- E-learning facility (using NPTEL based Lecture CD, MOOCS) is made available for skill development of the Students.
- Experiments in the laboratories are conducted as per the syllabus of the subject. Some discussions are made beyond syllabus relevant to the course. Laboratory manuals explaining the details of the experiment are available with the course teacher and are given to students during the semester
- The faculty of department adopts various innovative Teaching & Learning methodologies to create the best learning environment for student. These methodologies include traditional chalk & talk methods, presentations, video lecturing, collaborative learning methods are used where every concept is explained with real world illustrations, design and problematic aspects.
- Faculties are now oriented towards Outcome based Education (OBE) and are actively utilizing the OBE to cater the learning needs of students by innovative ways.
- Lecture Session duration is 60 minutes. Laboratory duration is 120 minutes.

  Assignments are given to students for their better performance.
- Invited talks and seminars on the current trends are done regularly from the industry persons and/or academia.
- Tutorial/Remedial classes are conducted to bridge the curriculum GAP as well as to support the slow learners based on their performance in external exams and after the first internals.
- Motivating and guiding students for higher studies and university ranks.
- Industrial visits are conducted to reduce the gap between industry and institute.
- Workshops are organized to help the students to understand concepts beyond curriculum.
- Mentoring sessions are conducted to provide guidance to students towards achieving professional fulfillment and assessment of his/her academic progress as well as personal growth. One-one discussion, interaction between Professors and students has increased confidence levels of the students.
- Identification of bright and weak students. Motivate the weak students to attend tutorials and help them solve more problems. Encourage the bright students to attend more workshops and technical talks.

2.2.2. Quality of end semester examination, internal semester question papers, assignments and evaluation (15)

Following steps were taken:

a. Unit-wise assignments were prepared as per the learning objectives of Bloom's Taxonomy.

b. Question papers were prepared as per the learning objectives of Bloom's Taxonomy.

c. CO attainments were analyzed.

End Semesters Examinations

While setting the question paper all previous university exam papers are taken into consideration.

According to level of toughness the questions are prepared (viz., analyzing the problems, implementation of modern tools, formulating the problems etc), which is termed as Bloom's Taxonomy.

The questions will be of three categories:

One third of the questions is straight and can be answered by all students.

One third of the questions need analysis and use of content covered as per syllabus.

Remaining one third of the questions is not straight. Certain amount of thinking, analysis and mathematical knowledge are required to resolve**.**

Internal Semesters Questions papers

Internal semester question papers are prepared considering the standards of GATE, PSU entrance, and other institutions.

Assignments are given to the students in such a fashion that they have to solve the problem themselves by self-learning methods.

The Civil Engineering department conducts two internal assessment tests as per academic calendar.

The tests are conducted for a maximum of 20 marks.

The duration of the test is one hour and question paper are set to make the student to learn time management.

Blooms Taxonomy is followed while setting the internal exam question papers.

Assignments:

Assignment issue and submission dates are announced by the respective faculty members.

Assignment questions are prepared using Bloom's Taxonomy process in relation with COs.

In order to bridge the gap in curriculum, bright students are given some assignment beyond syllabus.

Evaluation:

The faculties after every internal assessment test they explain the solution of the questions in the class which will enable them to perform well in the final examination.

For any genuine reasons, if a student was unable to perform well in the given two internal assessment tests, Make up test is given to him/her.

The average of the marks obtained from best two tests is chosen for the award of internal assessment marks.

Assignments are used as a tool for practice and evaluation is based purely on Internal Assessment Test

2.2.3. Quality of student projects (20)

The student's projects are selected in line with department mission, vision Program outcomes

& Program specific outcomes.

Students are provided with brief idea of various fields for selecting the project ideas

The faculties encourage the students to carry out in house projects and support will be provided with all necessary software and hardware.

The faculties encourage students to publish their project work in reputed journals/conferences.

Approach of project preparation is as follows;

Students are briefed about the objectives, outcomes & specific outcomes of the projects and steps to be followed.

Selection of area in which students are interested to do the project. Literature survey

Identification of
Project Allotment

Manufacturing / Prototype making Collection of Data

Analysis of Data

Conclusion of the Project

Future scope of work Project works are evaluated as per the schedule

Implementation

A project coordinator is appointed by the Head of the department who is responsible for planning, scheduling and execution of all the activities related to the student project work.

Timeline Task Particulars

SEMESTER SEVEN

Timeline	Task	Particulars
12th week	Call for project batch	Students are invited to prepare their batch and get it registered with the project coordinator of the department. The student submitting project titles are pre evaluated by a team of experts
14th week	Synopsis Submission	The submitted project titles are reviewed by a committee consisting of Project coordinator, Head of the department and experts

SEMESTER EIGHT

Timeline	Task	Particulars
1st week	Guide allotment	Guide will be allotted based on areas of interest.
4th week	First Review	Students are instructed to submit requirement

		specification and give a PowerPoint presentation for the project. (Evaluation phase I by a team of faculty)
8th week	**Second Review**	**Students are instructed to submit Design document of the project and give a PowerPoint presentation for the project. (Evaluation phase II by a team of faculty)**
12th week	**Final Demonstration**	**Students are instructed to submit complete project report with university compliance and give a PowerPoint presentation for the project. (Evaluation phase III by a team of faculty)**

Sr No.	Project Name	Relevance with PO's	Relevance with PSO's
1.	Treatment of Waste Water of Pulp & Paper Industry	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
2.	Disposal of Munsipal Waste Water By Karnal Process	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
3.	Design & analysis of Multistorey Building	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
4.	Study on Global Warming & its Effect	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
5.	Common Treatment Plant for Industrial Waste	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
6.	Design of Steel Truss Girder Bridge	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
7.	Redesigining the water Treatment Plant at Kolar Dam	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
8.	Rural Road	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
9	Design of Rigid Pavement	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
10	Computer Assisted Analysis of Prestressed Concrete Bridge	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO2
11	Advance Instrumentation in Hydrology	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1
12	Design of Flexible Pavement using Modified polymer soil	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1

13	Design of Steel Truss Girder Bridge	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1

2.2.4. Initiatives related to industry interaction (10)

Industry experts were periodically invited to share their expectations and skills from the prospective employees.

S.No.	Title	Name of Faculty	Institute
(International)			
1	Trenchless Technology	-	Jason Consultant Ltd.
2.	Role of I.T. in Construction	Prof. Christian Kiysander	
3.	Heavy Equipments	Udo Schmidt	Director, Besser GmbH,
(National)			
4.	Irrigation Structure	Prof. U.C. Chaubey	IIT Roorkee
5.	Pre-fabrication and elements	Dr. R.N. Munshi	Former Director NICMAR,
6.	Improved Building Materials and Construction Technologies	Dr. S.G. Dave	Scientist Coordinator, CBRI Roorkee
7.	Earthquake resistant Housing, Cyclone-resistant Housing	Dr. Rajesh Deoloiya	Scientist, CBRI Roorkee
8.	Ferrocement Products and Applications,Quality Assurance	Dr. S.K. Singh	Scientist, CBRI Roorkee
9.	Demonstration at Building Centre Platform	Shri H.K. Jain	Scientist, CBRI Roorkee
10.	Low-cost Sanitation	Mohd. A. Nadeem	Scientist, CBRI Roorkee
11.	Demonstration at Building Centre Platform	Shri Prem Lal	Scientist, CBRI Roorkee
12.	Intelligent & Green Building Material	Prof. Pavan Arora	B.R.T.S. bhopal

13.	Intelligent & Green Building Materials	Prof. S.K. Kattiyar	MANIT, Bhopal
14	Intelligent & Green Solution for Municipal Solid Waste Management	Prof. M.K. Nema	Head, Civil Engg. Deptt., Govt. Poly. Tech. College, Ashok Nagar
15.	Sustainable Construction – Road Map to a Green Tomorrow	Mr. Michael Scharpf,	HeadSustainable Construction,Holcim, Switzerland
16.	Applications and Benefits of Advance Concrete	Dr. Ravindra Gettu	Proffesor, IIT Madras
17.	Transportation Engg.	Er. Vinay Rajawat	SE, M.R.T & H., New Delhi
18.	Quality Assurance of Cement Concrete Roads in M.P.	Dr. Binod Kumar	CRRI, New Delhi

2.2.5. Initiatives related to industry internship/summer training (10)

Minor and Major training are compulsory and arranged for the students. Students were issued letter of internship were issued and other necessary help is provided by the college.

Industry based projects to be taken up

- MoU's has been signed with C.P.W.D. (M.P.) as a third party consultant through which revenue is generated and also our students are benefited in terms of their project works.
- Department is continuously involved in consultancy, testing and R&D Works.

CoE Activities

National Retrofitting Centre – Investing in Safety of Built Environment"

Major areas of activity of the project

- Earthquake Resistant Construction of New Structures
- Selective Seismic Strengthening & Retrofitting of existing Priority Structures and Lifeline Structures
- Regulation and Enforcement
- Awareness & Preparedness
- Capacity Development (Education, Training, R&D, Capacity Building and Documentation)
- Emergency Response

3.1. Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (25)

Program Outcomes were picked up from the Annexure I (predefined by NBA) and Program Specific Outcomes were defined by the Program. All the subjects from third till eight semesters are used to demonstrate the mapping/correlation with all POs and PSOs.

PROGRAM OUTCOMES (As provided in Annexure-I)

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs).

Engineering Graduates will be able to:

1. To carry out work in the field of low cost housing by exploring cost effective materials and related technologies.

While filling the Course Articulation Matrix, correlation level between a particular Course outcome (CO) and Program Outcome (PO)/Program Specific Outcome (PSO) is decided by individual faculty based on his own discretion and discussed amongst the department members. Correlation levels 1, 2 or 3 being defined as below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

After deciding correlation level for different Course outcomes (COs) of a particular course with the Program Outcomes (POs)/Program Specific Outcome (PSOs), average of the assigned correlation level in found out for a particular Program Outcome (PO)/Program Specific Outcome (PSO) as shown in Program articulation matrix below.

NOTE- The third digit of the course code shows the semester in which the course is being run. For example: CE-1731 is a course run in 3rd semester in Civil Engineering (CE) Department.

Program Articulation Matrix														
S. N.	**Course**	**Course Title**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**
1	CE-1731	Building Planning Architecture	3.00	2.17	2.50		3.00	2.83			3.00		2.60		1.00
2	CE-1732	Engineering Geology and Remote Sensing	3.00	2.33	1.00	1.00		1.00	1.00						1.00
3	CE-1733	Strength of Materials	3.00	3.00	3.00	2.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00
4	CE-1734	Building Materials & Construction	1.67	1.67										3.00	3.00
5	CE-1736	CAD Lab (AutoCAD)	1	2	2		3				2	1			1
6	CE-1737	Seminar and Entrepreneurship				1	1	3	2	2	3	3	3		
7	CE-1741	Concrete Technology	3.00	2.83	2.67			2.83			2.67		2.60		1.00
8	CE-1742	Surveying	2.60	2.40	2.40			2.00	2.00	2.00	1.50	2.00		1.00	
9	CE-1743	Fluid Mechanics – I	3.00	2.75	2.33	2.67	1.67	1.25	1.00	1.33	2.33	2.00	1.50	1.33	
10	CE-1744	Quantity Surveying & Costing	3.00	3.00		1.00							1.00	1.00	
11	CE-1745	Transportation Engg. –I	3	1.67	1.33	1	1	1							1
12	CE-1746	Computer Programming Lab	1	1	1	1	3				1	1		3	
13	CE-1747	Aptitude and Logical Reasoning		1	1						1			1	
14	CE-1751	Transportation Engineering –II	2.67	1.83	2.00	1.50		1.50	1.00	1.00	1.00		2.00	1.67	1.00
15	CE-1752	Adv. Surveying	2.80	2.80	2.60	1.00		1.00	1.00		1.00	1.00		1.00	
16	CE-1753	Structural Design & Drawing–I (RCC)	3.00	3.00	3.00	2.50						3.00			
17	CE-1754	Fluid Mechanics –II	2.75	2.25	3.00	2.00		1.00		1.00				2.00	
18	CE-1755	Structural Analysis – I	3.00	3.00		3.00	2.75				1.00	1.00		2.00	
19	CE-1756	Construction Lab. (STAAD Pro)	3.00	2.00			3.00				2.00				
20	CE-1757	Minor Industrial Training	1.00	1.00	1.00					3.00		3.00	3.00		

21	CE-1761	Structural Design & Drawing – II (Steel)	3.00	3.00	3.00	2.50						3.00		1.00	
22	CE-1762	Structural Analysis – II	3.00	3.00		3.00	3.00				1.00	1.00		2.00	
23	CE-1763	Environmental Engineering & Waste Management	3.00	2.17	2.00	1.60	1.50	2.17	2.17	1.33	1.60	1.33	1.20	1.33	1.33
24	CE-1764	Geo Technical Engineering – I	3.00	2.75	2.33	2.25	1.00	1.75	2.00	1.00	1.75	2.00	1.00	2.00	1.00
25	CE-1765	Water Resource Engg.	3.00	2.33	2.33			2.00	2.00						
26	CE-1766	Minor Project-I	3.00	3.00	3.00	3.00		3.00	2.00	3.00	3.00	3.00	3.00	2.00	
27	CE-1767	Technical & Professional Skill	1.00	1.00	1.00	1.00						3.00			
28	CE-1771	Advanced Structural Design	3.00	3.00	3.00	3.00		1.00			2.00	3.00			
29	CE-1772	Geo Technical Engineering – II	3.00	2.50	2.00	2.25	1.00	2.00	2.00	1.33	2.00	1.00	1.00	2.25	1.00
30	CE-1773	Construction Planning & Management	3.00	3.00	3.00						3.00				
31	CE-1774	Elective – I	3.00	2.40	2.20	1.60	1.60	2.20	2.20	1.40	1.50	1.40	1.20	1.40	3.00
32	CE-1175	Elective – II	2.80	1.80	2.00	1.50		1.50		1.00			2.00	2.00	1.00
33	CE-1176	Minor Project-II	3.00	3.00	3.00	3.00		3.00	2.00	3.00	3.00	3.00	3.00		
34	CE-1177	Tour/Training	1.00	1.00	1.00					3.00		3.00	3.00		
35	CE-1781	Elective – III	3.00	3.00	3.00	3.00									
36	CE-1782	Elective – IV	3.00	3.00	3.00										
39	CE-1185	Major Project-II	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	**3.00**
40	CE-1186	General Proficiency		1.00	1.00										

Course Articulation Matrix														
Strength of Materials (CE-1733)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Develop an understanding of the engineering fundamentals of structural mechanics of deformable bodies.	3	3											
2	Develop competence in problem identification, formulation and solution for strength of materials problems.	3	3				1							1
3	Utilize appropriate material in design considering engineering properties, sustainability, cost and weight.	3	3	3	2		1	1	1				1	1
4	Design simple bars, beams & circular shafts for allowable stresses & loads.	3	3	3	2	1	1		1		1		1	1
5	Determine stress, strain, deflection, rotation etc. in members subjected to combination of loading.	3	3	3	2	1	1		1		1		1	**1**
6*	Compare the difference between theoretical and practical values of different strength parameters and verify different theorems.	3	3		2		1							

Course Articulation Matrix (CE-1734)														
Subject : Building Materials & Construction														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	To identify various building materials and select suitable type of building material for given situation and also the emerging materials in the field of Civil Engineering construction	2	2										3	**3**

2	To select suitable type of foundation and various types of brick masonry, door and windows for buildings.	2	2											3
3	Classify different types flooring and arch geometry and building repair work	1	1											

Course Articulation Matrix													
Subject : Surveying (CE-1742)													
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Carry out preliminary surveying in the field of civil engineering application such as structural, highway engineering geotechnical engineering.	3	3	3										
2	Plan a survey, taking accurate measurements, field booking, plotting and adjustments of traverse	3	3	3			2	2						
3	Use various conventional instruments involved in surveying with respect to utility and precision	3	2	2										
4	Plan a survey for application such as road alignments and height of the building	3	3	3			2	2					1	
5	Undertake measurement and plotting in civil engineering	1	1	1						1			1	
6*	Undertake different kinds of surveys by the use of surveying instruments.								2	2	2			

Course Articulation Matrix														
Subject : Fluid Mechanics-1 (CE-1743)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Develop the basic equation of fluid statics to determine forces on plane and curved surfaces that are submerged in a static fluid.	3	2	1		1	2	1	2	2	2		1	
2	Develop an ability to apply the concepts of fluid flow analysis.	3	3	3	3	2	1	1	1	2	2	2	1	
3	Develop fundamental knowledge of mathematics to modelling and analysis of fluid flow problems in civil engineering.	3	3	3	3	2	1	1	1	3	2	1	2	
4*	Compare the difference between theoretical and practical values of different flow parameters and calibrate the respective equipment accordingly.	3	3		2		1							

Course Articulation Matrix														
Subject : Structural Design & Drawing–I (RCC) (CE-1753)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Design various reinforced concrete elements by working stress and limit state method	3	3	3	2	-	-	-	-	-	-	-	-	-
2	Interpret the appropriate relevant industry design codes	3	-	-	-	-	-	-	-	-	-	-	-	-
3	Familiar with professional and contemporary issues in the design and fabrication of reinforced concrete members	3	3	3	3	-	-	-	-	-	-	-	-	-
4*	Draw detailed drawings of various designed elements of building	-	-	-	-	-	-	-	-	-	3	-	-	-

Course Articulation Matrix														
Subject :Structural Analysis – I (CE-1755)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Learn and understand the basic principles and theorems of structural analysis.	3	3		3	2				1	1		2	
2	Perform complete analysis of determinate and indeterminate beams and frames by using various classical methods.	3	3		3	3				1	1		2	
3	Analysis various types of arches and suspension cables subjected to various types of loadings.	3	3		3	3				1	1		2	
4	Draw influence line diagrams for beams, girders, frames and other indeterminate structures which will form a basic for the analysis for moving loads.	3	3		3	3				1	1		2	

Course Articulation Matrix														
Subject :Structural Analysis – II (CE-1762)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Understand various classical and matrix methods of structural analysis for determinate and indeterminate structures. Also, he/she will be able to understand the basic of plastic analysis of structures.	3	3		3	3				1	1		2	
2	Perform analysis of various civil engineering structures for static and dynamic loadings	3	3		3	3				1	1		2	
3	Understand the influence line method for indeterminate structures.	3	3		3	3				1	1		2	

4*	Perform experiments to calculate various strength parameters and also verify various theorems	3	3		3	3				1	1		2	

Course Articulation Matrix														
Subject :Water Resource Engg. (CE-1765)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Identifies the various components of hydrologic cycle that affect the movement of water in the earth and various Stream flow measurements technique and also planning and management of water resources	3	2	2			2							
2	Demonstrates the basic requirements of irrigation and various irrigation techniques, requirements of the crops and soil-water –crop relationship	3	3	2				2						
3	Plan the basics of design of unlined and lined irrigation canals and distribution systems for canal and well irrigation	3	2	3										

Course Articulation Matrix														
Subject: Geo Technical Engineering – II (CE-1772)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Estimate bearing capacity using SI code methods.	3	3	2	2	1	2	2	2	3	1		2	**1**
2	Design proper foundation, pile and pile group for any kind of soil including group efficiency and negative friction.	3	3	2	3	1	1	1	1	2	1	1	2	1
3	Study of soil stabilization	3	2	2	2		2	3	1	1	1		2	1
4*	Determine the engineering properties of various types of soils.	3	2	2	2	1	3	2		2			3	1

Course Articulation Matrix														
Subject: (Elective-III) Computational Methods in Structural Analysis (CE-1781)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Understand the fundamentals of matrix methods with a focus on direct stiffness method	3	3	3	3	-	-	-	-	-	-	-	-	-
2	Analyse building frames (2D and 3D), building and bridge trusses, grid floor- building and bridges, or any discreet structure and continuum structures like water tank, dams, retaining walls etc	3	3	3	3	-	-	-	-	-	-	-	-	-
3	Take up any project, prepare its model and analyze it	3	3	3	3	-	-	-	-	-	-	-		-

Course Articulation Matrix														
Subject: Major Project-II (CE-1783)														
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**
1	Understand, analyze and provide solution for real life problems related to civil engineering	3	3	3	2	2	2	2	2	2	2	2	2	3

3.2. Attainment of Course Outcomes (75)

3.2.1. Describe the assessment tools and processes used to gather the data upon which the evaluation of Course Outcome is based (10)

1. ASSESSMENT TOOLS

End semester & Mid Semester Exam: (Direct Assessment)

- The Subject teacher will design assignment questions/laboratory problems/projects and distributes them to the students.
- During persuasion of the course, the subject teacher will conduct 2 Mid Semester tests as per the academic calendar in a given semester

Practical Exam Evaluation: (Direct Assessment)

- The subject teacher will take practical examination of the subject. The students have to give Quiz test and practical Viva in the presence of External Examiner. The students obtain less than 50% marks will considered as fail in respective practical Examination

Seminar Work Evaluation: (Direct Assessment)

- Seminar coordinators follow rubrics, which is set by the Department for evaluation of laboratory programs.
- All seminar coordinators will conduct 2 seminars per student. It will be evaluated by the seminar coordinator and marks will be submitted to the Department.

Project Work Evaluation: (Direct Assessment)

- During project work, the evaluation process will be divided into number of the phases to assess the continuous progress.
- The project guides and project coordinator follow rubrics, which is set by the Department for evaluation and then submit to the head of Department.
- Each internal guide will see the statement of project and literature of work and implementation details. The department will encourage students to make publications in standard conference/journal forums.

Course Exit Survey (In-Direct Assessment)

2. PROCESS

Process used for attainment of course outcome are as follows

- First Bench Mark is finalized by concern teacher for End Semester , Mid Semester Examination, assignment, tutorials etc.
- Percentage attainment is calculated by counting the number of students scoring benchmark and above divided by total no. of students for various assessment tools.
- Attainment levels have to be calculated
  50% students scoring more than benchmark ---Level-1
  60% students scoring more than benchmark ---Level-2
  70% students scoring more than benchmark ---Level-3
- Direct Assessment Course Outcome Attainment is calculated by considering the weight age of 70% for End Semester and weight age of 30% for Mid Semester Examinations, assignment, tutorials etc.
- Indirect assessment tools are also used for CO Attainment Calculation based on course exit survey
- Calculating the attainment level of Overall Course Outcome (Direct Assessment + Indirect Assessment) by considering the weight age of 80% for direct assessment and weight age of 20% for indirect Assessment.

3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels (65)

Measuring Course Outcomes attained through Examinations

Calculation for Attainment of CO for CE-1754 (Fluid Mechanics-II) is done. Calculations for shown below for reference purpose.

Mid Sem Marks Map with CO's

Sr. No.	Enrollment No.	Name	Q1	Q2	Total Marks
			CO1	CO2	
1	0108BM161016	GOVIND DEV DUBEY	7	3	10
2	0108CE161001	AAKRITI MESHRAM	3	2	5
3	0108CE161002	ABHIJIT YADAV	4	3	5
4	0108CE161003	ABHISHEK KIRAR	4	3	7
5	0108CE161004	ABHISHEK TOMAR	4	4	8
6	0108CE161005	ADHEESH RAGHUWANSHI	4	3	7
7	0108CE161006	ADITYA SHARMA	5	3	8
8	0108CE161007	AKASH KUMAR GUPTA	7	7	14
9	0108CE161008	AKASH NINAMA	3	4	7
10	0108CE161009	AMAN KUMAR BOPCHE	6	3	9
11	0108CE161010	AMAN MAHAJAN	3	4	7
12	0108CE161011	AMIT PATEL	2	2	4
13	0108CE161012	ANIMESH JAIN	4	4	8
14	0108CE161013	ANJALI THAKUR	4	3	7
15	0108CE161015	ANKIT SHARAN	2	2	4
16	0108CE161016	ASHISH CHADAR	4	4	8
17	0108CE161017	BALKRISHNA CHOUHAN	3	4	7
18	0108CE161019	BHUPENDRA KUMAR SAHU	5	2	7
19	0108CE161020	BUSHRA KHAN	2	5	7
20	0108CE161021	DEEKSHA PATEL	3	4	7
21	0108CE161022	DEVAL BAGHEL	3	4	7
22	0108CE161023	DHARMENDRA RAJPOOT	5	2	7
23	0108CE161024	DINESH DAMOR	5	2	7
24	0108CE161025	HARIOM SOLANKI	6	7	13
25	0108CE161026	JAYPAL MEWADA	4	3	7
26	0108CE161027	JITENDRA KORDE	6	4	10
27	0108CE161028	MADHUR ASATI	4	4	8
28	0108CE161030	MOHINI KADPETI	3	2	5
29	0108CE161031	NIRMAL ADAK	4	4	8
30	0108CE161032	PARAS JAIN	3	4	7
31	0108CE161033	PARIDHI KIRAR	4	3	7
32	0108CE161034	PARTHVI SINGH	7	2	9
33	0108CE161035	PRIYA GUPTA	2	5	7
34	0108CE161036	PRIYANKA GAWANDE	7	3	10
35	0108CE161037	RAHUL SAURAV	5	3	8
36	0108CE161038	RAJKUMAR AHIRWAR	5	2	7
37	0108CE161039	RAMAN BETHE	4	3	7
38	0108CE161040	RAVI KUMAR	4	3	7
39	0108CE161041	RAVI WASKLE	3	4	7

40	0108CE161042	SAJAL NANDA	4	4	8
41	0108CE161043	SAKSHAM DIXIT	6	4	10
42	0108CE161044	SANIDHYA SHARMA	8	2	10
43	0108CE161045	SANSKAR TRIPATHI	2	6	8
44	0108CE161047	SAUMYA GARG	4	3	7
45	0108CE161048	SAYYED HASAN ALI	4	3	7
46	0108CE161049	SHIVAM	10	3	13
47	0108CE161050	SHIVANGI DAWAR	5	7	12
48	0108CE161051	SHIVANK MISHRA	3	4	7
49	0108CE161052	SHREY BAJHALY	5	3	8
50	0108CE161053	SHUBHAM GOYAL	2	2	4
51	0108CE161054	SHUBHAM KUSHWAH	2	0	2
52	0108CE161055	SOMIL JAIN	9	5	14
53	0108CE161056	SRISHTI CHOUHAN	4	3	7
54	0108CE161058	SURENDRA KUMAR	2	5	7
55	0108CE161062	VIVEK LALIT	6	4	10
56	0108CE161063	YOGESH YADAV	7	5	12
57	0108CE173D01	ABHISHEK TIWARI	5	3	8
58	0108CE173D02	AKASH TYAGI	3	4	7
59	0108CE173D03	AMIT KUSHWAHA	5	2	7
60	0108CE173D04	ANEETA MEENA	0	0	0
61	0108CE173D05	ANKIT SINGH	0	0	0
62	0108CE173D07	JAY THAKUR	2	2	4
63	0108CE173D08	NIRDESHIKA DILERIYA	2	2	4
64	0108CE173D09	PIYUSH SAHU	3	2	5
65	0108CE173D11	SHIVANI SONI	6	3	9
66	0108CE173D12	SIDDHI DUBEY	4	3	7

Mid Sem Marks Map with CO's

CO Attainment Calculation (Based on Mid Semester-1 Examination)

Bench Mark = 50%, so % attainment is calculated by counting the number of students scoring 50% and above divided by total no. of students

Attainment Levels

50% students scoring more than benchmark (50%) ---Level-1

60% students scoring more than benchmark (50%) ---Level-2

70% students scoring more than benchmark (50%) ---Level-3

S.No	Course Outcome	No. of Students above benchmark (50%)	No. of students attempted the question	Attainment Level
1	CO1	24	66	(24/66)*100 = 36.36 Level -0
2	CO2	9	66	(9/66)*100 = 13.63 Level -0

CO Attainment Calculation (Based on Mid Semester-II Examination)

Sr. No	Course Outcome	No. of Students above benchmark (50%)	No. of students attempted the question	Attainment Level
1	CO2	21	63	(21/63)*100 = 33.33 Level -0
2	CO3	08	63	(08/63)*100 = 12.70 Level -0

CO Attainment Calculation (Based on End Semester Examination)

Bench Mark = 50%, so % attainment is calculated by counting the number of students scoring 50% and above divided by total no. of students

Attainment Levels

50% students scoring more than benchmark (50%) ---Level-1
60% students scoring more than benchmark (50%) ---Level-2
70% students scoring more than benchmark (50%) ---Level-3

Sr. No	Course Outcome	No. of Students above benchmark (50%)	No. of students attempted the question	Attainment Level
1	CO1	33.67	67	(33.67/67)*100 = 50.25 Level -1
2	CO2	51	67	(51/67)*100 = 76.12 Level -3
3	CO3	37	67	(37/67)*100 = 55.22 Level -1

Measuring CO attainment through Cumulative Internal Examinations

Direct Assessment Course Outcome Attainment Calculation (End Semester Examination + Mid Semester Examination)
Calculating the attainment level of Course Outcome (Direct Assessment) by considering the weight age of 70% for End Semester and weight age of 30% for Mid Semester Examinations

Sr No.	Course Outcome	CO attainment End Semester Examination	CO attainment MID Semester Examination	70% (End Semester) + 30% (Mid Semester)
1	CO1	1	0	0.7 + 0.0 = **0.7**
2	CO2	3	0	2.1 + 0.0 = **2.1**
3	CO3	1	0	0.7 + 0.0 = **0.7**

CO Attainment Calculation (Indirect Assessment)

Indirect Assessment

Course Exit Survey

- If maximum number of students are saying that CO is **Weakly** attained ----Level-1
- If maximum number of students are saying that CO is **Moderately** attained ----Level-2
- If maximum number of students are saying that CO is **Strongly** attained ----Level-3

Given below is result of attainment of CO's for a CE-1754 Fluid Mechanics-II based on course exit survey

Course Outcome	CO attainment
CO1	3
CO2	2
CO3	2

CO Attainment calculation (Direct + Indirect Assessment)

Calculating the attainment level of Overall Course Outcome (Direct Assessment + Indirect Assessment) by considering the weight age of 80% for direct assessment and weight age of 20% for indirect Assessment

S.No	Course Outcome	CO attainment (Direct Assessment)	CO attainment (Indirect Assessment)	80% Direct + 20% Indirect
1	CO1	0.7	3	0.8 *0.7 + 0.2*3 = **1.16**
2	CO2	2.1	2	0.8*2.1 + 0.2*2 = **2.08**
3	CO3	0.7	2	0.8*0.7 + 0.2*2 = **0.96**

CO Attainment								
S. No.	**Course**	**Course Name**	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
1	CE-1731	Building Planning Architecture	2.76	2.76	2.32	3	2.8	3
2	CE-1732	Engineering Geology and Remote Sensing	1.88	1.12	1.12	1.12	3	
3	CE-1733	Strength of Materials	2.52	1.2	0.4	2.8	0.4	3
4	CE-1734	Building Materials & Construction	2.28	2.76	2.8			
5	CE-1736	CAD Lab (AutoCAD)	3					
6	CE-1737	Seminar and Entrepreneurship	3					
7	CE-1741	Concrete Technology	3	2.28	1.68	2.76	2	
8	CE-1742	Surveying	3	2.24	1.68	2.8	2	0
9	CE-1743	Fluid Mechanics – I	0.4	0.4	1.52	0		
10	CE-1744	Quantity Surveying & Costing	3	2.8	1.2			
11	CE-1745	Transportation Engg. –I	3	3	2.8			
12	CE-1746	Computer Programming Lab	2					
13	CE-1747	Aptitude and Logical Reasoning	3					
14	CE-1751	Transportation Engineering –II	3	0.4	2.8	2.8	2.8	2
15	CE-1752	Adv. Surveying	3	2.8	2.8	2.08	2	
16	CE-1753	Structural Design & Drawing–I (RCC)	2.28	2.28	1.52	2		
17	CE-1754	Fluid Mechanics –II	1.16	2.08	0.96	1		
18	CE-1755	Structural Analysis – I	1.72	2.08	2	0.2		
19	CE-1756	Construction Lab. (STAAD Pro)	3					
20	CE-1757	Minor Industrial Training	3					

21	CE-1761	Structural Design & Drawing – II (Steel)	1.32	0.64	2.28	3		
22	CE-1762	Structural Analysis – II	1.64	2.2	0.2	3		
23	CE-1763	Environmental Engineering & Waste Management	2.28	0.6	0.4	2.08	0.4	0
24	CE-1764	Geo Technical Engineering – I	1.88	2.56	2.32	3		
25	CE-1765	Water Resource Engg.	2.44	2.8	2.8			
26	CE-1766	Minor Project-I	3					
27	CE-1767	Technical & Professional Skill	3					
28	CE-1771	Advanced Structural Design	1.2	0.4	2.08	3		
29	CE-1772	Geo Technical Engineering – II	3	2.44	2.6	3		
30	CE-1773	Construction Planning & Management	2.44	2.76	2.77	3.00		
31	CE-1774	Elective – I	2.52	2.32	0.4	1.2	1.2	
32	CE-1775	Elective – II	3	2.8	2.56	2.6	2.6	
33	CE-1776	Major Project-I	3					
34	CE-1777	Industrial Training and start-up	3					
35	CE-1781	Elective – III	0.64	0.2	0.44			
36	CE-1782	Elective – IV	3	2.24	1.68			
37	CE-1783	Major Project-II	3					
38	CE-1784	General Proficiency	3					

3.3. Attainment of Program Outcomes and Program Specific Outcomes (75)

3.3.1. Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)

1. Assessment Tools

- **Direct Assessment Tools**

After calculating the overall attainment of course outcome, PO attainment is calculated on the basis of mapping of CO's with PO's of individual subject

- **Indirect Assessment Tools:**

Employer survey at the end of the program
Graduate Exit Survey– Questionnaires' as follows:

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
CIVIL ENGINEERING DEPARTMENT
Exit Meeting Survey

Dear Student,
It's our pleasure to note that you are completing your graduation in a few days. We wish and hope that you have assimilated all that is required for your successful career.
Kindly give your response on the following outcomes you have gained through your four-year degree program.

Head of the Department and Faculty Members

At the end of my degree program. I am able to:

Ranking : 3 - Strongly agree, 2 – Agree, 1- Average

1. Apply the basic knowledge of mathematics Science and engineering fundamentals to solve Engineering problems.	③ ② ①
2. Identify. Formulate and analyze complex engineering problems.	③ ② ①
3. Design solutions for complex engineering problems With a concern for public health and safety cultural societal and environmental issues	③ ② ①
4. Conduct research based investigation by using different statistical Methods and interpret the data.	③ ② ①
5. Select, create and use appropriate modern IT tools and techniques to Predict and model engineering activities.	③ ② ①
6. Apply contextual knowledge to assess societal health, safety. legal and Cultural issues with respect to professional engineering practices.	③ ② ①
7. Understand the impact of the professional engineering solutions in Societal and environmental contexts.	③ ② ①

8. Apply professional ethics in engineering practices.	③	②	①
9. Function as an individual and as a member in diverse and multidisciplinary settings.	③	②	①
10. Communicate effectively on engineering activities with engineering community and with society at large.	③	②	①
11. Work as a leader and as a member in multidisciplinary environment during project management.	③	②	①
12. Recognize the need for lifelong learning for continuous enhancement and up gradation of my knowledge in view of technological changes.	③	②	①

Signature----------

Name----------

Sch. No----------. ----------

Year of Completing VIII Sem----------

2 Process

- PO Attainment Calculation (Direct Assessment) By factoring in the attainment of CO's PO attainment = (PO mapping level /3)* CO attainment
- Indirect assessment tools are also used for PO Attainment Calculation based on Graduate exit survey & Employer Survey
- Calculating the attainment level of Overall Program Outcome (Direct Assessment + Indirect Assessment) by considering the weight age of 80% for direct assessment and weight age of 20% for indirect Assessment.

3.3.2. Provide results of evaluation of each PO & PSO (65)

(The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course-PO&PSO matrices as indicated).

Final PO attainment table is obtained and is presented below.

PO Attainment (Direct)														
S. N.	Course	Course Title	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1
1	CE-1731	Building Planning Architecture	2.77	2.02	2.16		2.72	2.61			3.00		2.34		0.90
2	CE-1732	Engineering Geology and Remote Sensing	1.65	1.29	0.69	0.69		0.67	0.69						0.37
3	CE-1733	Strength of Materials	1.46	1.46	1.20	0.80	0.53	0.40	0.13	0.40		0.53		0.40	0.40
4	CE-1734	Building Materials & Construction	1.43	1.43										2.28	2.52
5	CE-1736	CAD Lab (AutoCAD)	1	2	2		3				2	1			1
6	CE-1737	Seminar and Entrepreneurship				1	1	3	2	2	3	3	3		
7	CE-1741	Concrete Technology	2.12	2.03	1.97			2.06			1.88		2.01		0.75
8	CE-1742	Surveying	2.08	1.97	1.97			1.68	1.68		0.67			0.80	

9	CE-1743	Fluid Mechanics – I	0.58	0.55	0.68	0.48	0.47	0.23	0.26	0.30	0.68	0.52	0.26	0.43	
10	CE-1744	Quantity Surveying & Costing	2.33	2.33		0.67							0.40	0.40	
11	CE-1745	Transportation Engg. –I	2.93	1.62	1.31	0.98	0.98	1.00							
12	CE-1746	Computer Programming Lab	0.67	0.67	0.67	0.67	2.00				0.67	0.67		2.00	
13	CE-1747	Aptitude and Logical Reasoning		1	1						1			1	
14	CE-1751	Transportation Engineering –II	2.03	1.39	1.87	1.43		1.42	0.67	0.93	0.67		1.87	1.47	0.67
15	CE-1752	Adv. Surveying	2.40	2.40	2.27	0.89		0.89	0.89		0.67	0.67		0.89	
16	CE-1753	Structural Design & Drawing–I (RCC)	2.03	1.90	1.90	1.52						2.00			
17	CE-1754	Fluid Mechanics –II	1.50	1.17	1.20	0.80		0.40		0.40				0.80	
18	CE-1755	Structural Analysis – I	1.50	1.50		1.50	1.36				0.50	0.50		1.00	

19	CE-1756	Construction Lab. (STAAD Pro)	3.00	2.00			3.00				2.00				
20	CE-1757	Minor Industrial Training	1	1	1					3		3	3		
21	CE-1761	Structural Design & Drawing – II (Steel)	1.41	1.46	1.46	1.08						3.00		0.44	
22	CE-1762	Structural Analysis – II	1.76	1.76		1.76	1.76				0.59	0.59	-	1.17	-
23	CE-1763	Environmental Engineering & Waste Management	0.96	0.79	0.65	0.58	0.40	0.67	0.58	0.38	0.29	0.38	0.41	0.36	0.39
24	CE-1764	Geo Technical Engineering – I	2.44	2.19	1.76	1.73	0.77	1.41	1.65	0.75	1.53	1.43	0.75	1.63	0.75
25	CE-1765	Water Resource Engg.	2.68	2.10	2.10			1.63	1.87						
26	CE-1766	Minor Project-I	3.00	3.00	3.00	3.00		3.00	2.00	3.00	3.00	3.00	3.00	2.00	
27	CE-1767	Technical & Professional Skill	1.00	1.00	1.00	1.00						3.00			

28	CE-1771	Advanced Structural Design	1.23	1.23	1.23	1.23		0.41			2.00	3.00			
29	CE-1772	Geo Technical Engineering – II	2.76	2.29	1.84	2.04	0.94	1.89	1.85	1.23	1.87	0.89	0.81	2.09	0.92
30	CE-1773	Construction Planning & Management	2.44	2.76	2.766						3				
31	CE-1774	Elective – I	1.53	1.21	0.97	0.64	0.77	1.17	1.12	0.69	0.50	0.74	0.59	0.62	-
32	CE-1775	Elective – II	2.54	1.66	1.71	1.36		1.33		0.86			1.73	1.72	0.88
33	CE-1776	Minor Project-II	3.00	3.00	3.00	3.00		3.00	2.00	3.00	3.00	3.00	3.00		
34	CE-1777	Tour/Training	1.00	1.00	1.00					3.00		3.00	3.00		
35	CE-1781	Elective – III	0.427	0.427	0.427	0.427									
36	CE-1782	Elective – IV	3	2.24	1.68										
37	CE-1783	Major Project-II	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
38	CE-1784	General Proficiency		1.00	1.00										
Average PO Attainment			**1.90**	**1.67**	**1.58**	**1.25**	**1.45**	**1.47**	**1.29**	**1.46**	**1.57**	**1.71**	**1.76**	**1.17**	**1.05**

For indirect assessment of PO attainment three surveys were held. Details of them were as follows

1. Survey 1: Student Exit Survey
2. Survey 2: Employer Survey

PO Attainment (Indirect)														
S. No.	Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
1	Survey 1	2.75	2.82	2.83	2.74	1.58	1.43	1.47	2.62	2.82	2.63	2.64	2.77	2.75
2	Survey 2	2.78	2.71	2.9	2.78	1.63	1.59	2.76	2.71	2.84	2.71	2.69	2.81	2.76
Average attainment		2.765	2.765	2.865	2.76	1.605	1.51	2.115	2.665	2.83	2.67	2.665	2.79	2.755

Final PO attainment is calculated by combining Direct and Indirect assessment.

PO Attainment (Overall)				
S. No.	POs & PSOs	Direct	Indirect	Overall Attainment
		80%	20%	
1	PO1	1.90	2.77	2.08
2	PO2	1.67	2.77	1.89
3	PO3	1.58	2.87	1.83
4	PO4	1.25	2.76	1.55
5	PO5	1.45	1.61	1.48
6	PO6	1.47	1.51	1.48
7	PO7	1.29	2.12	1.46
8	PO8	1.46	2.67	1.70
9	PO9	1.57	2.83	1.82
10	PO10	1.71	2.67	1.90
11	PO11	1.76	2.67	1.94
12	PO12	1.17	2.79	1.50
13	PSO1	1.05	2.76	1.39

CRITERION4	Students 'Performance	100

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY	CAYm1	CAYm2
Sanctioned intake of the program(*N*)	60	60	60
Total number of students admitted in first year *minus* number of students migrated to other programs/institutions ,plus no. of students migrated to this program(*N*1)	60	60	60
Number of students admitted in 2nd year in the same batch via lateral entry(*N*2)	-	6	12
Separate division students, if applicable (N3)	6	2	4
Total number of students admitted in the Program(*N*1 +*N*2 +N3)	66	68	76

TableB.4a

CAY – Current Academic Year
CAYm1-Current Academic Year minus1=Current Assessment Year
CAYm2 -Current Academic Year minus2=Current Assessment Year minus 1
LYG– Last Year Graduate
LYGm1 – Last Year Graduate minus 1
LYGm2 – Last Year Graduate minus 2

Year of entry	*N*1 +*N*2 +N3 (As defined above)	Number of students who have successfully graduated **without backlogs** in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY(2019-20)	66				
CAYm1(2018-2019)	68 (62+6)	38			
CAYm2(2017-2018)	76 (64+12)	32	28+6		
CAYm3 (2016-17)	74 (63+11)	40	33+2	32+2	
CAYm4 (LYG) (2015-16)	76 (65+11)	60	54+9	41+5	39+3
CAYm5(LYGm1)(2014-15)	72 (61+11)	43	40+10	34+9	34+8
CAYm6(LYGm2)(2013-14)	73 (61+12)	47	42+6	40+6	40+6

TableB.4b

Year of entry	*N*1 +*N*2 +N3 (As defined above)	Number of students who have successfully graduated (Students with backlog in stipulated period of study)			
		I Year	II Year	III Year	IV Year
CAY(2019-20)	66				
CAYm1(2018-2019)	68 (62+6)	62			
CAYm2(2017-2018)	76 (64+12)	47	44+9		
CAYm3 (2016-17)	74 (63+11)	47	56+8	52+9	
CAYm4 (LYG) (2015-16)	76 (65+11)	61	48+9	57+8	58+10
CAYm5(LYGm1)(2014-15)	72 (61+11)	39	51+11	48+8	60+12
CAYm6(LYGm2)(2013-14)	73 (61+12)	59	60+12	60+12	59+12

TableB.4c

For Example from data entry perspective:

Item **(Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)**	**CAY (2016-17)**	**CAY*m*1 (2015-16)**	**CAY*m*2 (2014-15)**
Sanctioned intake of the program(*N*)	120	120	120
Total number of students admitted in first year *minus* number of students migrated to the programs/institutions plus no. of students migrated to this program(*N*1)	100	100	110
Number of students admitted in2nd year in the same batch via lateral entry(*N*2)	Nil	24	24
Separate division(*N3)*	Nil	Nil	Nil
Total number of students admitted in the Program(*N*1 +*N*2 +N3)	124	124	134

Year of entry	*N*1 +*N*2 +N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/year of study			
		I Year	II Year	III Year	IV Year
CAY(2016-17)	100(100+00+0)				
CAYm1 (2015-16)	124(100+24+0)	60			
CAY*m2* (2014-15)	124 (100+24+0)	50	40+20		

CAY*m3* (2013-14)	134 (110+24+0)	90	80+20	70+20	
CAY*m4* (LYG)(2012-13)	124 (100+24+0)	100	90+20	85+18	85+15
CAY*m5*(LYG*m*1)(2011-12)	130 (120+10+0)	80	70+10	60+10	50+10
CAY*m6*(LYG*m*2)(2010-11)	144 (120+24+0)	70	60+15	54+10	50+10

Year of entry	***N*1 +*N*2 +N3 (As defined above)**	**Number of students who have successfully graduated (Students with backlog in stipulated period of study)**			
		I Year	II Year	III Year	IV Year
CAY(2016-17)	100(100+0+0)				
CAYm1 (2015-16)	124(100+24+0)	40			
CAY*m2* (2014-15)	124 (100+24+0)	50	45+4		
CAY*m3* (2013-14)	134 (110+24+0)	20	20+4	15+3	
CAY*m4* (LYG)(2012-13)	124 (100+24+0)	0	0+4	5+4	5+4
CAY*m5* (LYG*m*1)(2011-12)	130 (120+10+0)	30	30+10	25+4	50+10
CAY*m6*(LYG*m*2)(2010-11)	144 (120+24+0)	30	25+5	25+5	20+5

4.1. Enrolment Ratio (20)

Enrolment Ratio=N1/N = 1

Item (Students enrolled at the First Year Level on average basis during the last three years starting from current academic year)	**Marks**
>=90% students enrolled	20
>=80% students enrolled	18
>=70% students enrolled	16
>=60% students enrolled	14
Otherwise	0

TableB.4.1

4.2. Success Rate in the stipulated period of the program (20)

4.2.1. Success rate without backlogs in any semester/year of study (15)

SI= (Number of students who have graduated from the program without backlog)/(Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI =Mean of Success Index (SI) for past three batches

Success rate without backlogs in any semester/year of study= 15 ×Average SI

Item	Last Year Graduate, LYG (CAYm4)	Last Year Graduate minus1,LYGm1 (CAYm5)	Last Year Graduate minus2,LYGm2 (CAYm6)
Number of students admitted in the corresponding First Year+ admitted in 2nd year via lateral entry and separate division, if applicable	76	73	73
Number of students who have graduated without backlogs in the stipulated period	41	42	47
Success Index(SI)	0.54	0.58	0.64

TableB.4.2.1

4.2.2. Success rate with backlog in stipulated period of study (5)

SI= (Number of students who graduated from the program in the stipulated period of course duration) / (Number of students admitted in the first year of that batch and admitted in2nd year via lateral entry and separate division, if applicable)

Average SI = mean of Success Index (SI) for past three batches

Success rate =5 × Average SI

Item	Last Year Graduate, LYG (CAYm4)	Last Year Graduate minus 1,LYGm1 (CAYm5)	Last Year Graduate minus 2,LYGm2 (CAYm6)
Number of students admitted in the corresponding First Year+admittedin2nd year via lateral entry and separate division, if applicable	76	73	73
Number of students who have graduated with backlog sin the stipulated period	66	67	70
Success Index(SI)	0.87	0.92	0.96
Average Success Index	0.92		

TableB.4.2.2

Note: If 100% students clear without any backlog then also total marks scored will be 20 as both 4.2.1 & 4.2.2 Will be applicable simultaneously.

4.3. Academic Performance in Second Year (10)

Academic Performance = Average API (Academic Performance Index), where

***API**= ((Mean of 2nd Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in Second Year/10))x(number of successful students/number of students appeared in the examination)*

Successful students are those who are permitted to proceed to the Third year.

Academic Performance	CAYm1	CAY*m2*	CAY*m3*
Mean of CGPA or Mean Percentage of all successful students (X)	6.14	7.18	6.93
Total no. of successful students(Y)	54	54	62
Total no. of students appeared in the examination(Z)	68	74	66
API = X* (Y/Z)	4.88	5.24	6.51
Average API =(AP1 +AP2+AP3)/3	5.54		

TableB.4.3

4.4. Placement, HigherStudies and Entrepreneurship (30)

Assessment Points=30 ×average placement

Item	2018-19	2017-18	*2016-17*
Total No. of Final Year Students(N)	68	72	71
No. of students placed in companies or Government Sector(x)	9	3	0
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.)(y)	16	13	20
No. of students turned entrepreneur in engineering/technology(z)	2	2	1
x+y +z =	27	18	21
Placement Index:(x+y +z)/N	0.39	0.25	0.29
Average placement=(P1 +P2 +P3)/3	0.31		
Assessment Points=30 ×average placement	9.3		

TableB.4.4

4.4a Placement Data :

S.No	Name of the Student Placed	Enrollment no.	Name of the Employer	Appointment letter reference no with date
1	TANU GUPTA	0108CE141055	EVEREST	09/03/2018
2	Pankaj Sharma	0108CE141031	HG Construction	09/03/2018
3	MAHAK PUROHIT	0108CE141026	Infosys	09/03/2018
1	Pravesh Gautam	0108CE151041	Prism Johnson Ltd.	26.09.2018
2	Mayur Raghuwanshi	0108CE151026	Prism Johnson Ltd.	26.09.2018
3	Anurag Agrawal	0108CE151010	Prism Johnson Ltd.	26.09.2018
4	Dileep Singh	0108CE151015	Prism Johnson Ltd.	26.09.2018
5	Harshit Sharma	0108CE151020	Prism Johnson Ltd.	26.09.2018
6	Aditya Rai	0108CE151003	Prism Johnson Ltd.	26.09.2018
7	Kapil Dev	0108CE151022	GR Infra	29.01.2019
8	Dileep Singh	0108CE151015	GR Infra	29.01.2020
9	Anurag Agrawal	0108CE151010	GR Infra	29.01.2021

TableB.4.4a

4.5. Professional Activities (20)

4.5.1. Professional societies/chapters and organizing engineering events (5)

	Title	Category	From	To	Year
1.	Training and In College Internship on Water aquifer recharge technology "Bhungroo"	STTP	December	February	2017-2018
2.	International Seminar & Exhibition on Innovations and Opportunities in building materials and Housing Technologies	Seminar	1 November	3 November	2018
3.	Recent advances in Transportation Engineering	FDP	10 August	10 December	2018
4.	Road Safety Audit and safety improvement program	STTP	12 August	12 December	2018
5.	MIDAS Engineering Software and Structural Design and Analysis Solution	STTP	15 July	19 July	2019
6.	Modelling Issues of Soil Structure Interaction Problem	STTP	8 July	12 July	2019
7.	WIND EFFECTS ON STRUCTURES	STTP	29 Oct	2 Nov	2018
8.	Limit State Design of Steel Structure	STTP	29 Jul	2 Aug	2019

4.5.2. Publication of technical magazines, newsletters, etc. (5)

1.	Proceeding of the International Seminar & Exhibition on Innovations and Opportunities in building materials and Housing Technologies	November	2018

4.5.3 Participation in inter-institute events by students of the program of study (10)

S.No	Name of activity	Student Name	Date
1	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Aniruddh Sharma	3-7 April 2019
2	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Bharti Narwaria	3-7 April 2019
3	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Govind Lodhi	3-7 April 2019
4	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Himanshu Tiwari	3-7 April 2019
5	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	On Chouksey	3-7 April 2019
6	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Rhishika Namdeo	3-7 April 2019
7	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Shraddha Tudgar	3-7 April 2019
8	Workshop on Best Practices in Brick Masonary and	Shantanu Sharma	3-7 April 2019

	timber Joinery at NIT NAGPUR		
9	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Tanishq Shrivastava	3-7 April 2019
10	Workshop on Best Practices in Brick Masonary and timber Joinery at NIT NAGPUR	Varun Singh Parihar	3-7 April 2019
11	Training programme on GPS data collection and data analysis	Raju Kumar Pandit	10 to 12 October 2019
12	Training programme on GPS data collection and data analysis	Sourabh Aggarawal	10 to 12 October 2019
13	Training programme on GPS data collection and data analysis	sourabh chaturvedi	10 to 12 October 2019
14	Training programme on GPS data collection and data analysis	Shailendra Yadav	10 to 12 October 2019
15	Training programme on GPS data collection and data analysis	Piyush Verma	10 to 12 October 2019
16	Training programme on GPS data collection and data analysis	rajneesh Prajapati	10 to 12 October 2019
17	Training programme on GPS data collection and data analysis	Kanchan Ksuhwaha	10 to 12 October 2019
18	Training programme on GPS data collection and data analysis	Nisha Kashyap	10 to 12 October 2019
19	Training programme on GPS data collection and data analysis	Himashu Jain	10 to 12 October 2019
20	Training programme on GPS data collection and data analysis	Jairam Kushwah	10 to 12 October 2019
21	Training programme on GPS data collection and data analysis	Vikas Gour	10 to 12 October 2019
22	Training programme on GPS data collection and data analysis	Pranay Deshpande	10 to 12 October 2019
23	IIT Bombay Tech fest	Rhishika Namdeo	3 to 5 January 2020
24	Startup India Yatra at SGSITS Indore	Tanupriya Patel	1 to 3 August 2019
25	IIT Delhi Tech fest "Rendezvous"	Shivank Mishra	3 to 5 Oct 2019
26	IIT Delhi Tech fest "Rendezvous"	Abhishek Kirar	3 to 5 Oct 2019
27	IIT Delhi Tech fest "Rendezvous"	Priyansh Bhalrai	3 to 5 Oct 2019
28	IIT Delhi Tech fest "Rendezvous"	Shraddha Tudgar	3 to 5 Oct 2019
29	IIT Delhi Tech fest "Rendezvous"	Shali Modi	3 to 5 Oct 2019
30	IIT Delhi Tech fest "Rendezvous"	Gautum Kumar	3 to 5 Oct 2019
31	IIT Delhi Tech fest "Rendezvous"	Aniruddh Sharma	3 to 5 Oct 2019
32	IIT Delhi Tech fest "Rendezvous"	Rajat Gupta	3 to 5 Oct 2019
33	IIT Delhi Tech fest "Rendezvous"	Shantanu sharma	3 to 5 Oct 2019
34	IIT Delhi Tech fest "Rendezvous"	Varun Singh Parihar	3 to 5 Oct 2019
35	IIT Delhi Tech fest "Rendezvous"	Brigendra thakur	3 to 5 Oct 2019
36	IIT Delhi Tech fest "Rendezvous"	Tanishq Shrivastava	3 to 5 Oct 2019

37	IIT Delhi Tech fest "Rendezvous"	Himanshu Tiwari	3 to 5 Oct 2019
38	IIT Delhi Tech fest "Rendezvous"	Govind Lodhi	3 to 5 Oct 2019
39	Workshop on Spatial and statical data analysis at NIT nagpur	Tasneem Kausar	5 to 9 aug 2019
40	Workshop on Spatial and statical data analysis at NIT nagpur	Akansha Dangi	5 to 9 aug 2019
41	Workshop on Spatial and statical data analysis at NIT nagpur	Nikhat Ara Abassi	5 to 9 aug 2019
42	Workshop on Spatial and statical data analysis at NIT nagpur	Usha Joshi	5 to 9 aug 2019
43	Workshop on Spatial and statical data analysis at NIT nagpur	Adil Khan	5 to 9 aug 2019
44	Workshop on Spatial and statical data analysis at NIT nagpur	Jitendra Sharma	5 to 9 aug 2019
45	Workshop on Spatial and statical data analysis at NIT nagpur	Rohit Gupta	5 to 9 aug 2019
46	Workshop on Spatial and statical data analysis at NIT nagpur	Dheeraj gour	5 to 9 aug 2019
47	Workshop on Spatial and statical data analysis at NIT nagpur	Chandan Athiya	5 to 9 aug 2019
48	Workshop on Spatial and statical data analysis at NIT nagpur	Sheeresh Jain	5 to 9 aug 2019
49	Workshop on Spatial and statical data analysis at NIT nagpur	Vijaykant Bharti	5 to 9 aug 2019
50	Workshop on Spatial and statical data analysis at NIT nagpur	Himanshu Dixit	5 to 9 aug 2019
51	STTP at VNIT nagpur	Shaireen khan	8 to 12 Oct 2018
52	STTP at VNIT nagpur	Vaishali Sen	8 to 12 Oct 2018
53	STTP at VNIT nagpur	Nisha Kashyap	8 to 12 Oct 2018
54	STTP at VNIT nagpur	rajneesh Prajapati	8 to 12 Oct 2018
55	STTP at VNIT nagpur	Piyush Verma	8 to 12 Oct 2018
56	STTP at VNIT nagpur	Abhishek Chauhan	8 to 12 Oct 2018
57	STTP at VNIT nagpur	Anand Singh	8 to 12 Oct 2018

CRITERION 5	Faculty Information and Contributions	200

Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development
	Degree (highest degree)	University	Year of Graduation						Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		

Table B.5

Note: *Please provide details for the faculty of the department, cumulative information for all the shifts for all academic years starting from current year in above format in Annexure - II.*

Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date of Joining the Institution	Department	Specialization
	Degree (highest degree)	University	Year of Graduation					
Dr. J.S. Chauhan	Ph.D.	B.U. Bhopal	1991	1992	Prof & Director	01.04.1992	Civil	Cost effective & Construction Mgt
Dr. Pramod Sharma	Ph.D.	B.U. Bhopal	1990	1983	Professor	01-08-1983	Civil	Fluid Mechanics
Dr. A.K. Saxena	Ph.D.	B.U. Bhopal	1983	1987	Professor	27.02.1987	Civil	Environment Engg.
Dr. Y.P. Joshi	Ph.D.	IIT Kharagpur	1978	1982	Professor	08.12.1982	Civil	Transportation Engg
Dr. Sanjay Bhandari	Ph.D.	R.G.P.V., Bhopal	1988	1990	Professor	13.03.1990	Civil	Structure Engg.
Dr. Rajeev Jain	Ph.D.	R.G.P.V., Bhopal	1993	1994	Professor	01.10.1994	Civil	Geotech Engg.
Prof. Pradeep Purohit	Ph.D.	R.G.P.V., Bhopal	1983	1996	Professor	09.01.1996	Civil	Structure Engg.
Prof. K.K. Punjabi	M.E.	University of Rookee	1984	1985	Asso. Professor	19.08.1985	Civil	Building Sc. & Tech.
Dr. S.S. Goliya	Ph.D.	BU, Bhopal	2002	2003	Asso. Professor	27-09-03	Civil	Transportation Engg
Prof.. Sanjay Saraswat	M.E.	R.G.P.V., Bhopal	1990	1984	Asstt. Professor	12-12-1984	Civil	Const. Tech. & Mgt.
Prof.Ankesh Shrivastava	M.Tech.	MANIT, Bhopal	2010	2011	Asstt. Professor	14.07.2011	Civil	Geo-Tech. Engg.
Prof. Mayur Jain	M.E.	R.G.P.V., Bhopal	2015	2012	Asstt. Professor	16.08.2012	Civil	Const. Tech. & Mgt.
Prof. Tanu Chaturvedi	M.E.	R.G.P.V., Bhopal	2015	2016	Asstt. Professor	05.07.2016	Civil	Transportation Engg
Prof. Sooraj Jain	M.E.	M.E.	2014	2016	Asstt. Professor	04.07.2016	Civil	Transportation Engg
Prof. Rakesh Mehar	Ph.D.	MANIT, Bhopal	2016	2018	Asstt. Professor	01.01.2018	Civil	Transportation Engg
Prof. Bablu Kirar	Ph.D.	IIT Rookee	2017	2018	Asstt. Professor	04.01.2018	Civil	Geo-Tech. Engg.
Prof Bharat S. Chauhan	M.Tech.	IIT Rookee	2012	2018	Asstt. Professor	01.01.2018	Civil	Structure Engg.
Prof. S. Chandrawanshi	M.Tech.	MANIT, Bhopal	2013	2018	Asstt. Professor	03.01.2018	Civil	Geo-Tech. Engg.
Prof. Sandeep Sharma	M.Tech.	IIT Rookee	2014	2018	Asstt. Professor	01.01.2018	Civil	Geo-Tech. Engg.

Prof. Yogendra Singh	M.Tech.	NIT. Hamirpur	2012	2018	Asstt. Professor	28.09.2018	Civil	Structural Engg.-
Dr. Shubha Khatri	Ph.D.	IIT Rookee	2006	2019	Asstt. Professor	03.07.2019	Civil	Geotech Engg.
Prof. Deepak Sharma	M.E.	R.G.P.V. Bhopal	2010	1997	Asstt. Professor	19.11.1997	Civil	Const. tech. & mgt.
Dr. Y.P. Joshi	Ph.D.	IIT Kharagpur	1978	1982	Professor	08.12.1982	Civil	Transportation Engg
Prof. Ram Lal Raghuwanshi	M.E.	R.G.P.V. Bhopal	1983		Asstt. Professor	08.12.1982	Civil	Const. tech. & mgt.
Prof. Pranay Deshpandey	M.E.	R.G.P.V. Bhopal	2012	2019	Asstt. Prof.	30.09.2019	Civil	Environment Engg.

Name of the Faculty Member	Academic Research									Sponsored Research (Funded Research) (amount in Lacs)			Consultancy and Product Development (amount in Lacs)		
	Research Paper Publications (refereed /SCI citation/books/chemters			Ph.D. Guidance			Faculty Receiving Ph.D. during the Assessment Years								
	2019-20	2018-19	2017-18	2019-20	2018-19	2017-18	2019-20	2018-19	2017-18	2019-20	2018-19	2017-18	2019-20	2018-19	2017-18
Dr. J.S. Chauhan	1	3	4	3	3	3	-	1	1				.50	.65	2.0
Dr. Pramod Sharma	1	4	2										.25	2.24	2.25
Dr. A.K. Saxena	2	4	8												.40
Dr. Y.P. Joshi			2											.34	1.18
Dr. Sanjay Bhandari		2	2										1.32	.83	5.81
Dr. Rajeev Jain	3	3	1										2.40	4.48	16.91
Prof. Pradeep Purohit		2	3												1.29
Prof. K.K. Punjabi															
Dr. S.S. Goliya	3	4	2		1								.66	.77	1.94
Prof.. Sanjay Saraswat	1	2	2										.14	.40	.81
Prof.Ankesh Shrivastava														.07	5.47
Prof. Mayur Jain															4.78
Prof. Tanu Chaturvedi		1	1										.55	.87	
Prof. Sooraj Jain													.07	.44	
Prof. Rakesh Mehar	3	1	3										1.28	.86	
Prof. Bablu Kirar	2	4	2												
Prof Bharat S. Chauhan	0	1	4										3.46	.90	

Prof. S. Chandrawanshi														.77	
Prof. Sandeep Sharma															
Prof. Yogendra Singh															
Dr. Shubha Khatri	5														
Prof. Deepak Sharma															
Dr. Y.P. Joshi															
Prof. Ram Lal Raghuwanshi															
Prof. Pranay Deshpandey		2													

5.1. Student-Faculty Ratio (SFR) (20)

(To be calculated at Department Level)
No. of UG Programs in the Department (n): one
No. of PG Programs in the Department (m): Three
No. of Students in UG 2nd Year= **72**
No. of Students in UG 3rd Year= **72**
No. of Students in UG 4th Year= **72**
No. of Students in PG 1st Year= **18**
No. of Students in PG 2nd Year= **18**

No. of Students = Sanctioned Intake + Actual admitted lateral entry students

(The above data to be provided considering all the UG and PG programs of the department)

S=*Number of Students in the Department = UG1+UG2+UG3+PG1+PG2*

F = *Total Number of Faculty Members in the Department (excluding first year faculty)*

Student Faculty Ratio (SFR) = S / F

Year	**CAY 2019-20**	**CAYM1 2018-19**	**CAYM2 2017-18**
u1.1 (UG BE Civil)	66	72	72
u1.2	72	72	72
u1.3	72	72	72
p1.1 (Transportation)	18	18	18
p1.2	18	18	18
P1.1 (CTM)	18	18	18
P1.2	18	18	18
P1.1 (Environmental Engg.)	18	18	18
P1.2	18	18	18
Total No. of Students in the Department **(S)**	318	324	324
No. of Faculty in the Department **(F)**	**14**	**15**	**14**
Student Faculty Ratio (SFR)	**22.71**	**21.60**	**23.14**
Average SFR	**SFR= 22.48**		

Table B.5.1

Marks to be given proportionally from a maximum of 20 to a minimum of 10 for average SFR between 15:1 to 20:1, and zero for average SFR higher than 20:1. Marks distribution is given as below:

15.00 - 15.5	-	20 marks
15.51 - 16.50	–	18 marks
16.51 - 17.50	-	16 marks
17.51 – 18.50	-	14 marks
18.51 – 19.50	-	12 marks
19.51 – 20.00	-	10 marks

Note:

Minimum 75% should be Regular/ full time faculty and the remaining shall be Contractual Faculty/Adjunct Faculty/Resource persons from industry as per AICTE norms and standards.

The contractual Faculty will be considered for assessment only if a faculty is drawing a salary as prescribed by the concerned State Government for the contractual faculty in the respective cadre and who have taught over consecutive 4 semesters.

5.2. Faculty Cadre Proportion (20)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

F1: Number of Professors required = 1/9 x Number of Faculty required to comply with 15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required = 2/9 x Number of Faculty required to comply with 15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required = 6/9 x Number of Faculty required to comply with 15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY 2019-20	3	6	6	1	14	12
CAY*m*1 2018-19	3	7	6	1	15	09
CAYm2 2017-18	3	7	6	1	15	06
Average Numbers	RF1=3.0	AF1=6.66	RF2=6	AF2=1	RF3=14.66	AF3=9

Table B.5.2

Cadre Ratio Marks= $$\left(\left(\frac{AF1}{RF1}\right) + \left(\frac{AF2}{RF2}\times 0.6\right) + \left(\frac{AF3}{RF3}\times 0.4\right)\right)\times 10$$

Cadre Ratio Marks= $(2.565+0.1+0.245)x10=25.65=\text{Max } 20.00$

- If AF1 = AF2= 0 then zero marks
- Maximum marks to be limited if it exceeds 20

Example: Intake = 180; Required number of Faculty: 12; RF1= 1, RF2=2 and RF3=9

Case 1: AF1/RF1= 1; AF2/RF2 = 1; AF3/RF3 = 1; Cadre proportion marks = (1+0.6+0.4) x10 = 20

Case 2: AF1/RF1= 1; AF2/RF2 = 3/2; AF3/RF3 = 8/9; Cadre proportion marks = (1+0.9+0.3) x 10 = limited to 20

Case 3:AF1/RF1=0; AF2/RF2=1/2; AF3/RF3=11/9; Cadre proportion marks = (0+0.3+0.49) x 10 = 7.9

5.3. Faculty Qualification (20)

FQ =2.0 x [(10X +4Y)/F)] where x is no. of regular faculty with Ph.D., Y is no. of regular faculty with M. Tech., F is no. of regular faculty required to comply 1:15 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

	X	**Y**	**F**	**FQ=2.0 x [(10X +4Y)/F)]**
CAY-19-20	7	3	21	7.80
CAYm1 18-19	8	3	22	8.36

CAYm2 17-18	8	3	22	8.36
Average Assessment				8.17

5.4. Faculty Retention (10)

No. of regular faculty members in CAYm2= 09 CAYm1= 09 CAY=10

Item (% of faculty retained during the period of assessment keeping CAYm3 as base year)	**Marks**
>=90% of required Faculty members retained during the period of three academic years keeping CAY*m*3 as base year	10
>=75% of required Faculty members retained during the period of three academic years keeping CAY*m*3 as base year	08
>=60% of required Faculty members retained during the period of three academic years keeping CAY*m*3 as base year	06
>=50% of required Faculty members retained during the period of three academic years keeping CAY*m*3 as base year	**04**
<50% of required Faculty members retained during the period of three academic years keeping CAY*m*3 as base year	0

Table B.5.4

5.5. Faculty competencies in correlation to Program Specific Criteria (10)

Low cost Building Material –

1) One of departmental faculty(Dr J.S.Chauhan) is having Ph.D in low cost housing techniques and building materials
2) One of departmental faculty(Prof Deepak Sharma) is having M.Tech dissertation work in low cost housing techniques and building materials.

(List the program specific criteria and the competencies (specialization, research publications, course developments etc.,) of faculty to correlate the program specific criteria and competencies.)

5.6. Innovations by the Faculty in Teaching and Learning (10)

Innovations by the Faculty in teaching and learning shall be summarized as per the following description.

Contributions to teaching and learning are activities that contribute to the improvement of student learning. These activities may include innovations not limited to, use of ICT, instruction delivery, instructional methods, assessment, evaluation and inclusive class rooms that lead to effective, efficient and engaging instruction. Any contributions to teaching and learning should satisfy the following criteria:

- *The work must be made available on Institute website*
- *The work must be available for peer review and critique*
- *The work must be reproducible and developed further by other scholars*

The department/institution may set up appropriate processes for making the contributions available to the

public, getting them reviewed and for rewarding. These may typically include statement of clear goals, adequate preparation, use of appropriate methods, significance of results, effective presentation and reflective critique

5.7. Faculty as participants in Faculty development/training activities/STTPs (15)

- A Faculty scores maximum five points for participation
- Participation in 2 to 5 days Faculty/faculty development program: 3 Points
- Participation>5 days Faculty/faculty development program:5 points

Name of the Faculty	**Max. 5 per Faculty**		
	CAY 19-20	**CAY*m*1 18-19**	**CAYm2 17-18**
Dr J.S.Chauhan	2x3=6	3x3=9	2x3=6
Dr Pramod sharma	5x3=15	3x3=9	1x3=3
Dr Y.P.Joshi		1x3=3	
Dr Sanjay Bhandari	2x3=6	2x3=6	Nil
Dr Rajeev Jain	3x3=9	3x3=9	2x3=6
Dr Ashit saxena	Nil	2X3=6	1x3=3
Dr Pradeep purohit	4x3=12	5x3=15	4x3=12
Prof K.K.Punjabi		1x3=3	
Dr S.S.Goliya	4X3=12	2x3=6	3x3=9
Prof Sanjay Saraswat	1x3=3	Nil	Nil
Tanu Chaturvedi	2x3=6	3x3=9	6x3=18
Prof Sooraj jain		1x3=3	
Prof B.S.Chauhan	4X3=12	2x3=6	2x3=6
Dr Bablu Kirar	5x3=15	8x3=24	5x3=15
Dr Rakesh Mehar	2x3=6	4x3=12	1x3=3
Prof Yogendra Singh	3x3=9	5x3=15	
Dr Shubha Khatri	4x3=12	Nil	Nil
Sum	123	135	81
***RF*= Number of Faculty required to comply with 15:1 Student-Faculty ratio as per 5.1**	21	22	22
Assessment = 3 × (Sum/0.5RF) (Marks limited to 15)	35.14	36.81	22.09
Average assessment over three years (Marks limited to 15) =			

Table B.5.7

5.8. Research and Development (75)

5.8.1. Academic Research (20)

Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period.

- Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc. (15)

- Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute (5)

Pradeep Purohit -12/06/2017

Prof S.S.Goliya-20/7/2017

All relevant details shall be mentioned.

5.8.2. Sponsored Research (20)

1	project Title	Funding Agency	Amount	Duration
	"Suitability of Geosynthetic Clay Liners based on Hydraulic Conductivity for various types of Leachat" Prof B.S.Chauhan	Teqip-III	Rs-1211000/-	1 year
2	"Modification of engineering properties of expansive soil by waste materials" Dr Bablu Kirar	Teqip-III	Rs-1980000/-	1 year
3	"Performance improvement of Bituminous using marginal aggregate and polymer modified binder" Dr Pakesh Meher	Teqip-III	Rs-1500000/-	1 year

- Funded research from outside:

(Provide a list with Project Title, Funding Agency, Amount and Duration)

Funding Amount (Cumulative during last three academic years starting from CAYm1): Amount >

50 Lacs – 20 Marks,

Amount > 40 and $\leq$ 50 Lacs – 15 Marks,
Amount > 30 and $\leq$ 40 Lacs – 10 Marks, Amount $\geq$ 15
and $\leq$30 Lacs – 5 Marks, Amount < 15 Lacs – 0 Marks

5.8.3. Development activities (15)

Provide details:

- Product Development

Cement free concrete Developed by Dr J.S.Chauhan

- Research laboratories

1).Advanced material Testing
2) Centre of excellence for Geo polymer Concrete
3)Centre for low cost housing techniques and alternative materials (building center)

- Instructional materials
    1) Smart Class room
    2) Laboratories upgradation
    3) Laboratory manuals

- Working models/charts/monograms etc.

Displayed in Different laboratories.

5.8.4. Consultancy (from Industry) (20)

Year	Testing (Lacs)	Consultancy (LACS)	Total
19-20 TILL 1/1/18	2.16	7.99	10.15
18-19	6.32	6.67	12.99
17-18	14.03	26.15	40.18

(Provide a list with Project Title, Funding Agency, Amount and Duration)

Funding Amount (Cumulative during last three academic years starting from CAYm1): Amount >10 Lacs – 20 Marks,
Amount $\leq$10 and $\geq$ 8 Lacs – 15 Marks,
Amount < 8 and $\geq$ 6 Lacs– 10 Marks, Amount <
6 and $\geq$ 4 Lacs–5 Marks, Amount < 4 and $\geq$ 2
Lacs– 2 Marks, Amount <2 Lacs – 0 Mark

5.9. Faculty Performance Appraisal and Development System (FPADS) (10)

Faculty members of Higher Educational Institutions today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, Faculty members need to innovate and conduct research for their self-renewal, keep abreast with changes in technology, and develop expertise for effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real life problems in industry. Another role relates to the shouldering of administrative responsibilities and co- operation with other Faculty, Heads-of-Departments and the Head of Institute. An effective performance appraisal system for Faculty is vital for optimizing the contribution of individual Faculty to institutional performance.

The assessment is based on:

- A well-defined system for faculty appraisal for all the assessment years-YES
All faculty members submit annual appraisal form -self assessment report(CR) which is countersigned by H.O.D with his recommendation, based on that annual increments are released.
(5)
- Its implementation and effectiveness –
It is being implemented effectively every year and increment letters are issued to the faculty (5)

5.10. Visiting/Adjunct/Emeritus Faculty etc. (10)

S.No.	**Visiting/Adjunct/Emeritus Faculty**	19-20	18-19	17-18
1	Visiting/Adjunct/Emeritus Faculty	02	nil	nil

Adjunct faculty also includes Industry experts. Provide details of participation and contributions in teaching and learning and /or research by visiting/adjunct/Emeritus faculty etc. for all the assessment years:

- Provision of visiting/adjunct faculty (1)

- Minimum 50 hours per year interaction with adjunct faculty from industry/retired professors etc.(9)

(Minimum 50 hours interaction in a year will result in 3 marks for that year; 3marks x 3years= 9marks)

CRITERION 6	Facilities and technical support	80

6.1 Adequate and Well Equipped Laboratories and Technical Manpower (40)

Sr. No.	Name of the Laboratory	No. of Students per setup (Batch size)	Name of the Important Equipments	Weekly Utilization Status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualifi-cation
1.	**Concrete Technology**	35	1. UTM Digital 100 Tonne 2. Air Permeability Apparatus – Blain's Type. 3. Cement autoclave. Laboratory type 4. Curing tank - accelerated. 5. Heat of hydration test apparatus. 6. Vicat needle apparatus. With 5 no.s each extra vicat needle and plunger 7. Water bath for soundness test. Digital 8. Le - chatelier apparatus 9. Air entrainment meter. 10. Digital Rebound Hammer	6 Hrs	Mr. Sandeep Shrivastava	Technical Assistant	M.Sc. Maths
2.	**Highway Engineering Lab**	35	1. Universal Testing /c Capacity 100 T	8 Hrs	Mr. N.P.Gwale	Technical Assistant	B.E.-Civil

			with accessories 2. Aggregate Impact testing machine 3. High speed Grind stone 4. Penetrometer & Ductility testing machine with accessories 5. Abrasion testing machine 6. Deval's Attrition testing machine 7. Ring & Ball Apparatus with Accessories 8. ABEL Flash point apparatus with Accessories 9. Redwood Viscometer with Accessories 10.Marshall stability test apparatus with accessories 11.Length Gauge with ISI certification mark 12.Thickness Gauge with ISI certification mark 13.Riffle sample divider 14.Flash point and fire point (pensky martens) apparatus bitumen 15.Asphalt Mixer Automatic (5 litre) 16.Benkelmen Beam 17.Marsh Cone Viscometer (Funnel) 18.Automatic Marshall stability test apparatus				

			(Digital) 19. Automatic Bituminous compacter 20. Aggregate specific gravity test set up (Digital) 21. Weighing Machine (Electronic balance 100 kg) 22. Softening point test apparatus (semi automatic) 23. Induction Heater (for bitumen) 24. Water bath (Digital) 25. Sieve Set (gradation for aggregate) 26. Aggregate impact tester 27. Asphalt content tester with all equipment digital 28. Thin film oven 29. British Pendulam 30. Cannon Manning Viscometer 31. Wheel Rut Tester				
3.	**Fluid Mechanics Lab**	35	1. Metacentric Height Assembly with Two sets of slotted wt. 50 gms each 2. Gauges,Current meter,Force of Jet Apps.,Apparatus for verification of Bernoulli's Theorem 3. Pitot Tube, Hydraulic Ram Apparatus to utilize a fall of	2 Hrs	Mr. Sandeep Shrivastava	Technical Assistant	M.Sc. Maths

			2.5 m & deliver about 360 LPH at 15 mt. height with inlet of & outlet. 4. Reciprocating pump 5. Single phase, Hydraulic Flumes Tilting type with all accessories like diff. type of spill ways weirs, and centrifugal pump of 7.5 HP fitted with Venturimeter & Manometers 6. Pelton wheel (with rope brake dynamomoter) Turbine 7. Venturimeters and orifice meters and accessories 8. Francis turbine test rig. with Centrifugal Pump 9. Discharge over notches apparatus 10. Impact of Jet on Vanes apparatus 11. Reynold 's apparatus				
4.	**Surveying Lab**	35	1.Abney level 2. Box sextant 3.Clinometers 4.Compass prismatic 5.Contact goniometer 6.Ghat tracer 7.Levels (12) 8.Latehe Machine 9.Mirror lens stereoscope model 10. Plane table with all	4 Hrs	Mr. Shyam Sundar Sharma	Drafts Man	ITI (DM)

			assessories 11. Pocket stereoscope 12. Panta graph in wooden box 13. Pocket compass german 14. Binocular 15. Parallel box 16. Surveyor compass 17. Sextand nautical 18. Unimeter 19. Planimeter 20. Telescope alidade 21. Indian pattern tangent clinometers 22. Vernier theodolite 23. Aluminium telescope levelling staff & meters long in three lengths 24. Ranging rods 25. Quick set dumpy level 26. Differential Global Positioning System (DGP) 27. Laser Distance Meter (2 Nos.) 28. DWG & Survey Software 29. Digital theodolite (5 Nos.) 30. Total Station				
5.	**Environmental Lab**	35	1. Varimex Photo Colorimeter Type KF-1 NR 253 2. Heatreat Electric Muffle Furnace Temperature	8 Hrs	Mr.Gajendra Upadhyay	Drafts man	B.E. Civil

			up to 1000ºC 3. 230 volts. Single phase 50 cycles 4. Turbidity rod 5. Alkalinity & hardness test kit M-2 6. Universal P.H. Meter type OP 204 7. MEMBRANE FILTERING App. For testing of water & sewage 8. Aplab Lab. Floculater type IE-5 6 STIRRERS 9. SPECTROPHOTOMETER double beam with computer & printer 10. Meopta c 36 Bi Microscope with eye objective piece 11. Electronic balance 210 Gm/0.1 MB Model No. HR-200 12. Bacteriological Thermostat Model "TCH 43" 13. Hot Air Oven Heatreat 200ºC 230 V. 50 cycles 14. Residual Chlorine testing set (Chloroscope) Conductivity 15. Autoclave				

			220/230 V size 14"x22" 16. Toshni wal CM11 Turbidity Meter & Jackson Turbidity meter 17. Toshni wal GL 71.01 Vacuum Pump 18. B.O.D. INCUBATOR 19. Refriger ator Cap. 165 Lit 20. Aplab Lab. Floculator Type IE-5 6 stirrers 21.Laboratory Worburg's Apparatus with Manometers & Contact Thermometer 22. ORSAT GAS ANALYZER APPARATUS 23. Digital Pipette (Range 0.5 µl, 20 - 200 µl, 100 - 1000 µl, 1 - 5 µl) 24. Food waste composting machine 125 kg per day				
6.	**Geology Lab**	35	1. Pocket Lenses Diamand Mortar and Pastle 2. Streak Plate 3. Brass Plate 4. Jolly's Spring balance 5. West phal	2 Hrs	Mr.Gajendra Upadhyay	Drafts Man	B.E. Civil

			Balance 6. Building Stone Hammers 7. Beam Balanc 8. Blow pipe set Student type. 9. Polarising Microscope pladum 11-M made in Binoculatplarisin 10. Microscope model BN11 11. Contact Goniometer made of cell void 12. Collection of natural crystals 13. Collection 11 of minerals showing electricity and magnelism collection a set of 15 specimen size 2"x2" in wooden box 14. Volcanic Products a set of 10 samples size 3"x2" 15. Word's Museum systematic collection of minerals 16. Geological compass &Bruntons compass 17. Words systematic collection of rocks 18. Tonacity collection of six in W. box. 19. Glass crystal				

			models size 6"x8" 20. Wooden crystal models size 4" long A set of important Thin sections of minerals				
7.	**Computer Lab**	30	1. Acer I-5 Computers (30 Nos.) 2. Acer I-7 Computer (1 Nos.) 3. ANSYS 14.5 Software (5 Users) 4. Road Estimator 5. Auto plotter 6. Auto cad Student Version 7. Laser Printer Colour 8. Scanner 9. Laser printer Black and White 10. Projector 11. MIDAS Software GEN/CIVIL/GTSNX/SOIL WORK/FEA 12. Bentley Software for Structural foundation/RCDC/Building Planner/Transportation/Water and waste water/Staad Pro.	11 Hrs	Mr.Pradeep Jain	Asst. programmer	M.Sc. IT
8.	**Rock & Soil Mechanics Lab**	35	1. Triaxial Compression Test Apparatus 2. Unconfined Compression Test Apparatus 3. Direct Shear	2 Hrs	Mr. N.P. Gwale	Technical Assistant	B.E. Civil

			Test Apparatus 4. C.B.R. Test App. 5. Consolidation Test Apparatus 6. Plate Load Test Apparatus 7. Standard Penetration Test Apparatus 8. Sieve Shaker 9. Slake Durability Apparatus 10. Rock Core Drilling M/c 11. Lapping & Polishing M/c 12. Permeability Test 13. Load Truss 14. Computerized Triaxial Test M/c 15. Swelling Pressure Apparatus				
9.	**Engineering Mechanics lab**	35	1. Moment Disc Apparatus 2. Simple Jib Crane 3. Jointed Roof Truss on wheel 4. Polygon & Triangle law of force Apparatus 5. Parallel force beam Apparatus 6. Shear force Apparatus 7. Bending Moment Apparatus 8. Inclined Plane friction Apparatus 9. Bell Crank Lever 10. Compound	2 Hrs	Mr. Ajay Dhotia	Lab Technician	M.A. PTDC

			lever				
10.	**Advanced Construction Lab**	35	1. Compressive testing machine 2. Compaction factor test app. 3. Tensile steel testing machine 4. Balance weight 5. Core cutter machine 6. Curing tank - accelerated. 7. Heat of hydration test apparatus. 8. Ultrasonic pulse velocity tester 9. Vicat needle apparatus. With 5 no.s each extra vicat needle and plunger 10. Water bath for soundness test. Digital. 11. Le - chatelier apparatus 12. Air entrainment meter.	6 Hrs	Mr. Devendra Jat	Sub. Engineer	Diploma - Civil
11.	**Structural Engg. Lab**	35	1. Compression Testing M/c 200 T Cp. 2. Flexure Testing M/c 3. Torsion Testing M/c 4. Impact Testing M/c 5. Fatique Testing M/c 6. Brinell cum Hardness Testing M/c 7. RocK-well Hardness Testing M/c 8. Univers	2 Hrs	Mr. Ajay Dhotia	Technical Assistant	B.E. - CIVIL

			al Testing M/c (Computerized) 100T 9. Compression Testing M/c (Computerized) 10. Loading Frame 100 T Cap.				

6.2 Laboratories Maintenance and Overall Ambiance (10)

1. All the equipment's are calibrated yearly from reputed registered agencies.

2. Maintenance: Any maintenance, inspection, repair, or alteration that requires done weekly.

3. Upgrading: Installing a software program that provides added enhancements over an earlier version and/or replacing a hardware device with that one provides greater performance than an earlier model done as per requirements.

4. Any equipment that is related to undergraduate or graduate courses is used.

5. Any equipment that belongs to the department and used for testing or measuring purposes Checked on Daily Basis.

Ambiance:

1. Department has Full furnished with well-equipped equipment which shall cater to UG course as per curriculum requirements.

2. Conditions of chairs/benches are in good condition.

3. Department has experienced faculty to educate them in all the fields of engineering.

4. Laboratories are conducted every week. As per the institute curriculum.

5. Labs are equipped with sufficient hardware and licensed software to run program specific curriculum and off program curriculum.

6. Laboratory manual are available to students.

7. Lighting system is very effective in every lab.

8. Each Lab is equipped with white/black board.

9. Exclusively, a project lab has been provided for the students to carry out their mini and major project work.

6.3 Safety Measures in Laboratories (10)

Sr. No.	Name of the Laboratory	Safety Measures
1.	Concrete Technology	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
2.	Highway Engineering Lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
3.	Fluid Mechanics Lab.	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
4.	Surveying lab.	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
5.	Environmental lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
6.	Geology Lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
7.	Computer Lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
8.	Rock & Soil Mechanics Lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
9.	Engineering Mechanics lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
10.	Ad. Construction Lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection
11.	Structural Engg. Lab	1. Fire Extinguishers 2. Safety Instruction Boards 3. electric protection

6.4 Project Laboratory (20)

A new laboratory as Centre of Excellence-Computer Centre Lab has been set up under TEQUIP-III for Research and Development work. This computer lab is equipped with new software's i.e. MIDAS, BENTLEY etc and Students and faculties will be benefitted by using it.

CRITERIA 7	Continuous Improvement	75

7.1. Actions taken based on the results of evaluation of each of the COs, POs & PSOs (30)

POs& PSOs Attainment Levels and Actions for improvement – CAY only

POs	Target Level	Attainment Level	Observations
PO1: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	1.5	2.08	Target level was achieved, however following observation was made: Lateral entry students face problems in engineering mathematics as most of them are not exposed to fundamental mathematics of class XIth and XIIth.
Actions:1. Students are motivated to study hard. **Actions:2** Doubt clearance classes on improvement of fundamentals are arranged in the department as per the needs **Actions:3**. Extra classes were conducted to improve fundamentals of engineering mathematics.			
PO2: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	1.5	1.89	Target level was achieved, however following observations were made: 1. Exposure of the students to real world problems is less hence students are not able to visualize and relate to academic subjects. 2. Research exposure to the students is less.
Actions: 1. Industrial training was made compulsory for all the students in every year break. 2. Access to science direct was provided to students for reading and downloading journal papers.			

<table>
<tr><td colspan="4">PO3: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.</td></tr>
<tr><td>PO3</td><td>1.5</td><td>1.83</td><td>Target level was achieved, however following observation was made:
1. Students find it difficult to solve design problems.
2. Students are not able to visualize real life problems.</td></tr>
<tr><td colspan="4">Actions: 1. Extra classes were conducted to improve understanding of design procedure with reasoning for every step.
2. Some changes are adopted in Teaching Methodology such as use of Power Point Presentation and other visuals.</td></tr>
<tr><td colspan="4">PO4: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</td></tr>
<tr><td>PO4</td><td>1.5</td><td>1.55</td><td>Target level was achieved and following observations were made:
1. Few laboratory equipments are not operational.
2. Lack of access to laboratories after working hours of college.</td></tr>
<tr><td colspan="4">Actions: 1. Procurement of new equipments.
2. Motivate students to refer standard text books, e-journals, online resources so as to develop their research aptitude.</td></tr>
<tr><td colspan="4">PO5: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.</td></tr>
</table>

PO5	1.5	1.48	Target level was not achieved, following observation was made: Students are less proficient in research softwares.
Actions: 1. Purchase of Research software in the department. **Actions** : 2 Training for research software was organised.			
PO6: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	1.5	1.48	Target level was not achieved, however following observation were made: 1. Students are not able to understand the realistic problem and implementation of their engineering skills to solve.
Actions: 1. Projects given to students directly relates the problem to realistic challenges and their solution.			
PO7: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	1.5	1.46	Target level was not achieved, following observations was made: Students are able to implement engineering Knowledge which can demonstrate societal, environmental context and sustainable developments
Actions: 1. Seminar/Expert lectures/conferences about the sustainable developments and climatic change etc, were organised for students. **Actions:** 2 Students are motivated to attend and participate in the activities organised outside the Institute			

PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	1.5	1.7	Target level was achieved, however following observation was made: Students do not take part in seminar, group discussion etc.
Actions: 1. Attending seminars and group discussion held in college is made mandatory. **Actions:** 2 Indirect Methods are adopted such as Seminars, Team work, Harmony among Students and motivation to work ethically and sincerely.			
PO9: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	1.5	1.82	Target level was achieved, however following observation was made: High attainment of this PO was possible due to good interaction amongst the students.
Actions: 1. Group tasks were assigned to students in different subjects wherever possible to improve his or her understanding and increase their bonding.			
PO10: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	1.5	1.90	Target level was achieved, however following observations was made: Students are less proficient in English and hence hesitate to express themselves.
Actions: 1. Essay writing competition is organized. 2. Students are motivated to participate more and more in co-curricular activities.			

PO11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	1.5	1.94	Target level was achieved, however following observation was made: High attainment of this PO was possible due to, high encouragement to students for industrial training.
Actions: 1. Industrial training was made compulsory for all the students in every year break.			
PO12: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
PO12	1.5	1.50	Target level was achieved, however following observations was made: Students are less motivated to work on their own.
Actions: 1. Group tasks were assigned to students in different subjects wherever possible to improve his or her understanding and increase their bonding. **Actions:** 2 Students are motivated to attend GATE classes organised in the institute premises for pursuing Higher Studies.			
PSO1: To carry out work in cost effective materials and technologies in the field of low cost Housing.			
PSO1	1.5	1.39	Target level was not achieved, and following observation was made: Students do not seek to involve in practical application of the theoretical concepts.
Actions: 1. Students were given compulsory tour of the building centre for exposure to low cost housing and Visits to Construction Sites.			

7.2. Academic Audit and actions taken thereof during the period of Assessment (15)

(Academic Audit system/process and its implementation in relation to Continuous

Improvement)

Academic Audit

The Departments of any institution are the backbone of the core business of any institution where trifocal activities i.e. teaching, research and service are conducted. An academic audit reviews the processes and procedures used by Departments to enhance the quality of their Programs in terms of program objectives and ensure graduate attributes as program outcomes as defined by each Department are achieved against the stipulated targets for which standard practices and processes need to be put in place.

OBJECTIVES OF ACADEMIC AUDITING:

(i) To ensure academic accountability.

(ii) To define quality of each component of the functionalities and to ensure quality of technical education throughout the system.

(iii) To safeguard functionalities of technical education.

(iv) To define effectiveness of teaching – learning process and to devise methodology to confirm maximum output from faculty members as well as students.

The Performa of academic audit are as follows

The main objective of an academic audit is to ascertain departments have put in place adequate and effective quality assurance mechanisms in terms of strategies, procedures, their applicability, that ensures quality inputs and consequently quality outputs; their agility in ensuring continuous improvements along with review of available resources, their optimal utilization, additional resource requirements for providing quality education.

1) Unit of Audit

The primary unit of academic audit is the Department.

2) Focus Areas

a. Defining intended Course and Program Outcomes

b. Identifying curricular gaps and strategy to bridge the gaps

c. Designing effective teaching and learning processes

d. Developing and using outcome based student assessment

e. Assuring implementation of quality education - significant activities such as research and services, co- curricular and extracurricular activities to support program outcomes

3) Methodology

3.1 Approach

Institution creates various committees for conduct and review of activities at the institution and department levels. The compositions, functions of the committees are as follows:

(a) Institutional Level Committee - Institution Assessment Core Committee (IACC)

Composition:

Chairman – Director of the Institute

Members - All HODs.

Special member - TPO, Member Secretary.

Broad Functions

- Contribute to preparation of SAR especially information related to institutional and finance
- Seek timeline and action plan from each department for Direct and Indirect assessment and ensure its compliance.
- Interact with employers/industry/alumni and prepare manpower market analysis
- Conduct end of Semester analysis of results and achievement of POs/PSOs for all Departments
- Prepare annual report of success/failures on various parameters
- Taking corrective actions and additional inputs for meeting POs/PSOs
- Assessment and revision of PEOs
- Review of Institutional and Departmental Vision and Mission
- Present the analysis of all departments to the BOS/Management
- Develop faculty appraisal system and assess faculty performance annually; report to BOG

Frequency of Meetings

The committee should preferably meet twice a month, with agenda and action taken record

(b) Department Level Committees

1. Department Advisory Committee
(DAC) Composition

Chairman: HOD,

Faculty - Members and

Especial external members - (Alumni, Industry, Professional Society Representation).

Broad Functions

- Review assessment of Course Outcomes and their relationship with POs/PSOs prepared by HODs
- HOD collects recommendations and suggestions and through department advisory committee come out with implementable actions or items points for continuous improvements of POs and PEOs
- HOD presents report to IACC with resource requirements and academic directions

Frequency of meeting

Meeting may be held at the end of the semester and report prepared.

(c) Program Assessment Committee

Composition:

Chairman - HOD

Members - All faculty

Broad Functions

- Prepare and finalize the PEOs and POs/PSOs, Align them with the Mission and write the process of development of PEOs and POs
- Conduct assessment of placement record for ensuring PEOs attainments or revision if required
    - Conduct assessment of curriculum and resources available to meet the developed PEOs and POs, decide additional course contents, electives to bridge the gaps and

inform the shortfalls in resources to the Institutional Core Committee which will evaluate the needs and present the additional requirement to the management

- Supervises the COs and their alignment to POs, assignments, tests, quiz, activities, Bloom's Taxonomy and ensures targets set by faculty are realistic.

- Develop common Performance Indicators for respective Courses aligned to the PO and ensures the faculty develop activities, tests, quiz, assignments related to the common performance indicators as well as for their course specific indicators
- Monitors progress periodically
- Develop a description of the process with questionnaires and tools required for continuous assessment
- Develop faculty self-appraisal questionnaire and student feedback questionnaire
- Decide frequency of assessment of POs – internal and external
- Obtain COs from respective faculty for concerned PO along with their alignment with PO,
    - Bloom's Taxonomy and target of expected achievements
- For direct assessment collects the student results for respective courses aligned to the PO and analyze the average achievement of performance
- Hold discussions with concerned faculty on shortfalls for the achievement of pre-set targets.
- Collects recommendations for improvements
- Prepare and conduct indirect assessment and prepare report
- Record the results and presents to the IACC of direct and indirect assessment.
- Maintain and update website

Frequency of Meeting

Monthly monitoring and also at the end of semester

3.2 The Process

The Management through BOG will decide the main guidelines of academic audit indicating special reference to investigation to be made about the various practices being followed by the departments. The emphasis would remain on teaching, research and services. All attempts will be made to ensure that continuous growth of all major parameters related to quality of education are

achieved. The achievement with specific reference to the plan of action related to PEOs and POs/PSOs will be monitored. The BOG will authorize IACC to conduct the audit and collect information through various records that may include the following:

Department action plan and targets

Minutes of Departmental meetings of various committees.

Record of content delivery through lectures, practical etc. and Result analysis semester/annual of courses in relation to set targets.

Results and interpretation of indirect assessment

Corrective action envisaged

Recommendations of department Advisory Board

Any other evidential material

3.3. Reporting

The purpose of academic audit is not judgmental but to cause development to happen. The IACC will produce a report that describes the strengths and weaknesses of the each department's efforts to improve academic quality of their programs and identify plans for improvements. The main components of the report will be:

Recognition of Good practice

Recognition of well performing departments

Recommendations for improvement

The audit report is presented to the BOG and made available to the departments who will be required to respond to the issues raised in the report. The response of the departments will be part of the final audit report. The audit report shall be presented to BOG and thereafter displayed on Department/institutional website.

The Performa of academic audit are as follows:

Format for Department Academic Audit

Name of the Department :

Date :

Name, Designation and Address of Academic Audit Experts:

Members of Staff Present:

Criterion	Items	Verification Yes / No	Comments	Suggestions for improvement
I.Curriculum	Steps followed in the designing of syllabus & curriculum			
	Contents of the Curriculum			
	Validation done			
	IDC / EDC			
	Credits allotted / distribution – logic			

Curriculum Transaction	Teaching methods & teaching aids			
Profile of Students	Demand ratio (Applications received Vs Sanctioned Strength)			
	E-learning modules			
	Project work UG/PG			
	Internal assessment – Students involvement in extra-curricular & Co-curricular activities			
	Student support – remedial coaching			
	Study tour / industrial visits / Internship / Training			
	Mentoring / evaluation of student's progress			
	Feedback from students			
	Achievements			
	Steps taken on the feedback			

Infrastructure in the Department	No. of class rooms			
Faculty Profile	Projects completed / on going			
	No. of laboratories			
	No. of computers for teachers			
	Seminars / conferences attended			
	Papers / articles / books published			
	No. of computers – for students			
	FDP / RC / OC / Training Program / Workshop			
	Preparation of E-learning materials / content			
	No. of computers – research scholars			
	No. of instruments			
	Acted as resource persons			
	M.Phil. & Ph. D awarded			

VI.0Activities of the Department	Visits/Tours			
	Consultancy			
	Collaborations			
	Association Meetings			
	Guest lectures			
	Conference / Seminar / Workshop conducted			
	Extension Activity			
	Interaction with Industry / Research Centres / Educational Institutions			

Please comment on SWOC Analysis :

Strength:

Weakness:

Opportunities:

Challenges:

Best Practice (s) / Innovations of the Department:

Future Plans of the Department:

Signature of the HoD with Seal

Signature of the Academic Audit Experts

	Newsletters / Magazine			
	Placement			

Action Taken by the faculty members

- Faculty members incorporate changes suggested by the audit committee, if any gaps are found, to ensure quality deliverables.
- Faculty members have to match the pace of their deliverables as per the students' requirements as well as they have to schedule the lecture plans in such a way that the syllabus is completed on time. To achieve this they can arrange extra lectures and cope-up the syllabus.
- Regular analysis of the results of internal assessment examination of all subjects is done and concerned faculties are guided to take necessary actions. Remedial classes are scheduled in reference to academic progress of the student.
- Faculty members attend FDP as required for the overall development of teaching skills in terms of communication, methods and technical.
- The academic observation is carried out considering two criteria – feedback from students (requested to the authorities) and randomized observation.
- Technical FDP, expert lectures, seminars etc. are being arranged by the individual departments at least once in a semester.

7.3. Improvement in Placement, Higher Studies and Entrepreneurship (10)

Item	2018-19	2017-18	*2016-17*
Total No. of Final Year Students(N)	68	72	71
No. of students placed in companies or Government Sector(x)	9	3	0
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.)(y)	16	13	20
No. of students turned entrepreneur in engineering/technology(z)	2	2	1
x+y +z =	27	18	21
Placement Index:(x+y +z)/N	0.39	0.25	0.29
Average placement=(P1 +P2 +P3)/3	0.31		
Assessment Points=30 ×average placement	9.3		

7.4. Improvement in the quality of students admitted to the program (20)

		2019-2020	2018-2019	2017-2018
National Level Entrance Examination (Joint Entrance Examination)	No of Students admitted	60	62	64
	Opening Score/Rank	91.58/94593	87/79591	118/49969
	Closing Score/Rank	16.49/99207	14/797873	10/910779
State/Institute/Level Entrance Examination/Others	No of Students admitted	-	-	-
	Opening Score/Rank	-	-	-
	Closing Score/Rank	-	-	-
Diploma Aggregate Percentage	No of Students admitted	6	12	12
	Opening Score/Rank	79%	78.9%	79%
	Closing Score/Rank	72.7%	72.24%	58.056%

Table B.7.4.

CRITERION 8	First Year Academics	50

8.1. First Year Student-Faculty Ratio (FYSFR) (5)

Data for first year courses to calculate the FYSFR:

Year	Number of students (approved intake strength)	Number of faculty members (considering fractional load)	FYSFR	*Assessment = (5 ×20)/ FYSFR (Limited to Max. 5)
CAY	540	61	8.85	11.29
CAYm1	540	83	6.51	15.36
CAYm2	540	73	7.4	13.51
Average	540	72.33	7.58	13.38

Table B.8.1.

*Note: If FYSFR is greater than 25, then assessment equal to zero.

8.2. Qualification of Faculty Teaching First Year Common Courses (5)

Assessment of qualification = (5x +3y)/RF, x= Number of Regular Faculty with Ph.D., y = Number of Regular Faculty with Post-graduate qualification RF= Number of faculty members required as per SFR of 20:1, Faculty definition as defined in 5.1

Year	X	Y	RF	Assessment of faculty qualification (5x + 3y)/RF
CAY	32	29	27	9.14
CAYm1	39	44	27	12.11
CAYm2	34	39	27	10.63
Average Assessment				10.62

Table B.8.2

8.3. First Year Academic Performance (10)

Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the second year.

Branch	2016-2017							Mean C =(A+B) /2	Mean Z =(X+Y) /(P+Q)	Academic Performance = C * Z
	Dec 2016			June 2017			Promoted to second year			
	Appeared Students	Successful Students X	Mean A	Appeared Students	Successful Students Y	Mean B				
BME	36	30	6.89	34	20	7.35	25	7.12	0.71	5.09
CE	60	58	7.20	60	41	7.52	60	7.36	0.83	6.07
CSE	63	55	8.18	73	51	7.65	62	7.91	0.78	6.17
EE	62	56	7.351	61	50	7.405	50	7.378	0.86	6.36

ECE	61	57	7.06	60	48	5.81	60	6.435	0.87	5.58
EI	56	52	7.2	56	38	9.7	55	8.45	0.80	6.79
IT	61	58	7.38	61	43	7.4	60	7.39	0.83	6.12
ME	61	53	7.36	64	44	7.45	60	7.405	0.78	5.75
PCE	49	41	7.24	49	30	7.41	46	7.325	0.72	5.31
Total	56.56	51.11	7.32	57.56	40.56	7.52	59.75	7.42	0.80	5.91

Branch	2017-2018							Mean C =(A+B) /2	Mean Z =(X+Y) /(P+Q)	Academic Performance = C * Z
	Dec 2017			June 2018			Promoted to second year			
	Appeared Students	Successful Students X	Mean A	Appeared Students	Successful Students Y	Mean B				
BME	22	22	6.18	22	22	5.77	22	5.97	1.00	5.98
CE	62	45	7.08	61	38	6.60	61	6.84	0.67	4.62
CSE/IT	120	95	7.00	118	90	6.62	90	6.81	0.78	5.29
EE	60	47	7.22	57	40	4.76	57	5.99	0.74	4.45
ECE	56	40	5.11	55	44	7.33	52	6.22	0.76	4.71
EI	46	36	8.7	46	33	9.19	46	8.94	0.75	6.71
ME	61	49	7.35	59	43	6.81	56	7.08	0.77	5.43
PCE	28	15	7.12	27	23	6.99	27	7.05	0.69	4.87
Total	56.88	43.63	6.97	40.88	30.38	5.93	47.88	6.45	0.77	4.94

Branch	2018-2019							Mean C =(A+B) /2	Mean Z =(X+Y) /(P+Q)	Academic Performance = C * Z
	Dec 2018			June 2019			Promoted to second year			
	Appeared Students	Successful Students X	Mean A	Appeared Students	Successful Students Y	Mean B				
BME	08	07	6.4	08	03	6.41	8	6.40	0.625	4
CE	62	37	6.29	62	51	6.28	62	6.28	0.709	4.45
CSE/IT	136	97	6.55	133	80	6.33	125	6.44	0.65	4.23
EE	63	44	7.47	61	44	6.52	61	6.995	0.709	4.959
ECE	63	23	8.86	62	45	7.81	62	8.335	0.544	4.53
EI	42	29	8.55	40	24	8.6	40	8.575	0.646	5.5
ME	60	40	6.69	60	32	6.35	54	6.52	0.6	3.912
PCE	18	09	7.03	15	09	7.27	13	7.15	0.545	3.89
Total	452	286	58.47	441	288	55.57	425	56.695	5.028	35.471

8.4. Attainment of Course Outcomes of first year courses (10)

8.4.1. Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5)

(Examples of data collection processes may include, but are not limited to, specific exam questions, laboratory tests, internally developed assessment exams, oral exams assignments, presentations, tutorial sheets etc.)

Name of the Department	Course Code	Course Title	Teaching Faculty	Session	Semester	Remark
Applied Maths	BT-1815	Engineering Maths I	Dr. Poonam lata Sagar	2018-2019	I	OK
	BT-1825	Engineering Maths II	Dr. Rajendra Pathak	2018-2019	II	OK
Applied Physics	BT -1821	Engineering Physics	Dr. Sachin Mahajan	2018-2019		Ok

Applied Chemistry	BT -1811	Engineering Chemistry	Dr. Manoj Datar	2018-2019	I & II	Ok
	BT -1824	Energy Environment Ecology & Society	Dr. R. N. Shukla	2018-2019	I & II	Ok
			Dr. Pradeep Sharma	2018-2019	I & II	Ok
Civil Engineering	BT -1822	Basic Civil Engineering & Engineering Mechanics	Tanu Chaturvedi	2018-2019	I	OK
			Suraj Jain	2018-2019	II	OK
Computer Science Engineering	BT -1826	Computer Programming	Sourabh Sharma Sachin kamley	2018-2019	I	Ok
Electrical Engineering	BT -1812	Basic Electrical & Electronics Engineering	Bharat Singh Choudhary	2018-2019	I	Ok
			Bhavna Sharma	2018-2019	II	Ok
Mechanical Engineering	BT -1823	Basic Mechanical Engineering	Prachi Kanherkar	2018-2019	I & II	Ok
	BT-1816	Workshop Practice	R.M. Saxena	2018-2019	I & II	Ok
	BT-1813	Engineering Graphics	Kamlesh Sharma	2018-2019	I & II	Ok
Master of Computer Application	BT-1826	Computer Programming	Narendra Gupta	2018-2019	II	Ok
			Sushil Verma	2018-2019	II	Ok
			Dr. Sachin Kamley	2018-2019	II	Ok
			Sourabh Sharma	2018-2019	II	Ok
Humanities	BT-1814	Communication Skills	Dr. Manorama Saini	2018-2019	I & II	Ok

8.4.2. Record the attainment of Course Outcomes of all first year courses (5)

Program shall have set attainment levels for all first year courses.

(The attainment levels shall be set considering average performance levels in the institution level examination or any higher value set as target for the assessment years. Attainment level is to be measured in terms of student performance in internal assessments with respect the COs of a subject plus the performance in the institution level examination)

Session 2018-2019							
Name of the Department	Course Code	Course Title	**Attainment**				
			CO1	**CO2**	**CO3**	**CO4**	**CO5**
Applied Maths	BT-1815	Engineering Maths I	0.58	0.7	0.23	0.53	0.35
	BT-1825	Engineering Maths II	0.50	0.40	0.43	0.44	0.23
Applied Physics	BT-1821	Engineering Physics	0.43	0.38	0.39	0.36	0.58
Applied Chemistry	BT-1811	Engineering Chemistry	0.43	0.494	0.33	0.36	0.25
Civil Engineering	BT-1822	Basic Civil Engineering & Engineering Mechanics	0.49	0.35	0.50	0.31	0.34
Electrical	BT-	Basic Electrical	0.47	0.47	0.31	0.43	-

Engineering	1812	& Electronics Engineering					
Mechanical Engineering	BT-1823	Basic Mechanical Engineering	0.49	0.47	0.4	0.48	0.5
Mechanical Engineering	BT-1813	Engineering Graphics	0.62	0.42	0.42	0.45	0.48
Petrochemical Engineering	BT-1824	Energy Environment Ecology & Society	0.6	0.61	0.52	0.5	0.5
Humanities	BT-1814	Communication Skill	0.55	0.49	0.53	0.5	0.5

8.5. Attainment of Program Outcomes from first year courses (20)

8.5.1. Indicate results of evaluation of each relevant PO and/or PSO if applicable (10)

The relevant program outcomes that are to be addressed at first year need to be identified by the institution

Program Outcome attainment levels shall be set for all relevant POs and/or PSOs through first year courses.

(Describe the assessment processes that demonstrate the degree to which the Program Outcomes and Program Specific Outcomes are attained through first year courses and document the attainment levels. Also include information on assessment processes used to gather the data upon which the evaluation of each Program Outcome is based indicating the frequency with which these processes are carried out)

PO/PSO Attainment: Mention first year courses

Course	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BT-1811	Engineering Chemistry	37.5	34.37	15.62	18.75	12.5	37.5	37.5	0	25	0	0	12.5
BT-1812	Basic Electrical & Electronics Engineering	42.7	42.7	42.7	42.7	28.4	14.2	28.4	14.2	42.7	0	28.4	28.4
BT-1813	Engineering Graphics	48	44.8	32	35.2	32	0	0	0	0	0	16	16
BT-1814	Communication Skills	0	0	0	0	34	17	17	17	34	22.61	17	25.5
BT - 1815	Engineering Maths I	47.8	47.8	47.8	31.8	15.6	15.6	0	0	15.6	15.6	15.6	15.6
BT-1825	Engineering Maths II	40	40	40	26.28	13.34	13.34	0	0	13.34	13.34	13.34	13.34
BT - 1821	Engineering Physics	42.9	39.38	32.22	25.06	21.48	21.48	14.32	19.04	25.06	28.64	23.77	32.22
BT - 1822	Basic Civil Engineering & Engineering Mechanics	35.47	40	22.13	22.13	13.33	13.33	13.33	13.33	13.33	13.33	13.33	22.13

BT - 1823	Basic Mechanical Engineering	47	43.08	23.5	15.66	0	15.66	15.66	15.66	0	0	0	15.66
BT - 1824	Energy Environment Ecology & Society	0	36	0	54.96	18.32	54.96	54.96	54.96	36	0	36	36

8.5.2. Actions taken based on the results of evaluation of relevant POs and PSOs (10)

(The attainment levels by direct (student performance) are to be presented through Program level Course-PO matrix as indicated)

PO Attainment Levels and Actions for improvement – CAY only – Mention for relevant Pos

POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.			
PO1	78.86	42.67	Attainment is low in Basic civil engineering and engineering chemistry. Observations : 1. Attainment level still it is 42.67 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Additional classes to be conducted to introduce projection concepts.		
Action 2:	More problems will be given for practices.		
PO2: . Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	65.93	40.90	Attainment is low in engineering chemistry and energy environment ecology and soceity. Observations : 1. Attainment level still it is 40.90 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Additional classes to be conducted to introduce projection concepts.		
Action 2:	More problems will be given for practices.		
PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.			
PO3	58.87	31.99	Attainment is low in Basic civil engineering and Basic mechanical engineering. Observations : 1. Attainment level still it is 31.99 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Additional classes to be conducted to introduce projection concepts.		
Action 2:	More problems to be taught in tutorial classes.		
PO4: . Conduct investigations of complex problems: The problems: • that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline. • That may not have a unique solution. For example, a design problem can be solved in many ways and lead to multiple possible solutions. • That requires consideration of appropriate constraints/requirements not explicitly given in the problem statement. (Like: cost, power requirement, durability, product life, etc.). • Which need to be defined (modeled) within appropriate mathematical framework. • That often require use of modern computational concepts and tools.#			
PO4	53.66	30.28	Attainment is low in Basic civil engineering and engineering chemistry. Observations : Attainment level still it is 30.28 we

			need to improve.
Action 1:	Additional classes to be conducted to introduce projection concepts.		
Action 2:	More problems to be taught in tutorial classes.		
PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities, with an understanding of the limitations.			
PO5	34.07	20.99	Attainment is low in Basic civil engineering and engineering maths-I. Observations : 1. Attainment level still it is 20.99 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Additional classes to be conducted.		
Action 2:	Possibilities will be find to explore the target level.		
PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	40	22.56	Attainment is low in Basic electrical and electronics engineering and engineering maths-II. Observations : 1. Attainment level still it is 22.56 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Additional classes to be conducted.		
Action 2:	Possibilities will be find to explore the target level.		
PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	45.71	25.88	Attainment is low in communication skill and engineering physics. Attainment level still it is 25.88 students are doing better in improving the overall expertise in the field of engineering but due to lack of communication skills and other ethical knowledge Observations. Some are lagging in real life knowledge.
Action 1:	Additional classes to be conducted.		
Action 2:	Possibilities will be find to explore the target level.		
PO8: . Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	37.06	22.36	Attainment is low in Basic electrical and electronics engineering and Basic civil engineering. Observations : 1. Attainment level still it is 22.36 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Possibilities will be find to explore the target level		
PO9: . Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	45.83	25.62	Attainment is low in Engineering maths-I and Basic civil engineering. Observations : 1. Attainment level still it is 25.62 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Possibilities will be find to explore the target level		
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with t h e society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	33.76	18.7	Attainment is low in Engineering maths-II and Basic civil engineering. Observations : 1. Attainment level still it is 18.7 we need to improve. 2. Students find it difficult to solve and analyze

			the problems.
Action 1:	Possibilities will be find to explore the target level		
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments			
PO11	35.53	20.43	Attainment is low in Engineering maths-II and Basic civil engineering. Observations : 1. Attainment level still it is 20.43 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Possibilities will be find to explore the target level		
PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change			
PO12	38.43	21.73	Attainment is low in Engineering chemistry and Engineering maths-II. Observations : 1. Attainment level still it is 21.73 we need to improve. 2. Students find it difficult to solve and analyze the problems.
Action 1:	Additional classes to be conducted.		
Action 2:	Possibilities will be find to explore the target level.		

CRITERION-9 Student Support Systems

9. STUDENT SUPPORT SYSTEMS (50)

9.1 Mentoring system to help at individual level (5)

Type of mentoring: Professional guidance/ career advancement/course work specific/ laboratory specific/ all-round development. Number of faculty mentors: Number of students per mentor: Frequency of meeting:
(The institution may report the details of the mentoring system that has been developed for the students for various purposes and also state the efficacy of such system)

- Mentoring System : Yes
- Type of Mentoring : Tutor Guardian Scheme
- Number of faculty mentors : 138
- Number of students per mentor : 20
- Frequency of meeting : Fortnightly

Details of the mentoring system

A faculty mentor is assigned to a group of 20 students to deal with their problems the mentor maintains record of students. The mentor observes the overall growth of student and provides counseling whenever required. The mentor also makes sure to maintain a regular parent-teacher dialogue.

Efficiency of such system

The system develops an interaction amongst the students, teachers and parents. The system helps to improve the academic performance of the students. The system provides scope for healthy, positive and stress free state of mind. Teachers are also becoming more responsive to the learner needs day by day which is being reflected in the diary maintained by the teacher. The mentors meet to the students periodically and monitor their performance and their activities. Guidance regarding the lagging issues is provided. Occasionally tutor meeting with the parents is conducted based on the requirement.

Professional Guidance:

The department is well equipped with knowledgeable Human resources in the form of members of faculty who by keeping themselves of development, offer guidance to the prospective professionals in addition to the classroom teaching. The Industry-institute Partnership cell and Entrepreneurship development cell have been putting efforts in this direction.

Career advancement:

The Training and Placement cell has been active not only in arranging campus recruitment drives, but also offering awareness and training for the students Course work. Members of faculty handling different courses interact with students in clearing all their Concept-oriented and test based mechanics of the respective courses. The teachers after first of formative evaluation guide the students as far as student- specific gray areas are concerned.

Lab-specific:

Each of the lab sessions are handled by 2 Teachers in order to have special care for the students(batch size 30) while experiments are being handled. A demonstrative presentation is given by the teacher concerned before every experiment. The Laboratory records are evaluated after the experiment is held. In other words, there is active involvement of the faculty members at Pre-experiment stage, at the time of experiment and after the experiment.

Total Development:

As stated above, the college puts forward efforts to realize total development of the student. In addition to academics, literary, cultural and sports activities are conducted which offer leadership qualities, decision making abilities, team spirit, precision, analytical capabilities, socio- psychological awareness etc. which make an individual a intellectually mature being.

9.2. Feedback analysis and reward/corrective measures taken, if any (10)

Feedback collected for all courses: YES/NO; Specify the feedback collection process; Average Percentage of students who participate; Specify the feedback analysis process; Basis of reward/ corrective measures, if any; Indices used for measuring quality of teaching & learning and summary of the index values for all courses/teachers; Number of corrective actions taken.
Feedback collected for all courses (Yes/No): Yes

Specify the feedback collection process:

A standard feedback questionnaire is collected from the students every semester course wise. At the end of semester, department conduct end course survey in order to take the feedback about the facilitators as well about the effectiveness of course. Apart from this exit survey is also conducted for passing out student

Number of Feedback Items	:	20
Frequency of feedback collection	:	Once in a semester.
Feedback collection Hard-copy	:	Yes.
Average percentage of students who participates	:	**above** 80%

Feedback analysis Process:

1. The feedback analysis is done manually
2. Collected feedback is scrutinized at department level.
3. The feedback is quantified
4. All the parameters mentioned in the feedback form is analyzed.
5. Ability of teaching with respect to each item and comprehensive ability of the teachers is analyzed
6. All the comments written by the students in the feedback forms is communicated to the respective faculty members along with their feedback levels to know their strengths and weaknesses and to enhance their teaching skills.

Basis of reward/corrective measure:

1. Faculty members who get average feedback identified and provided with induction program and faculty development program.

2. Also the faculty members who get better feedback appreciated by management on Independence day & Republic day

9.3. Feedback on facilities (5)

Assessment is based on student feedback collection, analysis and corrective action taken.

1. Student's feedback on facilities such as class room ambiance, furniture, is satisfactory.
2. Student's feedback on facilities such as library, no of books to be increased. We have increase purchase of books for central library.
3. Student's feedback on facilities such as speed of internet to be improved. We have increased the band width & procured another WiFi network (Jio).

9.4. Self-Learning (5)

(The institution needs to specify the facilities, materials and scope for self-learning/ learning beyond syllabus, Webinars, Podcast, MOOCs etc. and evaluate their effectiveness)

- The curriculum offers courses like, minor project, major projects where the topics are self-selected or based on guide suggestion. The component of self-learning is evaluated in these courses.
- Seminars, conference, workshop & guest lecturers were organized.
- In every lecture 5-10 minutes discussion on new technology and its application in real life that is beyond the syllabus is discussed for improvement & innovation.
- Every student has to submit a home assignment in every course which has been evaluated for 10 marks. Some of these tasks are beyond syllabus to encourage out-standing students to develop their self-learning capabilities.
- Department library with sufficient number of volumes on core and application areas, technology awareness journals are opened during college working hours. IPR Cell, Innovation Club, Centre of Excellence has been established in Institute Swayam & Swayam Prabha courses are also available. T.V. Set at prominent locations has been installed to watch the online lecture.
- E-notes has been prepared by the department faculty and maintained by the department faculty for the development of students for all subjects in our department.
- Apart from the above, the college actively promotes self-learning through the following resources procured through NPTEL, QEEE and other Audio-Video content:

9.5. Career Guidance, Training, Placement (10)

(The institution may specify the facility, its management and its effectiveness for career guidance including counseling for higher studies, campus placement support, industry interaction for training/internship/placement, etc.)
The Career guidance cell and Training & Placement department in coordination with Student section Counselors keeps students abreast with the opportunities of higher studies & placement on regular basis. The team for Career counseling comprises of departmental Representatives.

Functions of the Departmental Representative

1. To arrange Seminars / Workshops on Career opportunities
2. To conduct mock tests for competitive examinations.
3. To arrange interactive sessions between alumni and students.
4. To procure study material and make it available in the Library/Intranet.
5. Display of Posters, Notices relating to Opportunities

Details of activities organized by placement cell year 2018-19

1. Employability Skill Training run by T&P Cell for betterment of students.
2. GATE Training run by T&P Cell for students who are interested in Higher Education and to face competitive GATE exam .
3. 2 days Workshop on Employability Skill on 19-20 Jan, 2019.
4. Employability Sill Test by Aspiring Minds for 1455 students.

Selections through campus Drive durig 2018-19

S.NO	Name Of Company	Selections
1	Zensar Technologies	8
2	Argusoft	0
3	Xoriant Technologies	1
4	Prism Johnson	6
5	Capgemini	48
6	Tata AIG	2
7	TCS Mumbai	36
8	Trading Bells	11
9	Matrix Inc.	0
10	UNO TECH.	0
11	LG Soft	0
12	Relince Jio	1
13	BORL	2
14	Infosys	9
15	Cognizant	2
16	LG Soft	0
17	Kotak Mahindra	8
18	Opentext	0
19	GR Infra	3
20	Matrix Inc.	0
21	Research Panel Indore	5
22	Infostretch Corporation (India) Pvt Ltd.	1
23	Zyacus	0
24	Rippls Advisory indore	15
25	Kalka IPS Academy	2
26	Calsoft	2
27	Infosys	1
28	Insta Printz	1
29	Mount Blue	0
30	BBB	0
31	Azim Prem Ji Foundation	0
32	AU Bank	0
33	Tech. Mahindra	2
34	50 Hertz	1
	TOTAL SECLCTIONS	**167**

Placement Details of 5 years

Year	No of Companies Visited in closed /pool)	No of students placed (Open campus drive)		No of students placed (Open campus drive)		No of students placed		Total Placement
		Engineering	Non Engineering	Engineering	Non Engineering	Engineering	Non Engineering	
2018-19	34	151	16	13	-	151	16	167
2017-18	31	102	23	7	0	109	23	132
2016-17	32	70	5	28	0	98	5	103
2015-16	19	182	22	0	0	182	22	204
2014-15	33	169	13	20	18	189	33	222

9.6. Entrepreneurship Cell and incubation facilities (5)

(The institution may describe the facility, its management and its effectiveness in encouraging entrepreneurship and incubation) (Success stories for each of the assessment years are to be mentioned)

In our institute entrepreneurship development cell is organizing workshop on entrepreneurship. Through entrepreneurship development cell interaction with the entrepreneur is organized. Through entrepreneurship development cell competitions are arranged for new innovative business ideas. The entrepreneurship Development Cell has been organizing workshops and seminar for the benefit of students. The EDC Cell invites speaker, Entrepreneurs to share their experiences and also invites professionals from Banks, Federation of Commerce and Industry to motivate and educate students on Entrepreneurship.

Vision and Ideology of the E-Cell Vision
To stimulate, support and sustain all initiatives and endeavors of students, which will lead to generation of entrepreneurship based on Engineering and Technology

Ideology

- To motivate and inspire students to take up the challenge of entrepreneurship
- To equip them with necessary skills and provide all possible assistance
- To promote creative thinking and an entrepreneurial mindset among the students
- To promote innovations and help convert them into market accepted Products

Activities undergoing in E- Cell:

The E-cell Organizes lectures, workshops and seminars by renowned personalities from different domains of expertise, competitions of various kinds etc. round-the-year in order to create awareness and to sharpen business acumen of students and aspiring entrepreneurs. Mentor students / new faculties who have business ideas by bringing expertise to their doorsteps.

The E-cell is network hub for students aspiring to be entrepreneurs and also play a role in team building as a part of its mentorship. Mentoring the students at an early stage by giving proper direction and necessary exposure would be crucial in converting technical ideas/projects into viable business plans It is an interface between the entrepreneurial activity in institute and the outside world, a consolidation of logistic and knowledge resources necessary to make a business plan and set up an enterprise. Form permanent associations with professional bodies and organizations, Universities, corporations, media etc. to facilitate exchange of ideas and to promote entrepreneurial ventures. Knowledge partnerships will play an important role in engaging good expertise for the benefit of entrepreneurial activity at institute. Associations with venture capital firms and seed funds would be crucial in the setup of new ventures. To achieve the above objectives the E-Cell will focus on some initiatives to foster the spirit of entrepreneurship in the following ways.

Innovation club:

In It is aimed at nurturing innovation at the grassroots level, it is an organized group of selected students getting together to discuss each other's ideas. This discussion is now being done on a wiki page. The discussion helps the students stay motivated to work on their idea as well as helps build their idea into something feasible.

In-house Events/competition:

To motivate student towards entrepreneurship, e-Cell will regularly conduct in-house competition of various events such as business idea competition, case study competition, Business quiz, brand watch, innovation approach, best out- of- waste competition, innovation approaches in IT industry, new ventures lunched and their idea and profile, story writing of successful entrepreneur, Expose the youth to the latest innovations and entrepreneurial success stories etc.

Start up cell:
To connect the students with the start-ups through which start-ups get an opportunity to interact with the students and pitch their ideas to the panel of Venture Capitalists and the students get hired for summer internship.

For Smooth functioning of E-cell and carry out strategic planning with aligning our vision and mission and promote of E-cell, we should have team of following:

a. Faculty Coordinator :

There is a faculty coordinator whose role will is to see day to day affair of E-cell and organize the different events and competition. He is responsible to promote E-Cell and work under the guidance of Director. He is responsible to work according to vision and mission of the cell.

b. Student Team:

There is a student Coordinator, and Secretary cum treasurer from the student community, who will work under the guidance of committee member. They are responsible for monitoring E-cell activities and initiatives. They remain in touch various students of E-cell and other Entrepreneurship network establish in different institute.

9.7. Co-curricular and Extra-curricular Activities (10)

(The institution may specify the co-curricular and extra-curricular activities)(Quantify activities such as NCC, NSS etc.)

NCC ACTIVITIES FROM DEC 2018 TO DEC 2019

S. NO.	**DATE**	**ACTIVITY**
1	26.01.19	REPULIC DAY PARADE AT POLICE GROUND VIDISHA
2	21.06.19	INTERNATIONAL YOGA DAY CELEBRATION
3	23.07.19	PLANTATION AT NCC PARK IN COLLEGE CAMPUS
4	26.07.19	KARGIL VIJAY DIWAS(MOVIE SHOW)
5	15.08.19	INDEPENDACE DAY CELEBARATION AT COLLEGE
6	02.10.19	GANDHI JAYANTI CELIBRATON
7	01.11.19	DIAMOND JUBLEE CELEBRATION (FLAG HOSTING)
8	05.12.10	SWACHH BHARAT ABHIYAN(MONUMENTS CLEANING)
9	19.06.19 To 28.06.19	CATC CAMP
10	21.09.19 To 30.09.19	CATC CAMP

For the overall development of the students, the institute organize Techfest, Samrat Utsav, State level inter engineering college cricket tournament every year in this we organize different events like, cultural. Sports, painting, competitions through various committees. A student's newsletter and magazine is also published to exhibit their talent.

Co-curricular Activities

Engineers Day, Mathematics Day, Rashtriya Yuva Divas, International Yoga day ,Teachers Day, Women Day, World- Water Day, Earth Day, World Book Day, Press Freedom Day,world Science Day,
Quiz Competition
Tech Fest (SATYARTH)
Seminars, Workshop,
Conference & Guest Lecture (at least once in a session in each department) Institute is registered for NSS, & University Youth Festival for sports and cultural activities. Yearly excursion cum Industrial tours is conducted for students wherein students are taken to various places of interest.

Extra-curricular activities are:

Activity	**Detail of activities**
Annual Festival (SAMRAT UTSAV)	Extempore, Mehndi Competitions, , Poster Competition, Classical / Fusion Dances, Quiz, Poetry, Debate, Essay, Painting, Sketching, Photography, Robo competition, Dance (Group &Solo), Singing (Group &Solo), skit competition, Nukkad Natak, Rangoli etc. Sports Competition (kabbadi, Volley Ball ,Hand Ball, Badminton ,Cricket, Foot Ball, Kho-Kho, Chess, carom, Table Tennis, Lawn Tennis, & Athletics, Annual Festival (SAMRAT UTSAV)
Social activities	Blood Donation Camps, Rallies, Nukkad Natak on social issues, and Tree plantation.
Other	Independence Day, Republic Day, Ganesh Utsav, Rose Show, Bhajan Sandhya, Vishwakarma jayanti,
Inter Engineering College Competitions	State level Inter Engineering college cricket tournament.
Foundation Day	Alumni meet

Games and Sports facilities, and qualified sports instructors (5)

Outdoor –

1. Kabaddi
2. Volley Ball
3. Hand ball
4. Badminton
5. Cricket
6. Football
7. Kho-Kho

Indoor –

1. Chess
2. Carom
3. Table Tennis
4. Gymnasium

10.1. Organization, Governance and Transparency (55)

10.1.1. State the Vision and Mission of the Institute (5)

Vision : To contribute towards service and development of the mankind through quality education and research, in the area of science and technology.

Mission : To create quality manpower equipped with technical skills ,social values, leadership, creativity and innovation for the benefit and betterment of mankind and sustainable development of the nation.

10.1.2. Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (25)

Institutional strategic plan has been made by performing deep analysis of Strength, weakness, Opportunity and Threat of the institute. Several meetings and interactions with Management, Director, Dean Academic, Dean Research, Registrar, all HoDs, Faculties, Supporting staff, Students, Parents and Alumni were held for the same. Following key points about institute were discussed to carry out the analysis-

- Infrastructure/Laboratory/Equipment/Workshop
- Research/Consultancy
- Placement Cell
- Industry interaction
- Workshop/Training Programme for Faculty/Staff/Students
- Mentorship Programme for the students
- Active & Innovative Learning Process
- Outcome based Curriculum
- Admission policies/Fee Structure
- TEQIP-III
- MoU with Reputed Institutes/Industries
- E-Learning/Library
- Skill Development Programme
- Unnat Bharat Abhiyan
- Moodle
- Sports/clubs/Activities/social Service
- Awards/Scholarships
- IT Infrastructure/ digital technology
- Security
- Woman grievance & redressal

After several brainstorming session by keeping above key points in mind, following strategy plans and its implementation & monitoring have been set up that transform S.A.T.I., Vidisha into globally recognize technical institute-

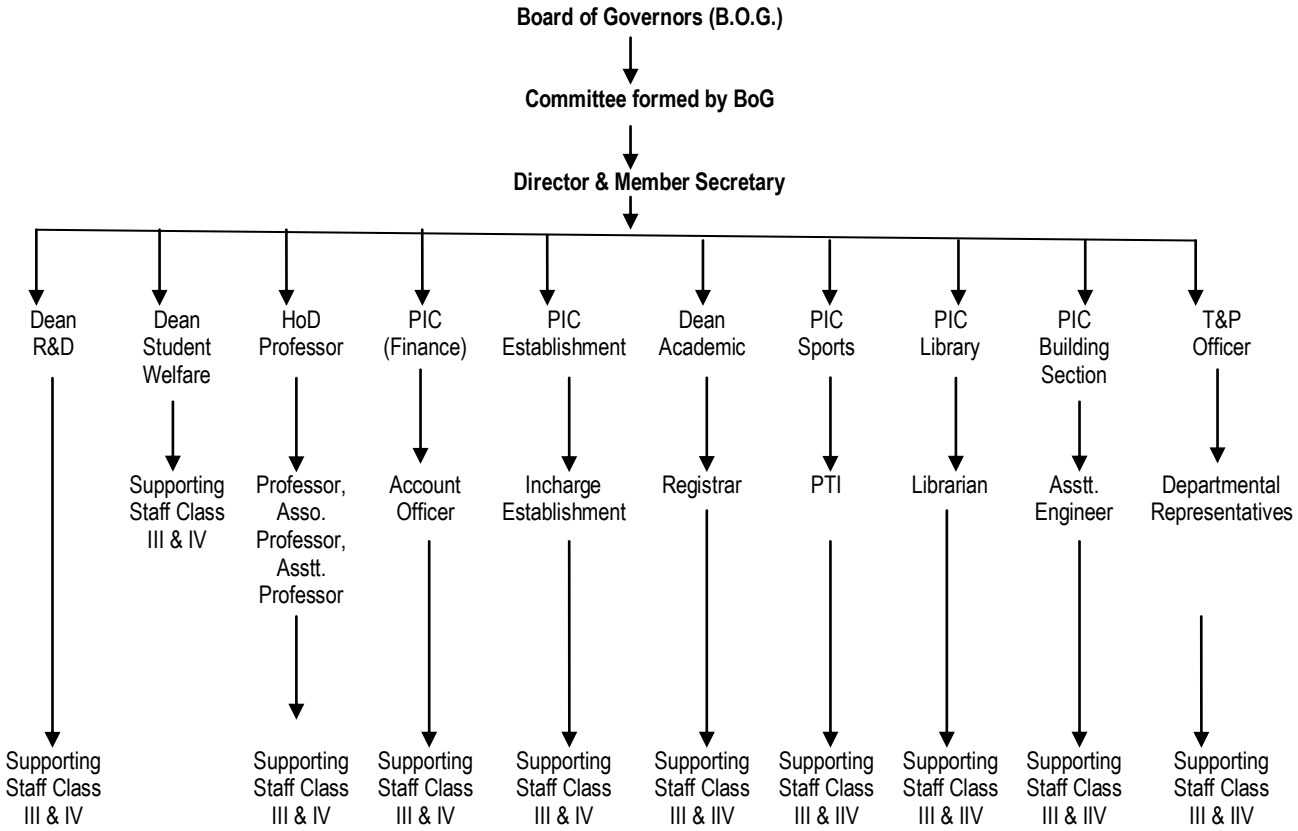
Sr. No	Strategy Plan	Implementation	Monitoring
1	To improve teaching learning environment	• Set up of new Smart Class Rooms • Adoption of Moodle • Use Moocs/NPTEL for e learning • Arrange Expert Talks • Interaction with industry person • Provide Career Guidance to students • Use service of Adjunct faculty	Director of the institute, Dean academic and HODs visit the class rooms, labs daily in order to make healthy academic environment and make sure successful implementation of outcome based education in the campus. In additions to the regular classes, expert talks

		• Successful implementation of OBE	on emerging areas also arrange weekly in the institute. Daily attendance, assignment, quizzes are uploaded on Moodle and noticed by director and HODs.
2	To improve laboratory/ library	• To setup new labs on emerging areas. • To setup modern Lab for research • Rich library resources such as reputed journals/ new books	Meeting of HODs , Dean academic , Dean research arrange once in each semester for setting up new labs or purchasing of new equipment. In-charge library regularly ask for new books/e-journal from faculties & students and arrange them in the library.
3	To enhance research culture	Funds/Workshop/Training have been arranged for the faculty/students in order to attract funded research project/consultancy	Every month Dean research arrange the meeting with director of the institute and encourage the faculty to create the research culture in the institute, arrange the workshop/training/expert talk on emerging areas
4	To enhance interaction with reputed institute	MoU with reputed institute/company has been set up to joint research & exchange of human resources	MoU with reputed institute / industry is decided in the meeting of BOG
5	To provide mentorship to students	Proper assistance is provided by TGs to the needy students in all areas such as study, fiancé, career etc	Meeting between TGs & students takes place daily and resolve various problems of students
6	To start new PG programs in emerging areas	For enhancement of research culture in the institute	Director of the institute arrange the meeting every month with Dean Academic, Dean Research and HODs and try to find the emerging areas for witch new courses can be launched
7	To obtain accreditation for various courses	Applied for NBA accreditation and prepared for that	Coordinator of NBA arrange the meeting once in a week of Head of the departments to be accredited with director and assess the status of preparation of accreditation
8	To improve quality of campus	Various steps have been taken to provide world class infrastructure in the institute such as digital technology used in every section/ high speed wi-fi/ lush green campus/ smart class rooms/ central library/ computer centre/ higenic hostels/ playgrounds/ indoor stadium/ auditorium /security/electrical maintenance	In-charge of various section such as building section, hostel warden, computer maintenance , security officer, electrical maintenance etc continuously supervise the concern section and keep the campus up-to-date for easy and better life
9	To improve students	Communication has been setup with various MNCs such as TCS, Infosys,	Placement team continuously interact with HR of various

	placement	IBM, Cap Gemini etc. for campus drives at the institute	MNCs for campus recruitment, arrange various career oriented programme at institute.
10	To increase Sports activity/social services	National level sports and cultural & technical activities have been organized. Institute participates and organize various national and international level activities such as Energy day, Science day, Yoga day, Woman day. Technical day etc.	PIC Sports & PTI interact regularly with students and arrange facilities of sports, encourage the students for participation at national level competitions. Coordinators of each clubs meet weekly and decide activities to be performed at institute level.
11	Trained students under Skill Development Program	More students have been trained under various schemes of central and state government such as PMKVY & MMKVY	Coordinator of S&D visits the class rooms regularly and assess the performance of trainee, and arrange better environment to improve themselves.
12	To improve the quality of rural areas under the "Unnat Bharat Abhiyan"	Institute is participating in full sprit under "Unnat Bharat Abhiyan" for the development and betterment of rural area	Coordinator of Unnat Bharat Abhiyan takes the meeting of concern faculty & students and make the plan weekly for the betterment of rural areas

10.1.3. Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

Organizational Chart showing the hierarchy of administration and academic is given below



For the smooth functioning of administration, following committees are formed.

(1) Administrative Committee

(i) Board of Governors

S. No.	Member list	Frequency of Meeting
1.	Shrimant Shri Jyotiraditya M. Scindia	Minimum Two meetings per year. However, the meeting may be scheduled as and when necessary.
2.	Sh. Motilal Vora	
3.	Dr. Laxmikant Markhedkar	
4.	Er. Ramesh Agrawal	
5.	Justice (former) N.K.Modi	
6.	Dr. K.K. Agrawal, Founder Vice-Chancellor of Indraprastha University	
7.	Sh. Bharat C Chhaparwal, Ex-Vice-chancellor, DAVV, Indore	
8.	Sh. Prashant Mehta (IAS retd.)	
9.	Sh. Bimal Julka IAS	
10.	Sh. Mahendra Sethia (Industrialist), Indore	
11.	Dr. Anoop Raj (Educationalist) New Delhi	
12.	Finance Secretary, Govt. of MP	
13.	Principal Secretary, Technical Education & Skill Development, Govt. of MP	
14.	Dr. N.C. Shivaprakash (AICTE Nominee)	
15.	Dr. C.M. Chitle (UGC Nominee)	
16.	Vice-Chancellor, RGPV, Bhopal	
17.	Director	
18	Institute Professor	
19.	Institute Professor	

Function and Responsibility

1. To manage the affairs of the S.A.T.I. (Degree) & to regulate its expenditure.
2. To determine the cadre and grades of the Departments and to create, suspend or abolish posts and to fix the emoluments and the terms of service of the employees of the Institute.
3. To appoint all staff in accordance with the regulations drawn up for the purpose.
4. To grant leave and allowance to determine conditions of service to enter into service contracts and grant extension of service to staff.
5. To impose penalties on the staff in accordance with the procedure laid down, for the purpose.
6. To consider the annual report and audited accounts for the previous financial year and the budget estimates of the ensuing year and to take decision thereon.
7. To appoint qualified auditors every year and to fix their remuneration.

8. The decision of the Governing Body in all matters pertaining to the managements of the Institute should be final and should not be subject to any revision by the Society or by any other organization under it.

Managing Committee

Member list	Frequency of Meeting
Shrimant Jyotiraditya M. Scindia, Chairman	Periodically
Dr. Laxmikant Markhedkar, Secretary	
Er. Ramesh Agrawal, Member	
Justice (former) N.K.Modi, Member	
Sh. Prashant Mehta (IAS retd.) , Member	
Director ,S.A.T.I. Vidisha, Member	

Function and Responsibility

(a) Subject to the general control of the Board of Governors the day to day administration and management of the Institute established by the society shall be entrusted to a Managing Consisting of not more than five members which may exercise such powers as may be delegated to it by the Society.

(b) The Board of Governors may from time to time nominee one Managing Committee for each of the institution run by it and shall also nominee its office bearers from amongst the nominated members. The Board of Governors shall be free to include in the Managing Committee such persons as may not be the members of the society.

(c) The term of office of the members of a Managing Committee as nominated shall be one year from the date of nomination.

(2) **Academic Committees :** Following committees are constituted for academics matters of the institute.

(i) Academic Affair Committee

Member list	Function and Responsibility	Frequency of Meeting
Dr. J.S. Chauhan	To take decisions on all academic and routine administrative matters.	Twice in a month
Dr. Pankaj Agarwal		
Dr. Sanjay Katarey		
Dr. Kanak Saxena		
Dr. R.N. Shukla		
Dr. Pramod Sharma, Dean (Academic)		
Dr. Shailesh Jalori		
Dr. Shailendra Shrivastava		
Dr. Rajeev Jain		
Dr. Jitendra Parashar		
Dr. Jyotsna Ogale		
Dr. Manorama Saini		
Prof. Sudhir Phulambrikar		
Special Invitees		

(ii) Proctorial Board Committee

Member list	Function and Responsibility	Frequency of Meeting
Dr. Lokesh Bajpai	To deal with cases of student conduct and discipline and decide suitable action	Periodically as and when required.
Dr. Sanjay Bhandari		
Dr. Pramod Sharma (Dean Academic)		
Dr. Shailendra Shrivastava		
Prof. C.S. Sharma		
Dr. Manorama Saini		
Prof. S.S. Goliya		
Dr. Umesh Banodha		
Er. Praveen Karkare (Registrar)		
Special invitee (if any)		

(3) Being an autonomous institute, following Academic Autonomy Committees have been constituted under Statue-37 of Rajeev Gandhi Prodhyogiki Vishwavidhlaya, Bhopal

(i) Governing Body

Member list	Function and Responsibility	Frequency of Meeting
Three members to be nominated for a period of 2 years by the management of the college of whom one shall be the chairman. The person so nominated shall include at least one outstanding educationist/ scientist/ technocrat/ jurist/ management expert	To lay down service conditions, regulates and enforce discipline among staff, Financial management and other academic and administrative matters.	Thrice in a year
Two senior most teachers of the college to be nominated by rotation according to seniority, by the Director/ Principal for a period of two years		
One nominee of the University not below the rank of Professor		
One nominee of the State Government		
one nominee of the University Grant Commission; and		
The Principal of the college – Ex-officio Member-Secretary		

(ii) Academic Council

Member list	Function and Responsibility	Frequency of Meeting
The Director/Principal of the College – Chairperson	To finally approve course of study, scheme of examination and syllabus. Maintain academic standard.	Once in a year
All Heads of Departments-Member		
One Professor from each of the Department by rotation for a period of one year according to seniority-Member		
One Reader from each Department by rotation for a period of one year according to seniority-Member		
Three University representatives nominated by the Vice Chancellor-Member		
Director of Technical Education or his nominee-Member		
The Chairman and the Secretary of the Governing Body- Member		
Dean (Academic)		

(iii) Board of Studies (In each Department)

Member list	Function and Responsibility	Frequency of Meeting
Head of the Department of the subject in the University or his nominee	To take decision on examination related matters, recommend syllabus scheme etc.	Once in a year
Head of the Department of the subject concerned in the college, not below the rank of the reader,		
Not more than two Faculty Members of that subject in the college		
Not more than two experts from outside the College/ University.		

In addition to these committees, other committees are also constituted for specific purposes. Academic departments also have committees at department level.

Service Rules and Policies :

The institute, being a government aided institute, adheres to all the service rules and procedure as notified by the government of Madhya Pradesh and amended from time to time. The selection and promotion of teachers is as per AICTE (All India council for Technical Education) norms and as approved by government of Madhya Pradesh and BoG of the Institute. Selection of teachers is done by a selection committee constituted as per norms of AICTE and Government of Madhya Pradesh. Reservation for SC/ST/OBC and Other classes in recruitment and promotions is provided as per state government policy and Roster.

10.1.4. Decentralization in working and grievance redressal mechanism (5)

Administrative powers have been delegated to senior faculty members by appointing them as Dean, Co Dean, Professor In Charges of different sections and activities. All the matters pertaining to any section or activities is placed before concern Professor Incharge or Dean for disposal who dispose the matter in consultation with the director or the management.

List of faculty members with administrative responsibilities is given below:

Member list	Administrative Responsibility	Function
Dr. Sanjay Bhandari	Dean Student Welfare	All matters related to student welfare and discipline
Dr. Sanjay Katarey	Coordinator, NBA Accreditation	NBA Accreditation
Dr. Kanak Saxena	Professor-in-Charge Establishment section	All service matter of the employees
Dr. Pramod Sharma	Dean Academic	All academic matters
Dr. G.R. Chetty	Placement Officer	Carrier guidance, Placement, Industrial training and Interaction
Dr. Rajeev Jain	Professor-in-Charge Library section	Supervision of Central Library
Dr. Shailesh Jalori	Professor-in-Charge Account section	All financial planning control, Budget
Shri Sudhir Phulambrikar	Controller Examination	Conduction of examination as autonomous institute of RGPV, Bhopal
Dr. S.S. Goliya	Professor-in-Charge Student Scholarship section	Scholarship Affairs
Dr. Umesh Banodha	Professor-in-Charge Security section	Supervision of campus security
Shri Sanjay Saraswat	Professor-in-Charge	Construction and maintenance,

	Vehicle, Water supply, Building section, Sports	vehicle maintenance and campus water supply, sports activities
Dr. Sunil Joshi	Professor-in-Charge Computer Maintenance section	Supervision and maintenance of hardware and software
Shri Praveen Karkare	Public Information Officer	To provide information under RTI act.

Grievance Redressal System : All the Staff member (faculty and supporting staff) can place their grievance to the competent higher authorities. Staff members can meet with the director and management regarding their demand and grievance for which administration always resolve sympathically in the best interest of the institute and employees. Every Saturday has been reserved by the Director for such meetings. Similarly all students can meet dean student welfare or any concerned teacher or director for their grievances.

A separate women grievance cell has been constituted under the chairpersonship of a senior woman faculty member with representation of other women employee and one girl student representation each from UG and PG classes. The cell specially hear cases related to grievances of women employees and students and recommends suitable action to the authorities.

Samrat Ashok Technological Institute
(Engineering College)
Vidisha (MP)

No.SATI/Estt/2019/ 378 Dated : 25.05.2019

Office Order

As per letter No. 588 dated 23.04.2019 Collector, District Vidisha , following Women's Grievance Cell is hereby constituted.

1. Dr. Kanak Saxena, Chairperson
2. Dr. Manorama Saini
3. Dr. Vinita Singh
4. Prcf. Shaila Chugh
5. Dr. Poonamlata Sagar
6. Smt. Bhawana Shrivastava
7. Smt. Ritu Raghuwanshi
8. Ku. Chitransee Kirar, III yr Civil (UG student, Special invitee)
9. Ku. Radhika Yadav, I yr MBA (PG student, Special invitee)

Director

Copy to :-
1 All Concerned as above
2. All HoDs/Section Incharges
3. Dean Academic
4. Registrar
5. VVNCC to upload on website
6. Steno to Director

The institute has zero tolerance policy towards ragging. Anti ragging committees has been constituted comprises of faculty members to keep a strict watch on any undesirable activities and prevent any incidence of ragging or harassment.

Samrat Ashok Technological Institute (Engg. College) Vidisha,(M.P.)

ANTI RAGGING DUTY CHART

No. Acad./Anti–Ragging./2019-20/ 1057 Date : 01/08/2019

The following staff members are allotted the anti ragging duties as given below. Staff members are requested to attend the duties allotted to them sincerely. The first member of each squad should keep the record of observations during the allotted time period and submit to the undersigned weekly.

Day	TIME		
	10.00 am to 12.30 pm	12.30 pm to 3.00 pm	3.00 pm to 5.30 pm
MONDAY	1. Dr. Sanjay Bhandari (CE) 2. Prof. R.R. Ahirwal (CS) 3. Prof.Sudhir Sharma (EE) 4. Prof. J.P. Shakya (ME) 5. Prof. Pradeep Semil (PCE) 6. Prof. Bharti Mehra (EC) 7. Prof. Chennaiah Kate (CS)	1. Dr. Shailendra Shrivastava (CS) 2. Dr. S.K. Dhakad (ME) 3. Prof. Ajay Goyal (CS) 4. Prof. Satish Pawar (CSE) 5. Prof Neeraj Sen (ME) 6.Prof. Suchi Mishra (EI) 7. Prof. Yogendra Singh (CE)	1.Dr. S.N. Sharma (EI) 2. Dr. Amitosh Singh (Hum) 3. Prof. Satyam Maheshwari (CS) 4. Dr. R.M. Saxena (ME) 5.Dr. C.P. Singh (ME) 6.Prof. Rakesh Mangore (ME) 7. Prof. Deepti Jain (EE)
TUESDAY	1.Dr. Preeti D. Swami (EI) 2.Prof. C.S.Sharma (EE) 3.Dr. J.S. Shakya (EE) 4.Prof. Sheena Kumar (EC) 5. Dr. Bablu Kirar (CE) 6. Dr. Shubha Khatri (CE) 7. Prof. Lokesh Sahu (CS)	1. Dr. Jitendra Parashar (Phy.) 2.Prof. Shivendra Singh Thakur (EE) 3.Dr. D.K. Shakya (BME) 4. Dr. Neelesh Mehra (EC) 5.Prof. Sooraj Jain (CE) 6.Prof. Narendra Mahawar (BME) 7. Prof. Ajay Sonare (ME)	1. Dr. Sanjay Katarey (ME) 2.Dr. Manoj Datar (Chem) 3. Prof. Vibha Jain (Maths) 4.Prof. Hemant Dangi (BME) 5. Prof. Kamlesh Sharma (ME) 6. Prof. Bharat Choudhary (EE) 7. Prof. Anusha P. (EC)
WEDNESDAY	1. Dr. P.L. Verma (ME) 2. Prof. Abhishek Mathur (CS) 3.Dr. Poonamlata Sagar (Maths) 4.Prof. D.P.S. Rajput (PCE) 5.Prof. Prachi Kanherkar (ME) 6. Prof. Ramesh Meesala (EE) 7. Dr. Mukesh Mishra (EC)	1. Dr. Alok Jain (EI) 2. Prof. K.K. Punjabi (CE) 3. Dr. S.K. Mahajan (Phy.) 4. Prof. Shaila Chugh (CS) 5. Prof. Sachin Jain (MBA) 6. Prof. Satyendra Jain (CA) 7. Prof. Vivek Sharma (CSE)	1. Dr. Ashutosh Datar (EI) 2. Prof. Sanjay Jain (ME) 3. Prof. Veena Datar (Humanities) 4. Prof. Anil Dubey (Maths) 5. Prof S.K. Verma (CA) 6.Prof. Sourabh Jain (EE) 7. Dr. Arghya Basu (Chem)
THURSDAY	1.Dr. Y.K. Jain (EI) 2.Prof. Sandeep Jain (ME) 3.Prof. S.S. Goliya (CE) 4.Prof. K.G. Kirar (EI) 5.Prof. Abhishek Jain (EC) 6. Dr. Rakesh Mehar (CE) 7. Prof. Bhawana Sharma(EE)	1. Prof. S.K. Sharma (EI) 2. Prof Sanjeev Gupta (EE) 3. Dr. Ravi Jain (Phy.) 4. Prof. Smriti Dubey (EC) 5. Prof. Anusha Lahoti (EE) 6. Prof. Tanu Chaturvedi (CE) 7. Prof. Nirmal Gaud (CSE)	1.Dr. Ashish Manoria (ME) 2.Dr. Pradeep Purohit (CE) 3. Prof. Sandeep Raghuwanshi (CS) 4. Dr. Sripana Vijaya Kumar (Chem) 5. Prof. Somu Chaitaniya (EE) 6. Prof. Nihit Bhatnagar (EC) 7. Prof. Mukesh Azad (CS)
FRIDAY	1.Dr. Shailesh Jalori (Maths) 2.Prof. Shilpa Datar (EI) 3. Prof. Saksham Vasudev (EC) 4.Prof.Ruchi Chauhan (PCE) 5. Prof. Deepak Sain (CS) 6.Prof. Bharat S. Chauhan (CE) 7. Prof. Tushar Lone (EE)	1.Dr.Rajeev Jain (CE) 2. Dr. Dharmesh Jain (MBA) 3.Prof. M.L. Jatav (EC) 4.Dr. Vinita Singh (Maths) 5. Prof.Pranita Jain (CS) 6.Prof. Naveen Malviya (EI) 7. Prof. Anil Suryawanshi (CS)	1. Dr. Pradeep Sharma (Chem) 2. Prof. Sanjay Saraswat (CE) 3.Dr. R.K. Pathak (Maths) 4. Prof. Anamika Kushwaha (PCE) 5. Dr. Sonia Rajput 6. Prof. Sandeep Sahu (CSE) 7. Dr. Narasinga Rao (Chem)
SATURDAY	1.Dr. Sunil Joshi (CS) 2.Prof. K.G. Kirar (EI) 3. Prof. A. Chandrawanshi (MBA) 4.Prof.Devendra Tiwari(EE) 5. Prof. Aman Sharma (EC) 6. Prof. Vipin Patait (BME) 7. Prof. Piyush Jain (CS)	1. Dr. Manorama Saini (Humanities) 2.Dr. Umesh Banodha (CS) 3.Prof. Gayatri Kushwaha (ME) 4.Prof. Sachin Kamble (CA) 5. Dr. Ashish Khaira (ME) 6. Prof. Sumeet Dhillon (CS) 7. Dr. Divya Rishi Sahu (CS)	1. Prof. Prashant Tiwari (MBA) 2. Prof. Shakuntala Chauhan (EI) 3. Prof. Sourabh Sharma (CA) 4. Prof. Deepak S. Chauhan (BME) 5. Prof. Abhishek Patel (CS) 6. Prof. Sanjeev Kumar (CS)

Note :- (I) Following staff members residing in Campus will take round in evening /night.

(1) Prof. Sanjay Jain (2) Dr. Umesh Banodha (3) Prof. Jyotsna Ogale (4) Prof. Ajay Kumar Goyal (5) Dr. Ravi Jain
(6) Dr. Ashish Mishra (7) Prof. Ramesh Meesala (8) Prof. Sakuntala Chauhan

(II) Following Professors will take round during the day as mentioned and co-ordinate with various teams of the day.
(1) Dr.Jyotsna Ogale –Monday (2) Prof. S.P. Phulambrikar – Tuesday (3) Dr. Kanak Saxena – Wednesday
(4) Dr.R.N. Shukla – Thursday (5) Dr. A.K. Saxena – Friday (6) Dr. Pankaj Agarwal – Saturday

DIRECTOR

Copy to : (1) All HOD (2) All Concerned as above (3) All Notice Boards
(4) Steno to Director Sir (5) Dean Acad.(6) Registrar (7) VVNCC to upload

10.1.5. Delegation of financial powers (5)

In order to have smooth functioning and speedy disposal, financial power have been delegated at different level as given below.

Head of the Departments	:	up to Rs. five thousand
Director	:	up to Rs. Fifty thousand
Managing Committee	:	above One lac

10.1.6. Transparency and availability of correct/unambiguous information in public domain (5)

All the important information about the Institute like fee, admission, hostel, important student notice, recruitment notice, tender notice employee details etc are available on the Institute web site www.satiengg.in. The information on the website is updated regularly.

Being a government aided Institute, Right to Information act has been in force since its implementation by the government of Madhya Pradesh. All the provision of the act are being followed in the Institute. Any type of information can be sought under the right to information act. All the mandatory information under the act has been uploaded on the Institute web site under link " Right to Information". As per the provision of the act, following officer are appointed as information officer and appellant authority.

Public Information Officer	: Er. Praveen Karkare, Registrar
Asst. Public Information Officer	: Shri Rakesh Sagar, Computer Programmer
First Appealant Authority	: Dr.J S Chauhan, Director

Details of above officials with their mobile numbers are displayed at the prominent places of the Institute.

10.2. Budget Allocation, Utilization, and Public Accounting at Institute level (15)

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3

CFY: Current Financial Year – CFYm1 (Current Financial Year minus 1), CFYm2 (Current Financial Year minus 2), CFYm3 (Current Financial Year minus 3)

Table B.10.2a

Year	Total Income in CFY:					Actual expenditure in CFY (till…)					Total No. of students
	Fees	Govt.	Grant(s)	Other Sources (specify)	Total Actual Receipts	Recurring including Salaries	Non-recurring	Special Projects/Any other, specify TEQIP/MMKVY	Total Actual Expenditures	Expenditure per students	
CFY 2016-17	118,040,645	State Govt.	49,273,000.00	31,462,178.55	**198,775,824**	225,643,170	5,225,626	14,882,285	**245,751,081**	85,406	2642
CFY 2017-18	108,425,053	State Govt.	49,599,999.00	27,295,557.00	**185,320,609**	238,066,883	25,210,629	17,905,834	**281,183,346**	95,456	2494
CFY 2018-19	99,977,160	State Govt.	49,600,000.00	61,969,573.00	**211,546,733**	260,791,653	2,442,391	59,585,960	**322,820,004**	111,307	2343
CFY 2019-20 up to 30/11/19	64,696,597.00	State Govt.	64,629,752.00	52,951,369.55	**182,277,719**	126,091,764	639,225	92,066,506	**218,797,495**	57,004	2212

Table B.10.2a CIVIL ENGINEERING DEPARTMENT

Year	Total Income in CFY:					Actual expenditure in CFY (till…)					Total No. of students
	Fees	Govt.	Grant(s)	Other Sources (specify)	Total Actual Receipts	Recurring including Salaries	Non-recurring	Special Projects/Any other, specify TEQIP/MMKVY	Total Actual Expenditures	Expenditure per students	
CFY 2016-17	10,360,775	State Govt.	8,212,167	2,691,840	**21,264,782**	13,254,597	653,203	1,860,286	**15,768,086**	45,706	290
CFY 2017-18	10,637,510	State Govt.	8,266,667	3,104,400	**22,008,577**	23,658,956	3,151,329	2,238,229	**29,048,514**	86,033	275
CFY 2018-19	9,885,535	State Govt.	8,266,667	3,618,700	**21,770,902**	24,297,789	305,299	7,448,245	**32,051,333**	87,718	277
CFY 2019-20 Upto 30-11-19	8,494,100	State Govt.	10,771,625	3,992,100	**23,257,825**	20,337,632	79,903	11,508,313	**31,925,848**	75,325	270

Table B.10.2b :

Item	Expenses CFY 2019-20 up to 30-11-19	Expenses CFY 2018-19	Expenses in CFY 2017-18	Expenses in CFY 2016-17
Infrastructural built-up	5,200,959	9,800,380	8,598,056	4,642,456
Library	12,982,022	1,195,782	3,534,189	303,170
Laboratory equipment	36,120,682	17,104,781	19,895,523	280,000
Laboratory consumables	-	-	1,587,588	-
Teaching and non-teaching staff salary	113,810,146	240,635,492	222,267,884	212,955,954
Maintenance and Spares	940,483	442,930	12,685	-
R&D	826,022	1,849,172	1,443,319	-
Training and Travel	348,236	473,717	58,339	-
Miscellaneous expenses *	48,917,181	51,791,467	23,324,768	27,569,501
Other, specify	19,036,983	18,163,750	3,497,330	-
Total	238,182,714	341,457,471	284,219,681	245,751,081

10.2.1. Adequacy of budget allocation (5)

The allocated budget is sufficient to meet the financial need of the institute. However due to decline in Grant in recent years, financial status is a bit strain.

10.2.2. Utilization of allocated funds (5)

The fund allocated in the budget has been utilized as per the budget provisions.

10.2.3. Availability of the audited statements on the institute's website (5)

The audited statements for the last three years are available on the institute website.

10.3. Program Specific Budget Allocation, Utilization (30)

Total Budget at program level: For CFY, CFYm1, CFYm2 & CFYm3

CFY: Current Financial Year – CFYm1 (Current Financial Year minus 1) CFYm2 (Current Financial Year minus 2) CFYm3 (Current Financial Year minus 3)

Table B.10.3a Name of Deptt. : Civil Engineering

Total Budget in CFY: 2019-20		Actual expenditure in CFY (till 30-11-2019)		Total No. of students in CFY:
Non-recurring	**Recurring**	**Non-recurring**	**Recurring**	**Expenditure per students**
		4,515,085.25	20,605,258.50	18,529.91

Note : Similar tables are to be prepared for CFYm1, CFYm2 & CFMm3

Table B.10.3b : Name of Deptt. : Civil Engineering

Item	Expenses CFY 2019-20 up to 30-11-19	Expenses CFY 2018-19	Expenses in CFY 2017-18	Expenses in CFY 2016-17
Laboratory equipment &	4,515,085	2,138,098	2,486,940	35,000
Software				
Laboratory consumables	-	-	198,449	-
Maintenance and Spares	117,560	55,366	1,586	-
R&D	103,253	231,147	180,415	-
Training and Travel	43,530	59,215	7,292	-
Miscellaneous expenses *				
- Salary & Allowances	14,226,268	30,079,437	27,783,486	26,619,494
- Other Contingency Exp.	6,114,648	6,473,933	2,915,596	3,446,188
Total	25,120,344	39,037,195	33,573,763	30,100,682

10.3.1. Adequacy of budget allocation (10)

The allocated budget is sufficient to meet the financial need of the department. However due to decline in income from fee component in recent years, financial status is a bit strain

10.3.2. Utilization of allocated funds (20)

The fund allocated in the budget has been generally utilized as per the budget provisions

10.4. Library and Internet (20)

10.4.1. Quality of learning resources (hard/soft) (10)

Institute has a central library which has a rich collection of books/journals/periodicals etc. Details of the library are as under.

❖ **Library space and ambience, timings and usage, availability of a qualified librarian and other staff, library automation, online access, networking, etc.**

- Carpet area of library (in m): **495.89 Sqm. or 5330.8 Sqft.**
- Reading space (in m): **154.49 Sqm. or 1663.86 Sqft.**
- Number of seats in reading space: **65**
- Number of Books Circulation per day: **165-200**
- Number of users per day: **250-300**
- Number of users (reading space) per day: **100-125**
- Timings: During Working day: **09:00 AM to 8:00 PM**
- Number of library staff: **11**
- Number of library staff with degree in Library: **02**
- Management Computerization:
  - For search: **YES**
  - Indexing: **YES**
  - Issue/return records Bar coding used: **YES**
- Library services on Internet/Intranet:
  - **E-Books Access & Downloading Facility.**
  - **E-Journals Access & Downloading Facility.**
  - **NPTEL – Lecture Videos Access Facility**
  - **NPTEL – Courses Accessing Facility**
  - **OPAC (Online Public Access Catalogue)**
- Consortium Membership:
  - **Shodh Sindhu, INFLIBNET, Gandhinagar**
  - **N-List INFLIBNET, Gandhinagar**

- **Relevance of available learning resources including e-resources**

Year	Total No. of Books (Hard/Soft)	
	Hard Copy	**Soft Copy (Subs. +Through N-List)**
2019-20	75684	139683
2018-19	75684	80654
2017-18	74346	136054

Year	Total No. of Journals/Technical Magazines Subscribed (Hard/Soft)	
	Hard Copy	**Soft Copy (Subs.+Through N-List)**
2019-20	55	6490
2018-19	55	4665
2017-18	NIL	6472

- **Digital Library**

  - **Separate Digital Library** accessible (24x7) over the Intranet/Internet
  - **Membership**: of National Digital Library, IIT Kharagpur

- **Consortium Membership:**
    a. Shodh Sindhu, INFLIBNET, Gandhinagar
    b. N-List INFLIBNET, Gandhinagar
- Availability over Internet/Intranet:
    - E-Books: **139683 Nos.**
    - E-Journals: **6490Nos.**

• Accessibility to Students

- Open Access System for searching and selection of book(s) from library collection
- OPAC (Online Public Access Catalogue) through Library Automation Software 'Koha'
- Separate webpage of Central Library Accessible over the Intranet
- e-Books & e-Journals Access & Downloading Facility within the campus
- NPTEL – Lecture Videos Access & Downloading Facilities
- e-Resource access facility through ;
    - ✓ e-Shodh Sindhu, INFLIBNET, Gandhinagar
    - ✓ N-List, INFLIBNET, Gandhinagar
    - ✓ National Digital Library, IIT Kharagpur
- Other Open Access e-Resources Access facility available on Internet

• Supports to Students for Self Learning activities

- Separate Reference Section
- Separate Reading Section
- e-Resources access points (Computers) for self learning
- Library e-Resources access facility within the Campus.
- Orientation Programmes for better utilization of library facilities
- Training Programmes for utilization of e-Resources

• Utilization of Facilities

- Number of Books Circulation per day: **150-200**
- Number of user per day: **75-100**
- Number of users (reading space) per day: **50-75**
- Number of users (e-Resources) per day: **50-75**

• Effective Availability / Purchased Record

- Print Books : (Annexure-01)
- E-Books : (Annexure -02 & 03))
- Print Journals : (Annexure -04)
- e- Journals : (Annexure -05 & 06)
- Turnitin Software : (Annexure - 07)

10.4.2. Internet (10)

***** Name of the internet provider	:	NKN (National Knowledge Network) ISP Railtel, JIO Net
***** Available Bandwidth	:	1 Gbps
*****Wifi Availability	:	Yes, External WiFi Access points installed in the campus including Hostels, Main Building, Workshop. Departments.
*****Internet Access in Labs classrooms, Library and offices of all departments	:	Yes, via Managed Network switches (L-2,L-3) connected to library, offices, labs thru fiber optic cable.
*Security Arrangement	:	for Internet security Cyberoam (300iNG) hardware firewall is installed in the campus

Declaration

The head of the institution needs to make a declaration as per the format given below:

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that information provided in this Self-Assessment Report is factually correct. I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA in case any false statement/information is observed during pre-visit, visit, post visit and subsequent to grant of accreditation.

Date: **Signature & Name**

Place: **Head of the Institution with seal**

B3. Information of Faculty

list of faculty in the Department for year July 2017-June 18

S. No	Name	PAN	Qua	Area of Speciali	Date of reaching Highest Degree	Designation	Date	Date on which Designated as	Nature of Association (Regular/	Date of Leaving (In case
1	Dr. J.S. Chauhan	AAMPC3187C	Ph.D	Cost effective	27/09/1999	Director &	01/04/1992	01/04/2000	Regular	No
2.	Dr. Sanjay Bhandari	AFIPB5321G	Ph.D	Structural Engg	02/08/2008	Professor	13/03/1990	17/08/2008	Regular	No
3.	Dr. Y.P. Joshi	AHCPJ3935C	Ph.D	Transportation Engg	11/08/1999	Professor	8/12/1982	23/08/2005	Regular	No
4.	Dr. A.K. Saxena	ANCPS1696K	Ph.D	Environmental	07/10/2004	Professor	27/02/1987	23/08/2005	Regular	No
5.	Dr. Pramod Sharma	ADMPS8218F	Ph.D	Fluid Mechanic	16/06/2009	Professor	19/08/1985	10/01/2012	Regular	No
6.	Dr. Rajeev Jain	AEEPJ8497A	Ph.D	Geo Tech. Engg.	16/01/2013	Professor	01/10/1994	16/01/2013	Regular	No
7.	Dr. Pradeep	AEXPP2034C	Ph.D	Structural Engg.	12/06/2017	Professor	9/01/1996	12/06/2017	Regular	No
8.	Prof. K.K. Punjabi	ABKPP9766D	ME	Construction	27/02/1993	Asso [illegible]	7/11/1997	01/01/2001	Regular	No
9.	Dr. S.S. Goliya	AIIPG7747C	Ph.D	Transportation	20/07/2017	Asso. Professor	27/09/2003	20/07/2017	Regular	No
10	Prof. Sanjay	AFVPS2341N	ME	Const. Tech.&	05/04/2004	Asst. Professor	26/09/2001	-	Regular	No
11	Prof. Deepak	BBIPS9973E	M.E..	Const. Tech & Mgt	04/09/2013	Asst. Professor	16/06/2015		Regular	No.
12	Prof. Ankesh Shrivastava	CITPS3723D	ME	Geo Tech. Engg.	05/10/2010	Asst. Professor	14/07/2011	-	Contract	30/06/2018
13	Prof. Mayur Jain	AIKPJ3857A	ME	Const. Tech.&	10/08/2015	Asst. Professor	16/08/2012	-	Contract	05/04/2018
14	Prof. Tanu Chaturvedi	AVSPC8735H	ME	Transportation	14/09/2015	Asst. Professor	05/07/2016	-	Contract	No
15	Prof. Sooraj Jain	ATDPJ7631C	ME	Transportation	23/03/2015	Asst. Professor	04/07/2016	-	Contract	No
16	Dr. Rakesh Mehar	AUTPM6037A	Ph.D.	Transportation	25/11/2016	Asst. Professor	01/01/2018	-	Contract	No
17	Dr. Bablu Kirar	BVRPK2928J	Ph.D.	Geo Tech. Engg.	28/02/2017	Asst. Professor	04/01/2018	-	Contract	No

18	Prof. Bharat	AIRPC0877G	M.E..	Structural Engg.	23/08/2012	Asst. Professor	01/01/2018	-	Contract	No
19	Prof. Sareesh	AKHPC6993R	M.E..	Geo Tech. Engg.	09/08/2018	Asst. Professor	03/01/2018	-	Contract	No
20	Prof. Sandeep	EEDPS3578N	M.E..	Geo Tech. Engg.	20/09/2014	Asst. Professor	03/01/2018	-	Contract	No

Table B3.1

list of faculty in the Department for year July 2018-June 19

					Date of reaching Highest Degree			Date on which	Nature of Association (Regular/	Date of Leaving (In
1.	Dr. J.S. Chauhan	AAMPC3187C	Ph.D	Cost effective &	27/09/1999	Director &	01/04/1992	01/04/2000	Regular	No
2.	Dr. Sanjay Bhandari	AFIPB5321G	Ph.D	Structural Engg	02/08/2008	Professor	13/03/1990	17/08/2008	Regular	No
3.	Dr. Y.P.	AHCPJ39	Ph.D	Transportatio	11/08/19	Professor	8/12/19	23/08/20	Regular	29/06/2
4.	Dr. A.K.	ANCPS16	Ph.D	Environment	07/10/20	Professor	27/02/1	23/08/20	Regular	No
5.	Dr. Pramod Sharma	ADMPS8218F	Ph.D	Fluid Mechanics	16/06/2009	Professor	19/08/1985	10/01/2012	Regular	No
6.	Dr. Rajeev	AEEPJ849	Ph.D	Geo Tech.	16/01/20	Professor	01/10/1	16/01/20	Regular	No
7.	Dr. Pradeep	AEXPP2034C	Ph.D	Structural Engg.	12/06/2017	Professor	9/01/1996	12/06/2017	Regular	No
8.	Prof. K.K. Punjabi	ABKPP9766D	ME	Construction Technology	27/02/1993	Asso	7/11/1997	01/01/2001	Regular	No
9.	Dr. S.S. Goliya	AIIPG7747C	Ph.D	Transportation Engg.	20/07/2017	Asso. Professor	27/09/2003	20/07/2017	Regular	No
10	Prof. Sanjay	AFVPS2341N	ME	Const. Tech.& Mgt.	05/04/2004	Asst. Professor	26/09/2001	-	Regular	No
11	Prof. Deepak	BBIPS9973E	M.E..	Const. Tech & Mgt.	04/09/2013	Asst. Professor	16/06/2015		Regular	No.
12	Prof. Tanu Chaturvedi	AVSPC8735H	ME	Transportation Engg.	14/09/2015	Asst. Professor	05/07/2016	-	Contract	No
13	Prof. Sooraj Jain	ATDPJ7631C	ME	Transportation Engg.	23/03/2015	Asst. Professor	04/07/2016	-	Contract	No
14	Dr. Rakesh Mehar	AUTPM6037A	Ph.D.	Transportation Engg.	25/11/2016	Asst. Professor	01/01/2018	-	Contract	No
15	Dr. Bablu Kirar	BVRPK2928J	Ph.D.	Geo Tech. Engg.	28/02/2017	Asst. Professor	04/01/2018	-	Contract	No
16	Prof. Bharat	AIRPC0877G	M.E..	Structural Engg.	23/08/2012	Asst. Professor	01/01/2018	-	Contract	No
17	Prof. Sareesh	AKHPC6993R	M.E..	Geo Tech. Engg.	09/08/2018	Asst. Professor	03/01/2018	-	Contract	22/05/2019

18	Prof. Sandeep	EEDPS3578N	M.E..	Geo Tech. Engg.	20/09/2014	Asst. Professor	03/01/2018	-	Contract	31/08/2018
19	Prof. Yogendra	EKKPS8762M	M.Tech	Structural	19/01/2015	Assistant	29/09/2018		Contract	No
20	Prof. Anurag		M.Tech	Structural		Assistant	29/09/18		Contract	24/12/18
21	Prof. Arpita Singh		M.Tech	Structural Engineering		Assistant Professor	29/9/18		Contract	05/10/2018

Table B3.1

list of faculty in the Department for year July 2019-20

S. No	Name	PAN No.	Qualification	Area of Specialization	Date of reaching Highest Degree	Designation	Date of Joining	Date on which Designated as Professor/ Associate Professor	Nature of Association (Regular/ contract/ Adjunct)	Date of Leaving (In case Currently Associated is "No")
1.	Dr. J.S. Chauhan	AAMPC3187C	Ph.D	Cost effective & const.	27/09/1999	Director & Professor	01/04/1992	01/04/2000	Regular	No
2.	Dr. Sanjay Bhandari	AFIPB5321G	Ph.D	Structural Engg	02/08/2008	Professor	13/03/1990	17/08/2008	Regular	No
3.	Dr. A.K. Saxena	ANCPS1696K	Ph.D	Environmental Engg.	07/10/2004	Professor	27/02/1987	23/08/2005	Regular	No
4.	Dr. Pramod Sharma	ADMPS8218F	Ph.D	Fluid Mechanics	16/06/2009	Professor	19/08/1985	10/01/2012	Regular	No
5.	Dr. Rajeev Jain	AEEPJ8497A	Ph.D	Geo Tech. Engg.	16/01/2013	Professor	01/10/1994	16/01/2013	Regular	No
6.	Dr. Pradeep Purohit	AEXPP2034C	Ph.D	Structural Engg.	12/06/2017	Professor	9/01/1996	12/06/2017	Regular	No
7.	Prof. K.K. Punjabi	ABKPP9766D	ME	Construction Technolog	27/02/1993	Asso Professor	7/11/1997	01/01/2001	Regular	No

8.	Dr. S.S. Goliya	AIIPG7747C	Ph.D	Transportation Engg.	20/07/2017	Asso. Professor	27/09/2003	20/07/2017	Regular	No
9.	Prof. Sanjay	AFVPS2341N	ME	Const. Tech.&	05/04/2004	Asst. Professor	26/09/2001	-	Regular	No
10.	Prof. Deepak Sharma	BBIPS9973E	M.E.	Const. Tech & Mgt.	04/09/2013	Asst. Professor	16/06/2015		Regular	No.
11	Prof. Tanu Chaturvedi	AVSPC8735H	ME	Transportation Engg.	14/09/2015	Asst. Professor	05/07/2016	-	Contract	No
12	Prof. Sooraj Jain	ATDPJ7631C	ME	Transportation Engg.	23/03/2015	Asst. Professor	04/07/2016	-	Contract	No
13	Dr. Rakesh Mehar	AUTPM6037A	Ph.D.	Transportation Engg.	25/11/2016	Asst. Professor	01/01/2018	-	Contract	No
14	Dr. Bablu Kirar	BVRPK2928J	Ph.D.	Geo Tech. Engg.	28/02/2017	Asst. Professor	04/01/2018	-	Contract	No
15	Prof. Bharat Singh Chauhan	AIRPC0877G	M.E.	Structural Engg.	23/08/2012	Asst. Professor	01/01/2018	-	Contract	No
16	Prof. Yogendra Singh	EKKPS8762M	M.Tech	Structural Engineering	19/01/2015	Asst. Professor	29/09/2018		Contract	No
17	Dr. Shuha Khatri	CJOPK9682B	Ph.D.	Geo Tech. Engg	09/11/2011	Asst. Professor	03-07-2019		Contract	No
18	Prof. Deepak Sharma	BBIPS9973E	M.E.	CTM	04/09/2013	Asst. Professor	03/07/2019	-	Promoted	No
19	Dr. Y.P. Joshi	AHCPJ3935C	Ph.D	Transportation Engg	11/08/1999	Adjunct faculty	30/08/2019	-	Adjunct faculty	No
20	Prof. Ramlal Raghuwans	AFYPR9559L	M.E.	Const. Tech & Mgt.	04/10/2012	Adjunct faculty	30/08/2019	-	Adjunct faculty	No