Department of Civil Engineering, Government College of Engineering, Aurangabad

Welcomes

Hon. Chairman and Experts from National Board of Accreditation

Department of Civil Engineering

Introduction

- Government College of Engineering, Aurangabad **established in 1960** with **Civil Engineering** as one of the programs offered.
- Institute was granted **autonomy** by Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, All India Council For Technical Education, New Delhi, University Grants Commission and the State Government of Maharashtra in the academic year **2006-07**
- Institute and the Civil Engineering Department recently celebrated the **Diamond Jubilee year** of establishment
- Department offers following full time undergraduate and post graduate programs
  - B.Tech. Civil Engineering 1960 Intake 60
  - M.Tech. Water Resources Engineering 2003 Intake 18
  - M.Tech. Structural Engineering 2004 Intake 18
- Civil Engineering Department is recognised **Research Centre** under the Dr. B.A.M.U. Aurangabad and also included in the list of **QIP** and **ADF centres** of AICTE

Department Achievement/ Recognition

- **Placement**: The placement of the Civil Engineering graduates through off campus and through competitive examinations conducted by the public service commission is very good
- **Research Centre**: Department is recognised as a research centre by the university and scholars are pursuing their research through various schemes e.g. National Doctoral Fellowship, Quality Improvement Program etc.
- **Curriculum Development**: Department has developed curriculum after having brainstorming sessions with various stakeholders and has introduced in-plant /Field training as a compulsory component of the curriculum
- **Local Chapters**: Department has local chapters of professional bodies like Indian Water Resources Society (Local Centre), Indian Society for Hydraulics (Local Centre), Institution of Engineers (India) Student Chapter etc.
- **Department Library:** Department has a library and it is being run by the students through CESA
- Department is recognised as **State Technical Agency** for monitoring Projects under PMGSY.
- Department contributes a major part of **Internal Revenue Generation** of the institute through testing and Consultancy work.

Department Achievement/ Recognition

- **GATE Examination**: The number of students appearing and getting qualified in the GATE examinations is continuously increasing. Department has an online software 'GATE Tutor' for preparation of GATE Examination
- **Higher Education**: The number of students getting admitted into institutes of national importance is increasing
- **MOOCS Courses**: Department encourages students to undertake NPTEL/ Swayam online courses for advanced studies and provision is made for the credit transfer of such courses
- **Performance in Competitive Examinations**: Many of the students of the department join organisations like PWD, Irrigation Department, MIDC, Various Corporations and other Government Departments through competitive examinations
- **Students Association:** Department has students association where in students arrange various cultural Programs and sports for the students of the department (Civil Engineering Students Association) for overall development of students.

Student Achievements

Sr. No.	Details of	Name of student	Achievement
1	“Wings-energy contraption” 2016,GECA	Mukin Pathan	Second prize
2	“Energy Quiz” 2017	GajananKalwe, Pravin Rode Ashish Kumar Singh , AkhileshJaurkar	Second Prize
3	“TECH EVE” (circuit fixer)2015	Rakesh Patekar Dnyaneshwar Pardeshi Sneha Verulkar	First Prize
4	Poster presentation on ‘Smart City’ MIT, AurangabadSept 2015	Rushabh Thole	First Prize
5	Mind Spark, GEC, PuneSept 2016	Shreyansh Mutha & RushabhThole	First Prize
6	International Conference on Multidisciplinary Research & Practice, Ahmadabad Management Association	Shreyansh Mutha & Rushabh Thole	Paper Presentation
7	Bending Moment, Online Competition	Shreyansh Mutha & RushabhThole	Third prize
8	Firodia Karandak	Adhiraj Patil , Aashish Bali	Won best Debut team award
9	Youth Festival – Painting 2016-17	Poonam Dhakne	2nd Prize
10	Impressions – T shirt painting 2016-17	Adarsh Malpeddiwar (SE)	1st prize
11	Speed workshop held at VIIT College at Hyderabad. 2016	Speed workshop Team	1st Prize
12	iSAFE- The Safer India Challenge’17 (16 Dec. 2017)	Indian Road Safety Campaign in association with Ministery of Road Transport and Highways, Delhi Traffic Police and NeharuYuwa Kendra	Second prize
13	Green Ambassador of Maharashtra, CMS New Delhi	Mr. Aaditya Gore	Green Ambassador of Maharashtra
14	Mind Spark At College of Engineering, Pune	Shreyansh Mutha and Thole	First Prize
15	Saving of Papers,Water and Energy by optimum utilization of Papers	Shreyansh Mutha, Nikhil Mahale, Rishabh Thole, Swarshaa Bedmutha, Amol Chaudhari, Seema Kolte, Rajashri Sarode, AshwininGapat, Kiran Ahire	Appreciation by Government of Maharashtra, as per recommendations Issued GR

Department Achievement/ Recognition

- **Field Visits:** Every year department organises field visits for the students so that they are exposed to the latest developments and techniques in the field of Civil Engineering.
- **Expert Lectures:** Department organises expert lectures from various fields for the students of the department
- Prof. Kahalekar is Enviromental appraisal member of Ministry of Environment Forest.
- Prof. Kahalekar and Prof. Regulwar appointed as representatives in National Clean Air Mission of Ministry of Environment and Forest, Government of India.
- Department is Nodal agency for Unnat Maharashtra and Unnat Bharat Program
- Dr. Regulwar is Executive Council Member of ISH, IWRS, IEI Aurangabad. And also associate Editor of Journal of Hydraulic Engineering (Taylor and Fransis), co-ordinator of AICTE-National Innovation and Start up program
- The faculty members have a very good number of publications in peer reviewed and indexed national and international journals.
- Department organised Diamond Jubilee national Conference " Innovative World of Structural Engineering" co-ordinated by Prof. R.S.Londhe and an International Conference "Sustainable Water Resources Development and Management" Co-ordinated by Prof. Regulwar and Convener Prof. G.K.Patil

Department Achievement/ Recognition

Following Table gives details of the students qualified in GATE Examinations

Sr. No.	Year of Exam	Candidates Name	Registration Number	All India Rank
1	GATE 2018	Abhijeet More	CE18S81418830	438
2		MayureshKankale	CE18S82043168	1232
3		Akshay Gajanan Agatkar	CE18S82101179	1331
4		Vedant Chapurakar	CE18S71418531	3097
5		Akshay Sonwane	CE18S81418788	3761
6		Kajal Jadhav	CE18S82046079	4580
7		Prakash Takshal	CE18S72044163	5997
1	GATE 2019	Yogeswar Vinchu	CE19S72039390	790
2		Dhiraj Chandwar	CE19S72039283	1439
3		Bhawesh Chaudhary	CE19S72038245	1783
4		Pranav Bhoskar	CE19S72070094	1999
5		RushabhSakhalikar	CE19S72039375	2455
6		Ankita Wagh	CE19S72039054	7305
7		Swapnali Tandulje	CE19S72038173	8543
8		Ajit Bhachate	CE19S82038196	8648
9		Nitish Deshamukh	CE19S71407131	12252
10		Swamisamrth Rathore	CE19S82038120	13963
11		Zaid Ashfaq Khan	CE19S82039216	14930
12		Snehal Gadekar	CE19S71407126	15818
13		Nikhil Mahale	CE19S82075053	19477
14		NavnathSontakke	CE19S72039292	20652
15		Pradnya Mahire	CE19S82039112	29087

Sr. No.	Year of Exam	Candidates Name	Registration Number	All India Rank
1	GATE 2020	DineshShelke	CE20S82029440	555
2		Sahil Bhalerao	CE20S72029322	1513
3		Zaid Khan	CE20S82029367	3934
4		Saddam Shaikh	CE20S82030263	4066
5		Subham Banore	CE20S82029305	6349
6		Nikhil Rahul Gade	CE20S82029362	6349
7		Saurabh Sonje	CE20S82034057	7141
8		Ehtesham Tamboli	CE20S82029020	14686
9		Mrunmayee Shiradhonkar	CE20S72029409	16274
10		PrateshThete	CE20S82029135	16472
11		Saurabh Shinde	CE20S82024070	27581
12		Manasi C. Umrikar	CE20S82030228	11102

Department Achievement/ Recognition

Following Table gives details of the students qualified in GATE Examination

Sr. No.	Year of Exam	Candidates Name	Registration Number	All India Rank
1	GATE 2021	Harshada Kadam	CE21S22030028	880
2		Hitesh Rajesh Kasambe	CE21S22030005	1809
3		Shubham Shelke	CE21S22033353	2398
4		ShushantDesale	CE21S22070212	2585
5		Nayan Pawar	CE21S12034112	3887
6		Krishna Bhosale	CE21S22068136	4643
7		Mrunmayee Shiradhonkar	CE21S12033213	5215
8		Atish Patil	CE21S22033241	6313
9		PradumnSuryakar	CE21S22033031	6316
10		Vikas Jagdale	CE21S12033235	6542
11		Arundhati Deore	CE21S12034432	6852
12		Divyansh Pathak	CE21S22062295	7708
13		Ajinkya Deolkae	CE21S12034274	8552
14		Sanket Ingole	CE21S22062473	9057
15		Omkar Dhamane	CE21S12035104	9832
16		Vedant Jayantkumar Dahate	CE21S22062475	10629
17		Vedant Bhamre	CE21S22033023	10869
18		Prasad Dhele	CE21S22033343	11930
19		Mohammad MunazzirAlam	CE21S22034232	12830
20		Aishwarya Balasaheb Satpute		14183
21		Kshitij Hanumant Pawar	CE21S12034061	15142
22		Yash Rikhabchand Kotecha	CE21S22034135	15661
23		Pradnya Bapusaheb Pathare	CE21S12034139	16194
24		Shriram Anandrao Tambare		16387
25		AiswaryaSatpute	CE21S22035045	17183
26		Shambhuraditya Bapusaheb Aher	CE21S12034455	17749
27		Rahul Wasekar	CE21S22034320	24103

Vision Mission and Program Educational Objectives

Vision:

To create, preserve and promulgate knowledge of civil engineering and thereby, contribute to the social, cultural, and economic well-being of the society

Mission:

1. To maintain highest possible quality of civil engineering courses for developing competent, cultured, and responsible human resource.

2. To design, develop and direct activities of civil engineering discipline.

3. To extend civil engineering facilities to stakeholders.

4. To undertake Research & Development activities in civil engineering.

5. To develop entrepreneurship amongst the students.

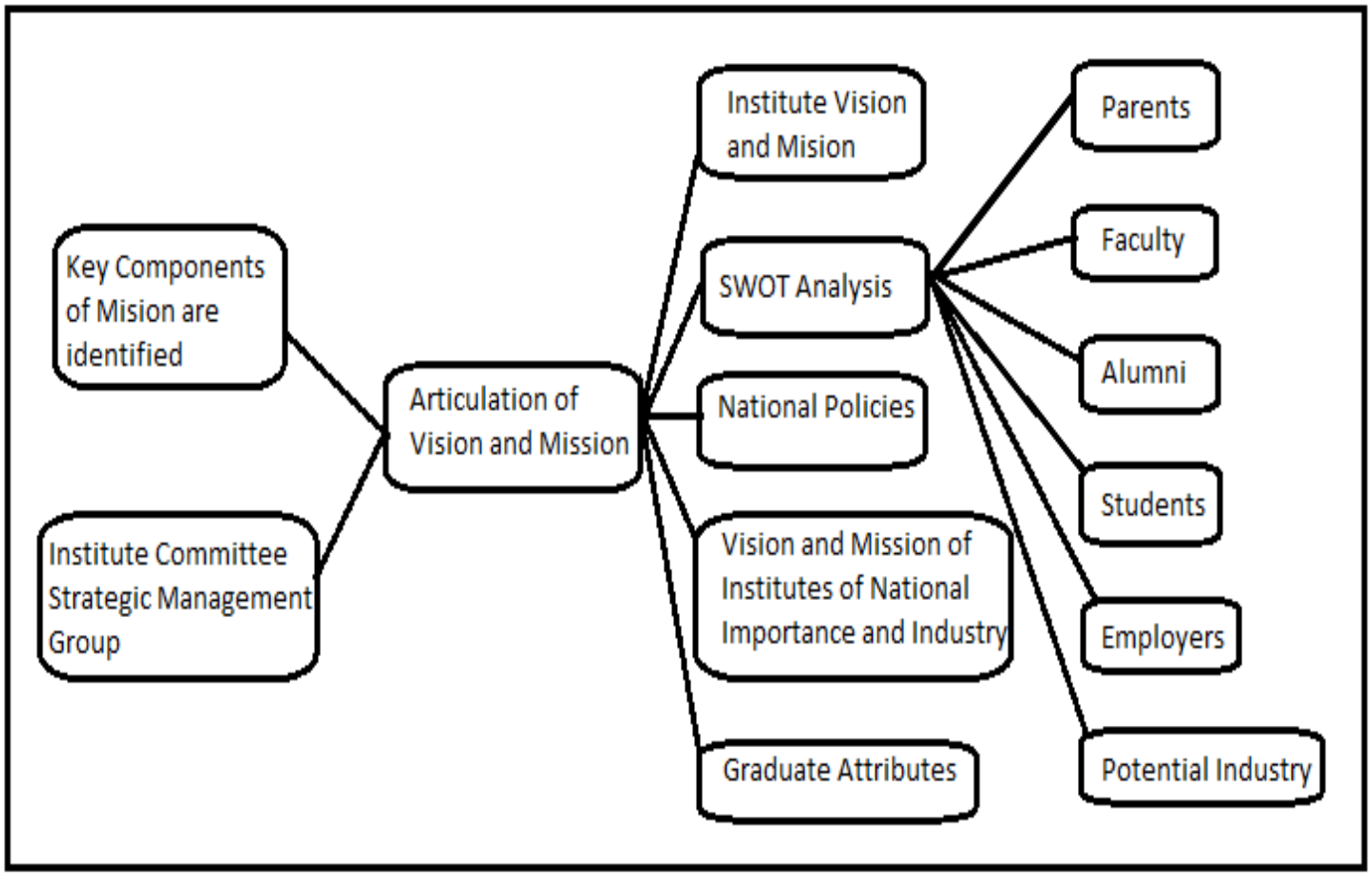
Vision Mission and Program Educational Objectives

Program Educational Objectives

1. Graduates will have sound foundation in basic sciences, mathematics, environmental studies and engineering fundamentals.
2. Graduates will plan, analyze, design and execute civil engineering and multidisciplinary projects to meet desired standards, with financial, environmental, sustainability, social, and ethical considerations.
3. Graduates will use advanced techniques, skills and modern engineering tools to practice in profession.
4. Graduates will excel in higher studies and Research & Development activities.
5. Graduates will have successful career in Civil engineering profession and diversified sectors.

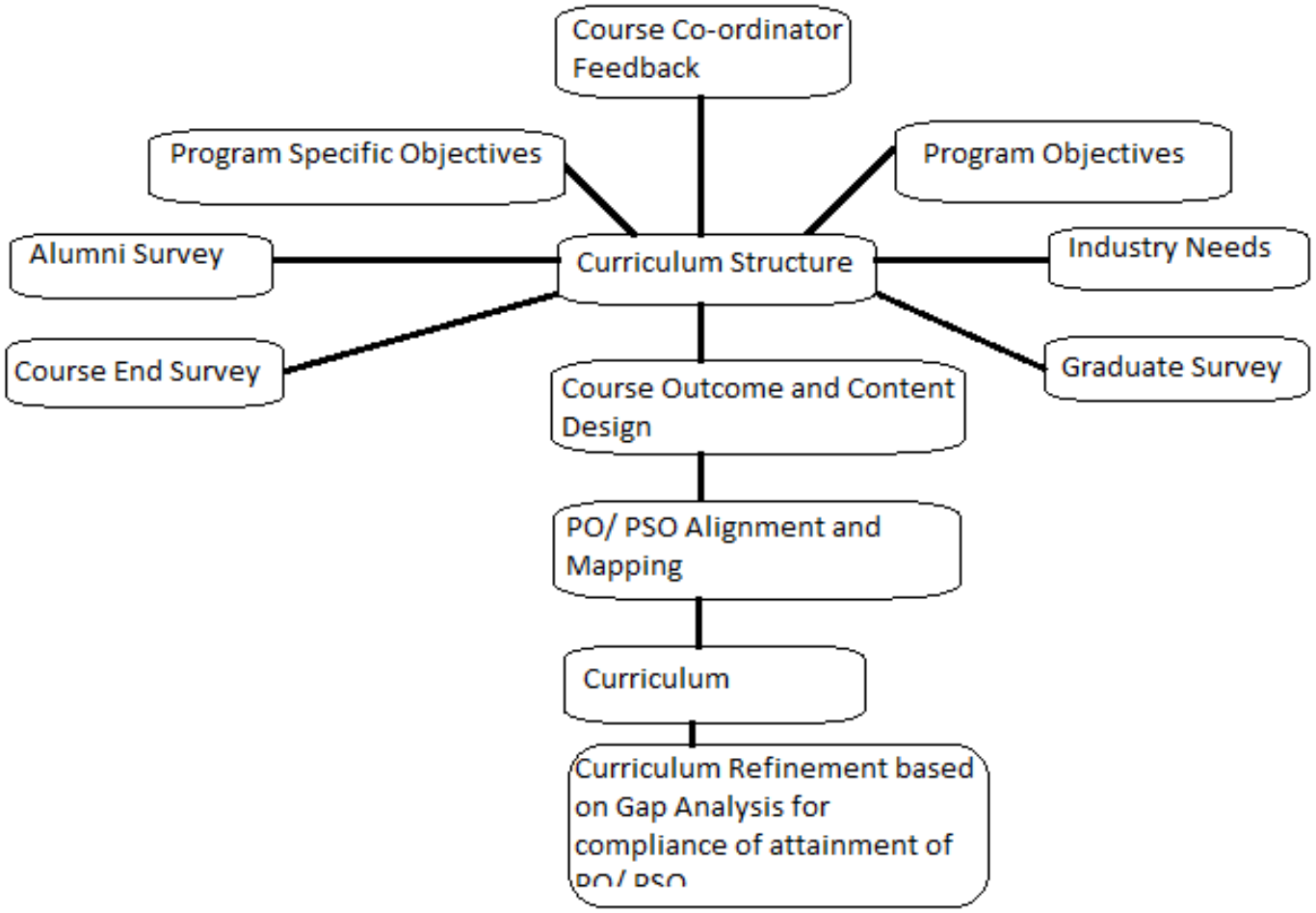
Vision Mission and Program Educational Objectives

Flow Chart showing process followed for Defining the Vision and mission of the Department



Program Curriculum and Teaching –Learning Processes

Flow chart showing process of Designing the Program curriculum



Program Curriculum and Teaching –Learning Processes

Outcome Based Education (OBE)

1. Non-CBCS: (up to 2016)
2. Choice Based Credit System (2016 onwards)
   - To provide broad based education
   - To provide students with greater flexibility in choice of courses
   - To provide students multi-disciplinary curriculum
   - To enable students to choose courses at basic/advanced level/inter-disciplinary
   - To enable students to acquire job-oriented skills
   - To enable students to progress at their own pace (Slow/ Fast)
   - To enable highly motivated students, to gain extra credits
   - To bridge the gap between professional and social exposure
   - To provide a holistic education
   - Institute has a Credit transfer policy under which a candidate may undertake MOOCs course and credits are transferred

Program Curriculum and Teaching –Learning Processes

The employability, innovation and research in curriculum design and development is ensured by:

- Involvement of industry professionals in curriculum development
- Benchmarking exercises to extract customers (employer's) requirements
- Mandatory project in Industry/Society/Institute for all students
- Synergizing curriculum with industry practices and needs

Components of the Curriculum-CBCS pattern

Course Component	**Curriculum Content (% of total number of credits of the program)**	**Total number of contact hours**	**Total number of credits**
Basic Sciences	13.00	25	23
Engineering Sciences	14.00	32	25
Humanities and Social Sciences	8.00	15	14
Program Core	42.00	93	74
Program Electives	11.00	25	20
Open Electives	7.00	12	12
Project(s)	4.00	14	7
Internships/Seminars	1.00	2	1
Any other (Please specify)			
		Total number of Credits	**176**

Course Outcomes and Program Outcomes

Course Outcomes are mapped with following Program Outcomes

- **Engineering knowledge**: an ability to apply knowledge of mathematics, science and engineering to solve civil engineering problems.
- **Problem analysis:** an ability to identify, formulate and analyze civil engineering problems.
- **Design/development of solutions:** an ability to develop and design systems components and processes to meet desired standards.
- **Conduct investigations of complex problems:** an ability to conduct experiments and to analyze and interpret experimental results and data.
- **Modern tool usage:** an ability to use techniques, skills and modern engineering tools for successful engineering practice.
- **The engineer and society:** an ability to supervise and direct activities of civil engineering works as per rules, regulations and standards for the benefit of society
- **Environment and sustainability:** an ability to complete task to meet desire needs, within realistic constraints such as environmental, social, and sustainability.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Course Outcomes and Program Outcomes

- **Individual and team work:** an ability to function on multidisciplinary project or research team.
- **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.
- **Project management and finance:** an ability of application of the elements of project management and finance.
- **Life-long learning:** an ability to recognize the need for lifelong learning to keep pace with technological advancement.

Course Outcomes and Program Outcomes

Program Articulation Matrix for Second Year CBCS Batch

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS 2001	Environmental Studies												
MA 2001	Engineering Mathematics-III	1	-	-	-	-	-	-	-	1	-	-	-
AM 2001	Solid Mechanics	3	3	-	-	-	-	-	-	-	-	-	2
CE 2002	Fluid Mechanics	3	3	3	3	3	1	2	1	2	-	-	-
CE 2003	Surveying-I	3	2	2	3	3	2	2	2	2	-	-	1
AM 2004	Lab-Solid Mechanics	3	3	2	2	2	-	-	-	-	-	-	-
CE 2005	Lab-Fluid Mechanics	3	3	2	2	2	-	-	-	-	-	-	-
CE 2006	Lab-Surveying-I	3	2	1	3	3	2	-	-	2	2	1	-
AM 2007	Civil Engineering Materials	2	2	2	1	-	2	1	-	-	-	-	-
AM 2008	Structural Analysis	3	3	2	2	2	-	-	-	-	-	1	-
CE 2009	Building Planning and Design	1	2	2	2	2	1	1	1	1	1	-	-
CE 2010	Surveying-II	3	3	2	1	2	2	1	-	-	-	1	-
AM 2011	Lab -Civil Engineering Materials	2	2	3	3	-	-	-	-	1	3	1	3
CE 2012	Lab -Building Planning and Design	-	3	2	-	2	-	-	-	-	-	-	-
CE 2013	Lab -Surveying-II	1	2	2	2	2	1	1	1	1	-	-	-
CE 2014	Open Elective-I (Rural Technology)	2	1	1	-	1	-	1	-	-	-	-	-
OE 3008	Disaster Management	1	2	2	1	2	1	-	-	-	1	-	-
CE 2014	Watershed Management	-	3	2	-	2	-	2	-	1	-	-	-

Course Outcomes and Program Outcomes

Program Articulation Matrix for Third Year CBCS Batch

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS 3002	Engineering Economics	2	1	-	-	-	1	3	-	-	-	-	-
AM 3001	Design of Steel Structures	3	3	3	-	1	-	-	-	-	-	-	-
CE 3002	Transportation Engineering	-	-	1	-	-	-	-	-	-	-	-	-
CE 3003	Environmental Engineering	-	2	1	-	2	-	1	1	1	1	1	-
CE 3004	Geotechnical and Foundation Engineering	1	2	2	3	1	3	2	-	-	2	-	3
CE 3005	Lab Transportation Engineering	1	1	2	-	-	-	-	-	-	-	-	2
CE 3006	Lab Environmental Engineering	3	2	1	2	3	2	-	-	2	2	1	-
CE 3007	Lab Geotechnical and Foundation Engineering	3	3	3	3	3	3	2	-	-	-	-	-
CE 3008	Open Elective II Disaster Management	-	1	1	-	-	-	-	-	-	-	-	-
HS 3001	Constitution of India and Professional Ethics	-	-	1	-	1	3	3	3	-	-	-	2
AM 3009	Design of RCC Structures	3	3	3	1	1	-	-	-	-	-	-	-
CE 3010	Water Resources Engineering	1	1	2	-	1	-	-	-	-	-	-	1
CE 3011	Engineering Geology	2	2	1	-	-	-	-	-	-	-	-	-
CE 3012	Lab Water Resources Engineering	1	1	3	-	-	-	-	-	-	-	-	2
CE 3013	Lab Engineering Geology	2	2	1	-	1	-	-	-	-	-	-	-
CE 3014	Lab Structural Design and Drawing (Steel)	3	2	3	1	2	1	-	-	-	-	-	2
CE 3015	Seminar	-	-	-	-	-	-	-	3	3	3	-	3
CE 3016	Open Elective III Watershed Management	-	3	3	-	2	1	2	1	2	-	-	-

Course Outcomes and Program Outcomes

Program Articulation Matrix for Final Year CBCS Batch

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE 4001	Construction Management	3	3	1	1	2	2	2	-	2	-	3	1
CE 4002	Lab. Construction Management	3	3	3	-	1	1	3	1	3	-	3	2
AM 4003	Lab Structural Design and Drawing (RCC)	3	2	3	1	2	1	-	-	-	-	-	2
CE 4004	Mini Project	1	2	1	1	1	-	-	1	1	1	1	1
AM 4005	PE I	3	3	3	1	2	1	-	-	-	-	-	-
AM 4014	PE II	3	3	-	-	1	-	-	-	-	-	-	2
CE 4020	Town Planning	-	3	3	3	3	3	2	2	2	2	-	-
AM 4022	PE III	-	2	1	-	2	-	1	1	1	1	-	-
CE 4040	PEI Lab	3	3	3	3	3	3	1	-	-	-	-	-
AM 4021	PE II Lab	2	2	3	3	-	-	-	-	1	3	1	3
AM 4025	PE III Lab	1	2	1	2	1		1	2	1	1	1	-
CE 4028	Estimating and Costing		2	1		2		1	1	1	1	1	
CE 4029	Project	3	2	1	1	1	1	1	1	1	1	1	2
CE 4030	Lab Estimating and Costing	3	2	1	2	3	2			2	2	1	-
AM 4031	PE IV		2	1		2		1	1	1			-
AM 4043	PE V	3	3	2	2	2	2	1	-	-	-	-	-
AM 4037	PE IV Lab	1	2	1	2	1		1	2	1	1	1	-
CE 4038	PE V Lab	3	3	3	3	3	3	1	-	-	-	-	-

Course Outcomes and Program Outcomes

CO PO Mapping

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA 2001 Engineering Mathematics-III													
MA 2001.1	determine the solution of second and higher order linear differential equation and apply knowledge of LDE to solve the problems in civil, mechanical and electrical engineering	1	1	2	-	-	-	-	-	1	-	-	-
MA 2001.2	classify, formulate and solve the first order and second order linear, non-linear partial differential equations and apply the knowledge of partial differential equations to solve the problems in civil, mechanical and electrical engineering	1	-	-	-	-	-	-	-	1	-	-	-
MA 2001.3	find approximate solution of ordinary differential equations of first order and find the convergence and stability of the approximate solutions	1	-	-	-	-	-	-	-	2	-	-	-
AM 2001 Solid Mechanics													
AM 2001.1	Expose to understand concepts of shear force, bending moment and plane frame structures	3	3	-	-	-	-	-	1	1	-	-	3
AM 2001.2	Gain a fundamental understanding of the concepts of stress and strain by analysis of solids and structures.	3	3	-	-	-	-	-	-	-	-	-	2
AM 2001.3	Study engineering properties of materials, and stress-strain relationship.	3	3	-	-	-	-	-	-	-	-	-	3
AM 2001.4	Learn fundamental principles of equilibrium, compatibility, and principle of superposition in linear solids and structures	3	3	1	-	-	-	-	-	-	-	-	-

Course Outcomes and Program Outcomes

Evaluation Scheme

- **Examinations:** It comprises of class test, teacher's assessment and (ESE)
- **Laboratory work:** It comprises of actual performance of practical work and internal continuous assessment and practical examination
- **Teacher's assessment:** It is based on Assignments as a part of continuous assessment, MCQ Tests, Quizzes , Presentations etc. on latest and innovative topics
- **Project:** It includes design, problem identification, problem formulation, model development, experimental investigation, data analysis, presentation etc.
- **Seminar:** It includes, review of literature from standard sources , evaluation and compilation of information, deriving conclusions, writing a report and presentation.
- Following table gives the PO attainments of the batch passed in 2019-20

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FE 2016_17	78.09	61.43	58.51	85.60	78.50	51.52	99.50	83.96	91.64	53.81	-	55.68
SE 2017_18	74.41	76.16	74.61	75.98	72.41	72.77	71.60	68.69	72.48	68.54	76.41	79.20
TE 2018_19	74.89	77.90	78.69	75.30	78.42	81.91	84.54	84.73	81.29	81.39	84.25	80.06
BE 2019_20	87.08	86.81	86.71	86.31	85.54	86.25	85.69	86.52	85.39	84.29	83.94	89.42
Average PO attainment of a Batch from FE to BE	78.62	75.58	74.63	80.80	78.72	73.11	85.33	80.97	82.70	72.01	81.53	76.09

Students' Performance

Year of entry	*N*1 + *N*2 + N3	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	70+13=83	66	62+13=75		
CAY m1 2018-19	60+11=71	29	29+11=40	29+11=40	
CAYm2 2017-18	62+13=75	37	27+08=35	27+08=35	24+08=32
CAYm3 2016-17	66+12=78	50	46+10=56	40+09=49	40+09=49
CAYm4 2015-16 (LYG)	60+14=74	53	51+14=65	51+14=65	51+14=65
CAYm5 (LYGm1) 2014-15	60+12=72	55	52+11=63	48+11=59	47+11=58
CAYm6 (LYGm2) 2013-14	63+12=75	53	49+11=60	49+11=60	49+11=60

Students' Performance

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	70+13=83				
CAY m1 2018-19	60+11=71	24			
CAYm2 2017-18	62+13=75	21	15	00	21+15+00
CAYm3 2016-17	66+12=78	12	04	02	12+04+02
CAYm4 2015-16 (LYG)	60+14=74	02	00	00	02+00+00
CAYm5 (LYGm1) 2014-15	60+12=72	00	00	00	00+00+00
CAYm6 (LYGm2) 2013-14	63+12=75	00	01	00	00+01+00

Students' Performance

Item	Last Year of Graduate		
	LYG, 19-20	LYGm1, 18-19	LYGm2 17-18
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division,if applicable	66+12=78	60+14=74	60+12=72
Number of students who have graduated without backlogs in the stipulated period	40+09=49	51+14=65	47+11=58
Success Index (SI)	0.628	0.878	0.806
Average SI	**0.771**		

Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division,	66+12	60+14	60+12
Number of students who have graduated with backlogs in the stipulated period	40+09+18	51+14+02	47+11+00
Success Index (SI)	0.859	0.905	0.805
Average SI	**0.857**		

Students' Performance

Academic Performance	CAYm1 18-19	CAYm2 17-18	CAYm3 16-17
Mean of CGPA or Mean Percentage of all successful students (X)	6.87	7.05	7.29
Total no. of successful students (Y)	73	75	66
Total no. of students appeared in the examination (Z)	73	75	69
API = X* (Y/Z)	6.87	7.05	6.97
Average API = (AP1 + AP2 + AP3)/3	6.96		

Item	CAYm1 2018-19	CAYm2 2017-18	CAYm3 2016-17
Total No. of Final Year Students (N)	67	58	61
No. of students placed in companies/Government Sector (x)	15	14	36
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	11	24	05
No. of students turned entrepreneur in engineering/ technology (z)	-	04	07
x + y + z =	26	42	48
Placement Index : (x + y + z)/N	0.388	0.724	0.786
Average placement= (P1 + P2 + P3)/3	0.633		
Assessment Points = 30 × average placement = 30*.0.633	**18.98**		

Students' Performance- Placement Details of batch passed in 2016-17

1	ALONE LUMBINI VISHALCHANDRA	BE13F01F001	Junior Engineer, Bombay Municipal Corporation
2	BARDE ASHWINI LOKRAM	BE13F01F004	Junior Engineer, Bombay Municipal Corporation
3	BEDMUTHA SWARRASHA SUNIL	BE13F01F005	Welingkar Institute of Management, Mumbai
4	BHARNE VAISHNAVI DEEPAK	BE13F01F008	Tata Projects Limited
5	BHOYAR NIKHILKUMAR YADORAO	BE13F01F009	Assistant Engineer, Water Resources Engineering Department
6	CHAKURKAR VEDANT DHANANJAY	BE13F01F010	Tata Consulting Engineers
7	CHAUDHARI AMOL AMRIT	BE13F01F011	Junior Engineer
8	ABID SAUDAGAR JAWED SAUDAGAR	BE13F01F012	Loya Pre-engineered Buildings Pvt. Ltd. Aurangabad
9	DESHMUKH MAYURI SUDHAKAR	BE13F01F014	Civil Design Engineer, CAD Desk, Bangalore
10	GHADAGE MAYUR HANMANT	BE13F01F019	Tourism Department Delhi
11	GHATGE AJINKYA DEEPAK	BE13F01F020	Civil Contractor-Self Employed
12	HANGARGEKAR PRATHMESH PRADEEP	BE13F01F022	Shree Tuljabhavani College of Engineering, Tuljapur
13	HASBE SHUBHAM NANDAKUMAR	BE13F01F023	College of Engineering Pune
14	HOLKAR RAM DAGDU	BE13F01F024	Self Employed
15	JADHAV KAJAL PREMDAS	BE13F01F025	Assistant Engineer, Public Works Department,/ College of Engineering Pune
16	JAYBHAYE KUNAL ASHOK	BE13F01F026	Self Employed
17	KADGEWAR NAGESH GANGADHAR	BE13F01F027	Permanent Way Inspector, Indian Railway/ Planning Assistant
18	KARHALE VISHAKH NILKANTH	BE13F01F029	Assistant Professor, Jalna
19	KHANDELWAL AMAR RAGHUNANDAN	BE13F01F030	Self Employed
20	KHUBALKAR KARTIK RAJURAO	BE13F01F031	Self Employed
21	LOHARE SHAMALI BABASAHEB	BE13F01F033	Junior Engineer, Bombay Municipal Corporation
22	MAHALE NIKHIL SUBHASH	BE13F01F034	Site Engineer, NHAI, Dhule
23	MHAMANE AYSHWARYA BABASAHEB	BE13F01F035	Government Job
24	MORE ABHIJEET PRATAPRAO	BE13F01F038	Project Engineer, Mumbai Railway Vikas Corp, Indian Institute of Technolgy Kanpur
25	MUTHA SHREYANS JITENDRA	BE13F01F040	Samarath Ventures, Aurangabad
26	NILAWAR VIVEK ARUN	BE13F01F041	VDC Engineer AT V Construct Private Limited
27	PAGARE AKSHAY DILIP	BE13F01F042	Loya Pre-engineered Buildings Pvt. Ltd. A'bad
28	PATIL BHUPENDRA RAVINDRA	BE13F01F043	Section Engineer, Indian Railways
29	PATIL VISHWAJIT DIPAK	BE13F01F044	Junior Engineer, Mahanagarpalika, Nashik
30	SALUNKE SANJEET BAPURAO	BE13F01F046	IIT Guwahati
31	SAWASE TUSHAR VITTHAL	BE13F01F047	V.N.I.T.Nagpur
32	LAHANE OM BALIRAM	BE13F01F049	Assistant Town Planner Government of Maharashtra
33	ACHMARE SHUBHAM DATTATRAY	BE13F01F051	Nagarpalika
34	SOLANKE AYESHA CHATARSINGH	BE13F01F052	Assistant Executive Engineer, WRD
35	SONAWANE KAMLESH POPATRAO	BE13F01F053	Junior Engineer, Bombay Municipal Corporation
36	SONAWANE PRATIK BALKRISHNA	BE13F01F054	Section Engineer, Indian Railways
37	SONVANE AKSHAY BALIRAM	BE13F01F056	Assistant Engineer, VR Techniques, Noida, UP, V.N.I.T.Nagpur
38	TARWADE AJINKYA GOVINDRAO	BE13F01F058	Self Employed
39	THOLE RUSHABH SHEKHARCHAND	BE13F01F063	Aadi Engineers and Consultant Owner
40	DANDGE ANKUR RAJDHAR	BE13F06F017	Assistant Engineer MSETCL
41	AHIRE KIRAN MAGAN	BE14S01F001	Junior Engineer, Irrigation Department, Kolad Sub Div
42	DANGE KRUSHNASAGAR KARBHARI	BE14S01F002	Junior Engineer, Bombay Municipal Corporation
43	GAIKWAD RAVSAB DIGAMBER	BE14S01F003	Junior Engineer, Vidarbaha Irrigation Dept. Nagpur
44	GAPAT ASHWINI SURESH	BE14S01F004	Junior Engineer Public Works Department
45	MANJULE NIHAL DHONDIRAM	BE14S01F007	Junior Engineer, Bombay Municipal Corporation
46	NAGE PRIYANKA ASHOK	BE14S01F008	Junior Engineer, Bombay Municipal Corporation
47	PATIL SANTOSH SHIVAJI	BE14S01F010	Assistant Engineer, Public Works Department
48	SARODE RAJASHRI KAMALAKAR	BE14S01F011	Junior Engineer, Bombay Municipal Corporation

Students' Performance- Placement Details of batch passed in 2017-18

1	AKSHAY GAJANAN AGATKAR	BE14F01F001	Construction Manager, Godrej Properties, Pune
2	AMAR ARUN BAGADE	BE14F01F005	IIT Kharagpur
3	SAYALI BHAGWANRAO BARSALE	BE14F01F007	N.I.T.Warangal
4	DHRUTI SURYAKANT BAWASKAR	BE14F01F008	Sardar Patel College of Engineering Mumbai
5	PRANAV PRASHANT BHOSKAR	BE14F01F009	N.I.T.Warangal
6	NITISH PRAKASHRAO DESHMUKH	BE14F01F010	Government College of Engineering Aurangabad
7	PRAJAKTA SADASHIO DHARNE	BE14F01F013	Junior Engineer, Zilla Parishad, Chandrapur
8	SNEHAL ANANT GADEKAR	BE14F01F014	Government College of Engineering Aurangabad
9	MAHESH SHIVAJI HAJARE	BE14F01F016	Civil Engineer
10	MAYURESH BABASAHEB KANKRALE	BE14F01F020	Indian Institute of Management, Bangalore/ IIT Kharagpur
11	ANJALI ASHOK KHILLARE	BE14F01F022	College of Engineering Pune
12	SHUBHAM SHAILENDRA MAHESHWARI	BE14F01F027	Assistant Manager
13	AJINKYA MALLIKARJUN MALI	BE14F01F028	Government College of Engineering Aurangabad
14	ABDULAZIZ AKHILAHEMAD MOMIN	BE14F01F030	College of Engineering Pune
15	RAGHAVENDRA RAVINDRA NAIK	BE14F01F031	Self Employed Aurangabad
16	ABHIJIT GANESHRAO NAVALE	BE14F01F032	College of Engineering Pune
17	DINESH ASARAM SHELKE	BE14F01F033	Indian Institute of Technology Bombay
18	ONKAR DATTAKUMAR PARDESHI	BE14F01F035	Indian Institute of Management, Vishakhapattanam
19	SNEHAL UDDHAVRAO PATIL	BE14F01F038	Government College of Engineering Aurangabad
20	YASH SUNIL PATIL	BE14F01F039	K.J.Somayya Institute of Management Studies and Research
21	KUSHAL KESHAO PAWAR	BE14F01F042	IIM Kolkata
22	MINAL RAVINDRA PAWAR	BE14F01F044	Junior Engineer, Bombay Municipal Corporation
23	NILESH UMESH RAJULWAR	BE14F01F047	Real Estate
24	RUSHIKESH DNYANESHWAR ROTE	BE14F01F049	IIT Bombay
25	HIMANSHU PRITAM SAKHARE	BE14F01F050	IIM Tiruchirapalli
26	VISHAL TULSHIRAM SANAP	BE14F01F051	Government College of Engineering Aurangabad
27	MAHESH VASANT SARJE	BE14F01F052	Indian Institute of Technology, Roorkee
28	SOHAIL SHAIKH ROUF SHAIKH	BE14F01F054	The University of Sheffield
29	PRAKASH AJAY TAKSAL	BE14F01F055	V.N.I.T.Nagpur, IIT Kharagpur
30	SHUBHAM SANJAY TAPADIYA	BE14F01F057	Civil Engineer
31	MOHNISH MAHENDRA WAIKAR	BE14F01F059	College of Engineering Pune
32	PRASHANT PRALHAD DOIFODE	BE14F01F060	Self Employed
33	NAGARGOJE RANGANATH GOVIND	BE14F01F061	Junior Project Engineer, Progressive Civil Construction, Mumbai
34	POOJA RAJABHAU LANDGEPATIL	BE15S01F001	Junior Engineer, Zilla Parishad, Latur
35	PREETI BALASAHEB GODAGE	BE15S01F002	Billing Engineer at Saideep Enterprises
36	HARSHAL SAHEBRAO GANDHARE	BE15S01F003	Junior Engineer, Ministry of Road Transport and Highways
37	SAMRAT SOMANATH SHELKE	BE15S01F005	Junior Project Engineer, Progressive Civil Construction, Mumbai
38	SURESH KAILASH NEMADE	BE15S01F006	Junior Project Engineer, Progressive Civil Construction, Ltd. Mumbai
39	VAISHALI VIJAY CHANDRAKAPURE	BE15S01F007	Junior Engineer, Zilla Parishad, Chandrapur
40	GEETANJALI KALISDASRAO MANDLIK	BE15S01F009	Junior Engineer, Mumbai
41	OM NAMDEORAO RAUT	BE15S01F010	Ramdeobaba College of Engineering and Management, Nagpur
42	SHAMBHURAJ VIJAY DHOTRE	BE15S01F012	Junior Project Engineer, Progressive Civil Construction, Mumbai

Students' Performance - Placement Details of batch passed in 2018-19

1	KALPESH SHYAM RAJPUT	BE15F01F002	LandMark Surveys, Aurangabad
2	DHIRAJ NARSINGRAO CHANDAWAR	BE15F01F008	IIT Kanpur
3	BHAVESH SANJAY CHAUDHARI	BE15F01F009	Indian Institute of Technology, Kharagpur
4	HARSHADA DATTATRAYA KADAM	BE15F01F019	IIT Bombay
5	ZAID ASHFAQUE KHAN	BE15F01F020	College of Engineering Pune
6	PRATHMESH RAJENDRA KOTKAR	BE15F01F025	Lodha Builders, Mumbai
7	ANMOL VINAYAK MAHAJAN	BE15F01F029	NICMAR, Pune
8	NARAYAN VITTHAL MAHANOR	BE15F01F030	Lodha Builders, Mumbai
9	PRADNYA ANIL MAHIRE	BE15F01F031	Government College of Engineering Aurangabad
10	ADARSH BHASKAR MALPEDDIWAR	BE15F01F033	IISC Bangalore
11	NADEEM NAZIR KHAN	BE15F01F035	Madhure Infra Engineering, Pune
12	RUCHITA JAGANNATH PATIL	BE15F01F038	Shubhshri Constructions, Aurangabad
13	TEJAS DILIPKUMAR PATIL	BE15F01F039	NICMAR, Pune
14	SAURABH SANJAY SHINDE	BE15F01F048	Sardar Patel College of Engineering Mumbai
15	SWAPNALI SANJAY TANDULJE	BE15F01F053	Government College of Engineering Aurangabad
16	YOGESHWAR ASHOK VINCHU	BE15F01F057	Indian Institute of Technology, Bombay
17	SHIVAM SUNILRAO WAKODKAR	BE15F01F059	Lodha Builders, Mumbai
18	SHRADDA BHASKARRAO ARIKAR	BE16S01F001	Junior Engineer, Pubilic Works Department, Kokan
19	AASHISH VILAS BHAMARE	BE16S01F003	Shubhshri Constructions, Aurangabad
20	SHWETA RAMDAS BHOR	BE16S01F004	Junior Engineer, Water Conservation Department Nashik
21	SHIVPRASAD DATTATRAYA DHUMAL	BE16S01F005	Junior Engineer, Pubilic Works Department, Pune
22	ROHAN MALLINATH KAMBLE	BE16S01F006	Public Works Department Junior Engineer, Mumbai
23	SOURABH VASANT KARPE	BE16S01F007	Lodha Builders, Mumbai/ Junior Engineer, Public Works Department
24	GANESH HARISHACHANDRA PANDIT	BE16S01F010	Lodha Builders, Mumbai
25	BHAIRAVI BHALCHANDRA PATIL	BE16S01F011	Junior Engineer, Public Works Department, Mumbai
26	SAYALI RAJANAND RAUT	BE16S01F013	Junior Engineer, Public Works Department, Nagpur

Faculty Information and Contributions

Name of the faculty Member		Dr.U.J. Kahalekar	Dr. I. K. Pateria	Dr. K. A. Patil	Dr. R.V. Shetkar
Degree (Highest degree)	Qualification	Ph.D.	Ph.D	Ph.D.	PhD
University		Dr. B.A.M.U. Aurangabad	Dr. B.A.M.U. Aurangabad	Dr. B.A.M.U. Aurangabad	NITK, Suratkal
Year of attaining highest qualification		2011	2004	2001	2009
Association with the institute		28 Yrs	30 Yrs	20 Yrs	11 Years
Designation		Professor	Professor	Professor	professor
Date on which Designated as Professor/Associate Professor		27.01.2004	01.01.2009	19.06.2014	17.09.2010
Date of Joining the Institution		26.07.2005	17.07.1999	01.07.2003	20.07.2010
Department		Civil Engineering	Civil Engineering	Civil Engineering	Civil Engineering
Specialization		Environmental Science and Engineering	Structural Engineering	Water Resources Engineering and Fluid Mechanics	Water Resources Engineering
Research Paper Publication	Academic Research	21	41	82	24
Ph.D. Guidance		-	-	5	02+04*
Faculty Receiving Ph.D. during the Assessment Years		-	-	-	-
Currently Associated (Y/N) Date of Leaving		Y	On Deputation (Central Govt)	N (1/6/2018)	Y
Nature of Association (Regular/Contract)		Regular	Regular	Regular	Regular

Faculty Information and Contributions

Name of the faculty Member		Dr.R.M. Damgir	Dr. G.K. Patil	Dr.D.G. Regulwar	Dr.P.A. Sadgir
Qualification	Degree (Highest degree)	Ph.D.	Ph. D.	Ph.D.-	Ph.D.
	University	Dr. B.A.M.U. Aurangabad	Dr. B.A.M.U. Aurangabad	NIT Warangal	RGPV Bhopal sgsit indore
	Year of attaining highest qualification	2011	2016	2006	2007
Association with the institute		21 Years	16 Years	20.5 Years	14.5 Years
Designation		Associate Professor	Associate Professor	Professor	Professor
Date on which Designated as Professor/Associate Professor		01.01.2006	27.02.2013	12.01.2015	23.06.2015
Date of Joining the Institution		04.09.1998	01.07.2003	10.11.1998	04.11.2003
Department		Civil Engineering	Civil Engineering	Civil Engineering	Civil Engineering
Specialization		Structural Engineering	Civil Engineering	Water Resources Engineering	Environmental Engineering
Academic Research	Research Paper Publication	28	12	110	100
	Ph.D. Guidance	01	-	05+05*	04+02*
	Faculty Receiving Ph.D. during the Assessment Years	-	Y (2016)	-	
Currently Associated (Y/N) Date of Leaving		Y	Y	Y	N (1/6/2018)
Nature of Association (Regular/Contract)		Regular	Regular	Regular	Regular

Faculty Information and Contributions

Name of the faculty Member	Qualification			Association with the institute	Designation Date on which	Designated as Professor/Associate Professor Date of Joining the Institution	Department	Specialization	Academic Research			
	Degree (Highest degree)	University	Year of attaining highest qualification						Research Paper Publication	Ph.D. Guidance Faculty	Receiving Ph.D. during the Assessment Years	Currently Associated (Y/N) Date of Leaving	Nature of Association (Regular/Contract)
Dr.S.S. Koranne	Ph. D	Dr. B.A.M.U. Aurangabad	2017	15.5 Years	Associate Professor	04.11.2011 04.11.2003	Civil Engineering	Geotechnical Engineering	21	-	16/1/ 2017	Y	Regular
Dr.Pranesh B. Murnal	Ph.D	IITB	2000	10 Years	Professor	23.08.2002 12.05.2011	Applied Mechanics	Structural Engineering	68	04+02*		Y	Regular
Dr. R.S. Londhe	PhD	IIT Roorkee	2008	15 Years	Professor	24.10.2017 26.09.2006	Applied Mechanics	Structural Engineering	37	0+04*		Y	Regular
Dr. S. N. Deshmukh	Ph.D.	IIT Bombay	2017	13 Years	Associate Professor	02.01.2006 20.07.2008	Applied Mechanics	Structural Engineering	3	-	28/4/ 17	Y	Regular

Faculty Information and Contributions

Name of the faculty Member		Dr. M.G. Shaikh	Dr. S.S. Jamkar	Dr. M.B. Varma	Dr. S A Bhalchandra
Qualification	Degree (Highest degree)	Ph.D.	PhD	PhD.	PhD
	University	IIT Madras	NIT Warangal	Dr. B.A.M.U. Aurangabad	Dr. B.A.M.U. Aurangabad
	Year of attaining highest qualification	2006	2006	2013	2001
Association with the institute		14 Years	22 Years	22.5 Years	14.5 Years
Designation		Associate Professor	Professor	Associate Professor	Professor
Date on which Designated as Professor/Associate Professor		01.01.2006	30.05.2014	24.12.2013	01.01.2006
Date of Joining the Institution		01.01.2006	15.03.2009	11.07.2010	28.07.2011
Department		Applied Mechanics	Applied Mechanics	Applied Mechanics	Applied Mechanics
Specialization		Structural Engineering	Structural Engineering	Structural Engineering	Structural Engineering
Academic Research	Research Paper Publication	36	53	52	42
	Ph.D. Guidance Faculty	02+03*	01+03*	-	0+04*
	Receiving Ph.D. during the Assessment Years				
Currently Associated (Y/N)		N	Y	N	Y
Date of Leaving		(10/6/19)			
Nature of Association (Regular/Contract)		Regular	Regular	Regular	Regular

Faculty Information and Contributions

Name of the faculty Member	Qualification			Association with the institute	Designation	Date on which Designated as Professor/Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving (in case Currently Associated is "No")	Nature of Association (Regular/Contract)
	Degree (Highest degree)	University	Year of attaining highest qualification							Research Paper Publication	Ph.D. Guidance Faculty	Receiving Ph.D. during the Assessment Years		
Mr. Dhananjay Girdha	M.E.	Dr. B.A.M.U. Aurangabad	2017	03 Years	Adjunct	09.07.2019	09.07.2019	Civil engineering	Structural Engineering	-	-	-	Y	Contract Basis
Mr. Bilal Haji	M.E.	Dr. B.A.M.U. Aurangabad	2015	02 Year	Assistant Professor	-	27.07.2016	Civil Engineering	Civil Engineering	-	-		Y	Visiting
Mr. Hasmi S Mujahid	M.E.	Dr. B.A.M.U. Aurangabad	2016	02 Year	Assistant Professor	-	14.08.2018	Applied Mechanics	Structural Engineering	-	-		Y	Visiting
Mr. Sohel Shaikh	M.E.	Dr. B.A.M.U. Aurangabad	2018	02 Year	Assistant Professor	-	14.08.2018	Applied Mechanics	Structural Engineering	03	-		Y	Visiting
Ms. Isha Joshi	M.E.	G.T.U. Gujarat	2016	01 Year	Assistant Professor	--	01.02.2021	Civil Engineering	Environmental Engineering	02	-	-	Y	Visiting
Ms. Rohini Haribhau Munde	M.E.	Dr.B.A.M.U. Aurangabad		01 Year	Assistant Professor	--	15.02.2021	Civil Engineering	Structural Engineering	01	--	--	Y	Visiting

Infrastructure and Support staff

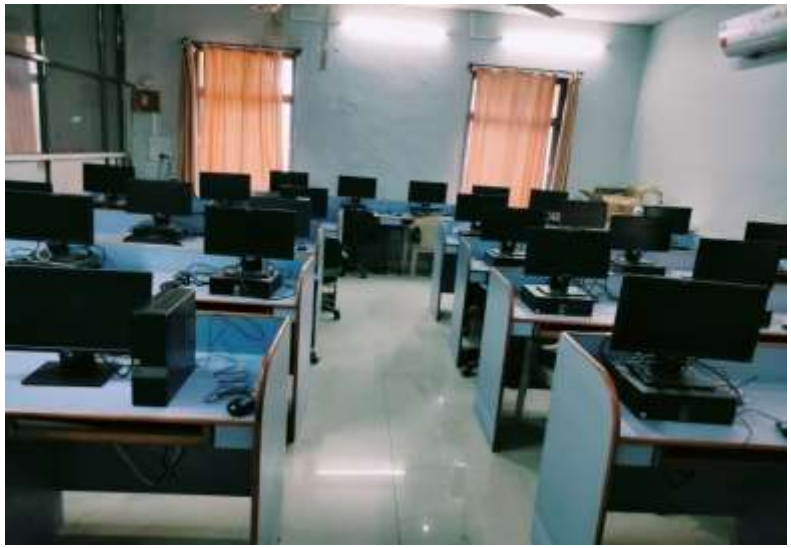
Sr. No.	Name of The Laboratory	Technical Manpower		
		Name	Designation	Qualification
01	Computer Laboratory (150 Sq.M)	Mr. Shejul S.E	Technical Asstt.	B.Sc.
02	Environmental Engineering Laboratory (136 Sq.M)	Mr. Karegaonkar B P	Lab Assistant	SSC, ITI
03	Survey Store (131 Sq.M)	Shri Dane S U	Survey Equipment Mechanic	ITI (Surveyor) BA, MSW
04	Geotechnical Engineering Laboratory (185 Sq.M)	Shri Dane S U	Survey Equipment Mechanic	ITI (Surveyor) BA, MSW
05	Fluid Mechanics Laboratory (360 sq m)	Shri Karegaonkar B P	Lab Assistant	SSC, ITI
06	Transportation Engineering Laboratory (80 sq m)	Mr. Shejul S.E.	Lab Assistant	B.Sc
07	Geology Laboratory (120 m)	Mr. Karegaonkar B P	Lab Assistant	SSC, ITI
08	Computer Laboratory 2 (54 sq m)	Mr. Chandrakant P. Kale	Lab Assistant	M.A.
09	Engineering Mechanics Laboratory (76.5 sq m)	Sonyabapu L. Sumbar	Lab Assistant	B.A.
10	Strength of Materials & Structural Dynamics Laboratory	Sonyabapu L. Sumbar	Lab Assistant	B.A.
11	Concrete Laboratory (139.54 sq m)	Mr. Chandrakant P. Kale	Lab Assistant	M.A.
12	Structural Engineering Laboratory	Sonyabapu L. Sumbar	Lab Assistant	B.A.

Facilities and Technical Support

Class Rooms with LCD Projector, Digital Board, Smart Board

Facilities and Technical Support

- Laboratories – Computer Laboratory, Solid Mechanics Laboratory



Facilities and Technical Support

Civil Engineering Laboratories

Loading Frame

Continuous Improvement

POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	80.0	78.62	It is observed that more improvement in teaching learning methods and assessment techniques is essential. Hence the required target can be achieved. Based on the closed looping structure of OBE, the attainment can be improved. Implementation of Bloom's taxonomy in question paper setting has been started from Even semester of academic year 2018-19. The PO1 is mapped with 43 courses and 198 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

POs	Target Level	Attainment Level	Observations
PO2: 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.			
PO2	80.0	75.58	Teaching – learning process to be further improved to achieve the target. Ability of Realizing the problem and providing a solution to it based on engineering knowledge is to be nurtured amongst students. Also encourage students to read the literature from journals and conferences. The PO2 is mapped with 48 courses and 255 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below

Continuous Improvement

POs	Target Level	Attainment Level	Observations
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 the public health and safety, and the cultural, societal, and environmental considerations			
PO3	80.0	74.63	It is observed that students should analyze and solve more problems, using engineering approach in consideration with the safety, society and environment. Exposure towards public health, safety, culture and environment conditions is required to be given to students. The PO3 is mapped with 51 courses and 229 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

POs	Target Level	Attainment Level	Observations
PO4: 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.			
PO4	82.0	80.80	Students should verify theory concepts in lab sessions of the subject. Ability to identify the task, preparing the set up required, experimenting and analyzing the results is to be focused by the students. The PO4 is mapped with 32 courses and 152 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

Continuous Improvement

POs.	Target Level	Attainment Level	Observations
PO5: 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			
PO5	80.0	78.72	It is observed that, with the rapid improving technology, curriculum should be updated and accordingly upgradation of laboratory should be a continuous process. Students will practice on the new setups. This will also help in reducing the gap of industry and academia. The PO5 is mapped with 44 courses and 224 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

POs	Target Level	Attainment Level	Observations
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	85.0	73.11	It is observed that it should be continuous process to expose the new technology to students. Accordingly actions are mentioned. The PO6 is mapped with 39 courses and 151 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

Continuous Improvement

POs	Target Level	Attainment Level	Observations
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	85	85.33	Sustainable development is the need of time. So engineering education should also be a part of it. Hence students are to be nurtured accordingly. The PO7 is mapped with 30 courses and 133 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

POs	Target Level	Attainment Level	Observations
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	82.0	80.97	During the career, certain norms and ethics are to be followed. That leads to improved efficiency, good work environment, smooth execution etc. Hence students are to be made aware of ethical practices. The PO8 is mapped with 25 courses and 103 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

Continuous Improvement

POs .	Target Level	Attainment Level	Observations
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	84	82.70	Considering the need of the society/stake holder's problems, interdisciplinary or connecting different divisions within the subject domain is unavoidable. Therefore students should be exposed to interdisciplinary projects and tasks. While doing so, a good team work can be developed. It will lead to better deliverables. The PO9 is mapped with 32 courses and 135 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

POs	Target Level	Attainment Level	Observations
PO10: 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			
PO10	80.0	72.01	It is observed that the communication skills of students are not up to the mark. Improvement of this will help in effective communication with engineering community and society with the help of effective reports and documentation, effective presentation. Therefore the communication skills should be improved. The PO10 is mapped with 23 courses and 86 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

Continuous Improvement

POs ·	Target Level	Attainment Level	Observations
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	84.0	81.53	It is observed that the development of understanding the field situation and providing required engineering solution is essential to the students. To improve this skill, the students should be good at team work and should be able to coordinate multiple disciplines' principles for given task. The PO11 is mapped with 20 courses and 80 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

POs	Target Level	Attainment Level	Observations
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	82.0	76.09	It is observed that with the rapid changing technology, students should develop self-learning approach. They should learn improvements in existing technology and also new technology after graduation. To attain the target few more efforts are to be put in. The PO12 is mapped with 28 courses and 81 Course Outcomes. In order to improve the attainment of this PO, each of these CO has partial contribution. Sample CO related observations and respective action taken are discussed below.

OBE Philosophy of the Department

Course Articulation Matrix (Non-CBCS)

CE-244.1	Explain the properties of fluids, fluid statics, fluid dynamics and viscous flow	3	3	1	2	-	-	-	-	-	-	-	-	1	-
CE-244.2	compute discharge through various discharge measuring devices	-	3	2	2	1	1	-	-	-	-	-	-	3	-
CE-244.3	To demonstrate various pressure measuring devices, discharge measuring devices and metacentric height	-	3	3	3	2	2	2	-	1	-	-	-	3	-
CE-244.4	Illustrate flow profiles around submerged bodies	2	3	3	-	1	2	-	-	-	-	-	-	2	-
CE-244 Fluid Mechanics I		1	3	2	2	1	1	-	-	-	-	-	-	2	-
CO 245.1	Select the equipment for linear and angular measurement	-	-	-	-	-	-	2	2	-	-	-	-	-	-
CO 245.2	Operate levels and theodolite	-	2	-	-	-	-	2	2	-	-	-	-	-	-
CO 245.3	Use different types of surveying and levelling equipments	3	3	3	-	2	2	-	2	-	-	-	2	2	-
CO 245.4	Apply the knowledge of surveying and levelling on field	3	3	3	-	2	2	2	2	-	-	-	2	3	-
CE-245 Surveying- I		2	2	2	-	1	1	2	2	-	-	-	1	1	-

OBE Philosophy of the Department

Program Articulation Matrix (Non-CBCS)

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
GE-241 Engineering Mathematics III	3	1	1	-	-	-	-	-	3	-	-	-	1	2
GE-242 Environmental Science	2		1	-	-	2	3	2	-	-	1	1	1	-
AM-243 Mechanics of Materials	3	3	2	-	-	-	-	-	-	-	-	-	1	2
CE-244 Fluid Mechanics I	1	3	2	2	1	1	-	-	-	-	-	-	2	-
CE-245 Surveying- I	2	2	2	-	1	1	2	2	-	-	-	1	1	-
CE-246 Computer Programming	2	2	2	1	-	-	-	-	-	-	-	-	2	-
AM-247 Lab: Mechanics of Materials	-	-	3	3		2	-	-	-	-	-	-	1	2
CE-248 Lab: Fluid Mechanics I	1	1	1	2	1	1	-	-	-	1	-	-	3	-
CE-249 Lab: Surveying- I	2	1	-	3	3	1	1	-	-	1	-	1	1	-
CE-250 Lab: Computer programming	3	1	2	2	-	-	-	-	-	-	-	-	2	-
CE-251Engineering Mathematics IV	1	2	1		1	-	-	-	1	-	-	-	1	2
CE-253 Fluid Mechanics II	1	3	2	2	1	1	-	-	-	-	-	-	3	-
CE-254 Survey II	2	-	-	1	2	1	-	-	1	1	-	2	2	-
CE-256 Lab: Survey II	1	2	2	2	3	1	1	1	1	-	-	-	2	-
CE-258Lab:Fluid Mechanics II	2	2	2	1	1	1	-	-	-	-	-	-	2	-
CE-259 (Open Elective) Disaster Management	2	2	-	1	-	1	-	-	2	2	2	-	2	-

OBE Philosophy of the Department

Course Articulation Matrix (CBCS)

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE 2002 Fluid Mechanics													
CE 2002.1	The student will be able to assess the properties of fluids, effect of fluid at rest and in motion	3	3	3	2	2		3		3	-	-	-
CE 2002.2	The student will be able to measure discharge using measuring devices	3	3	3	3	3	2	3	2		-	-	-
CE 2002.3	The Students will be able to analyze and design pipe network and canal	3	3	3	3	3		3	2		-	-	-
CE 2002.4	The students will be able to analyze and select the pumps and turbines as per requirements	3	3	3	3	3	2			3	3	-	-
CE 2003 Surveying-I													
CE 2003.1	Select the equipment for linear and angular measurement	2			3	3		2	2	2		2	-
CE 2003.2	Operate levels and theodolite	2	2		3	3	2	2	2	2		2	-
CE 2003.3	Use different types of surveying and levelling equipments	3	3	3	2	2	2		2	2	2		2
CE 2003.4	Apply the knowledge of surveying and levelling on field	3	3	3	2	2	2	2	2	2		1	2
AM 2004 Lab-Solid Mechanics													
AM2004.1	Determine the various and stresses modulus for the materials	3	3	1	1	1	-	-	-	-	-	-	-
AM2004.2	Calculate & Compare the hardness values for various materials.	3	3	3	3	3	2	-	-	-	-	-	-
AM2004.3	Apply the concept of impact loading and to determine impact values for various materials	3	3	3	3	3		-	-	-	-	-	-

OBE Philosophy of the Department

Program Articulation Matrix (CBCS)

CO	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS 2001	Environmental Studies												
MA 2001	Engineering Mathematics-III	1	-	-	-	-	-	-	-	1	-	-	-
AM 2001	Solid Mechanics	3	3	-	-	-	-	-	-	-	-	-	2
CE 2002	Fluid Mechanics	3	3	3	3	3	1	2	1	2	-	-	-
CE 2003	Surveying-I	3	2	2	3	3	2	2	2	2	-	-	1
AM 2004	Lab-Solid Mechanics	3	3	2	2	2	-	-	-	-	-	-	-
CE 2005	Lab-Fluid Mechanics	3	3	2	2	2	-	-	-	-	-	-	-
CE 2006	Lab-Surveying-I	3	2	1	3	3	2	-	-	2	2	1	-
AM 2007	Civil Engineering Materials	2	2	2	1	-	2	1	-	-	-	-	-
AM 2008	Structural Analysis	3	3	2	2	2	-	-	-	-	-	1	-
CE 2009	Building Planning and Design	1	2	2	2	2	1	1	1	1	1	-	-
CE 2010	Surveying-II	3	3	2	1	2	2	1	-	-	-	1	-
AM 2011	Lab -Civil Engineering Materials	2	2	3	3	-	-	-	-	1	3	1	3
CE 2012	Lab -Building Planning and Design	-	3	2	-	2	-	-	-	-	-	-	-
CE 2013	Lab -Surveying-II	1	2	2	2	2	1	1	1	1	-	-	-
CE 2014	Open Elective-I (Rural Technology)	2	1	1	-	1	-	1	-	-	-	-	-

OBE Philosophy of the Department

Attainment of Course Outcomes

An assessment process is based on gathered data to evaluate course outcomes. Data collection processes include;

Examination: It comprises of class test, teacher's assessment and end semester examination (ESE)

Laboratory work: It comprises of actual performance of practical work and internal continuous assessment and practical examination

Teacher's assessment: It is based on Assignments as a part of continuous assessment, MCQ Tests, Quizzes , Power Point Presentations etc. on latest and innovative topics related to the particular course

Seminar: It includes, review of literature from standard sources, evaluation and compilation of information, deriving conclusions, writing a report and presentation.

Project: It includes design, problem identification, problem formulation, model development, experimental investigation, data analysis, presentation etc.

OBE Philosophy of the Department

Record the attainment of Course Outcomes of all courses with respect to set attainment levels

- The courses outcomes (CO) are proposed by the respective course coordinators in compliance with Bloom's Taxonomy and are finalized by Board of Studies (BOS) and approved in Academic Council.
- COs are mapped with Program Outcomes (POs) which are based on Graduate Attributes (GAs). The mapping of COs with POs is classified as Slight (Low), Moderate (Medium) and Substantial (High) and also weighed numerically as 1, 2 and 3 respectively.
- Each theory course is evaluated on the basis of Class Test (CT), Teacher Assessment (TA) and End Semester Examination (ESE). The respective course coordinator decides the distribution of allotted marks for CT, TA and ESE for each course outcome.
- Each laboratory course is evaluated on the basis of Term work marks and Practical Examination. The respective course coordinator decides the distribution of allotted marks of term work for each expected course outcome. The ESE of laboratory course consists of one or more of the forms *viz.* conduction of practical, drawing, design, power point presentation, demonstration of model and viva-voce examination.

OBE Philosophy of the Department

- The syllabus of each theory course is generally divided in five units. The paper setter takes due care of each unit while setting the paper. All COs are covered in the question paper. The highest threshold value for 100 % achievement of COs is decided by respective course coordinator for each year. It is based on one or more of the criterion *viz.* Nature of the course, expected outcome level decided by course coordinator, grade allotment system of the examination, past record of the average marks obtained in the course code etc. For the calculation of CO attainment three ranges of marks are considered. Accordingly, lowest marks in each range are considered as threshold value of that range.
- The percentage of students scoring more than or equal to highest threshold mark are given 100% weightage.
- The percentage of students scoring less than highest threshold mark and more than or equal to lowest threshold mark are divided in to two parts and 66.67% and 33.33% weightage is assigned as per the range of marks.
- Overall attainment is calculated considering contribution of three attainment levels.

OBE Philosophy of the Department

Measuring Course Outcomes attained through End Semester Examinations (ESE)

The ESE is conducted at the end of each semester. Three sets of question papers are submitted to the Controller of Examinations (COE), out of which one set is randomly selected and the examination is conducted. The masked answer sheets are assessed centrally by the course coordinator. Subsequently the course coordinator calculates the attainment of each CO as per the procedure mentioned above. The illustrative example of calculation of CO attainment is as given below,

OBE Philosophy of the Department

CE 460: Water Resources Systems and Management (ELECTIVE-II)

Course Outcome: On successful completion of this course, students will be able to-

CO1: Solve the optimization problem in water resources engineering

CO2: Analyze the economics of water resources project

CO3: Design micro irrigation system

CO4: Design watershed structures

Assessment Tool	K1	K2	K3	K4	K5	K6
		CO1	CO2	CO3	CO4	
Class Test 20 Marks		10	05	05		
Teachers Assessment		05	10	05		
ESE Assessment		18	18	12	12	

Level	Knowledge Level	Test	Teachers Assessment	End Semester Examination
K1	Remember			
K2	Understand	10	05	18
K3	Apply	05	10	18
K4	Analyze	05	05	12
K5	Evaluate			12
K6	Create			
Total		20	20	60

CO grade wise range of percentage of marks

CO grade	Lower value of % of marks	Higher value of % of marks	CO attainment in %
1	40	54	33.33
2	55	69	66.67
3	70	100	100.00

Calculation of CO attainment as per the marks obtained by students (Cumulative Internal Examination): Total No. of Students = 26

CO grade	CO1		CO2		CO3	
	No. of Student	% CO attainment	No. of Students	% CO attainment	No. of Students	% CO attainment
1	5	19.23	1	3.85	1	3.85
2	4	15.38	4	15.38	4	15.38
3	17	65.38	21	80.77	21	80.77
Total Attainment		82.04		92.35		92.35

Calculation of CO attainment as per the marks obtained by students (End Semester Examination): Total No. of Students = 26

CO grade	CO1		CO2		CO3		CO4	
	No. of Students	% CO Attainment	No. of Students	% CO Attainment	No. of Students	% CO Attainment	No. of Students	% CO attainment
1	1	3.85	1	3.85	2	7.69	2	7.69
2	7	26.92	7	26.92	5	19.23	5	19.23
3	14	53.85	14	53.85	15	57.69	15	57.69
Total Attainment		72.88		72.88		72.92		72.92

Weightage for Continuous Evaluation = 40% and ESE = 60%

CO Attainment through Direct Method

	Contineous Evaluation	ESE	Total
CO1	82.04	72.88	76.55
CO2	92.35	72.88	80.67
CO3	92.35	72.92	80.69
CO4		72.92	72.92
CO5			
CO6			
CO7			

CO Attainment through indirect Method

	% Attainment
CO1	89.63
CO2	85.18
CO3	88.14
CO4	87.40
CO5	
CO6	
CO7	

CO attainment through Direct Method :

Course Code:		CE 460		BE201819MJ									
Course Name:		WRSM											
DIRECT METHOD													
Theory		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1			3	3		3		1		2					
CO2			3	3			2	2		2			2		
CO3			3	3		3		2		2					
CO4			3	3		3		2	2		2				
CO5															
CO6															
CO7															
Theory		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**76.55**	**0.00**	**76.55**	**76.55**	**0.00**	**76.55**	**0.00**	**25.52**	**0.00**	**51.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO2	**80.67**	**0.00**	**80.67**	**80.67**	**0.00**	**0.00**	**53.78**	**53.78**	**0.00**	**53.78**	**0.00**	**0.00**	**53.78**	**0.00**	**0.00**
CO3	**80.69**	**0.00**	**80.69**	**80.69**	**0.00**	**80.69**	**0.00**	**53.79**	**0.00**	**53.79**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO4	**72.92**	**0.00**	**72.92**	**72.92**	**0.00**	**72.92**	**0.00**	**48.62**	**48.62**	**0.00**	**48.62**	**0.00**	**0.00**	**0.00**	**0.00**
CO5	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO6	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO7	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Denominator		0	4	4	0	3	0.67	2.34	0.67	2.01	0.67	0	0.67	0	0
Average		**#DIV/0!**	**77.71**	**77.71**	**#DIV/0!**	**76.72**	**80.27**	**77.65**	**72.56**	**78.91**	**72.56**	**#DIV/0!**	**80.27**	**#DIV/0!**	**#DIV/0!**

CO attainment through Indirect Method

INDIRECT METHOD															
Course Code:			CE 460												
Course Name:			WRSM												
Theory		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1			3	3		3		1		2					
CO2			3	3			2	2		2			2		
CO3			3	3		3		2		2					
CO4			3	3		3		2	2		2				
CO5															
CO6															
CO7															
Theory		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**89.63**	**0.00**	**89.63**	**89.63**	**0.00**	**89.63**	**0.00**	**29.88**	**0.00**	**59.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO2	**85.18**	**0.00**	**85.18**	**85.18**	**0.00**	**0.00**	**56.79**	**56.79**	**0.00**	**56.79**	**0.00**	**0.00**	**56.79**	**0.00**	**0.00**
CO3	**88.14**	**0.00**	**88.14**	**88.14**	**0.00**	**88.14**	**0.00**	**58.76**	**0.00**	**58.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO4	**87.40**	**0.00**	**87.40**	**87.40**	**0.00**	**87.40**	**0.00**	**58.27**	**58.27**	**0.00**	**58.27**	**0.00**	**0.00**	**0.00**	**0.00**
CO5	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO6	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CO7	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Denominator		0	4	4	0	3	0.67	2.34	0.67	2.01	0.67	0	0.67	0	0
Average		**#DIV/0!**	**87.59**	**87.59**	**#DIV/0!**	**88.39**	**84.76**	**87.05**	**86.97**	**87.21**	**86.97**	**#DIV/0!**	**84.76**	**#DIV/0!**	**#DIV/0!**

Measuring CO attainment through Cumulative Internal Examinations (CIE)

- The assessment of theory courses is carried out through class test, teacher assessment and end semester examination. The marks for class test and teachers assessment are the part of the cumulative internal Examinations (CIE). The class test is in general conducted at the mid of the term. The teachers assessment may consist of one or more components viz. Assignment, presentation, oral examination, quizzes etc. as decided by the course coordinator of the subject at the commencement of the course.
- In case of practical courses/seminar/project etc. the internal assessment is carried out based on the term work submitted by the student. The respective course coordinator decides the distribution of allotted marks of term work for each expected course outcome. Subsequently the course coordinator calculates the attainment of each CO as per the procedure mentioned above. The illustrative example of calculation of CO attainment is as given below,

Direct and Indirect Average PO attainment of 2018-19 (B.E.) Batch (Non-CBCS)

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
FE 2015_16	79.20	76.06	76.66	77.97	78.50	89.79	93.93	79.51	86.24	79.13		85.91	92.21	65.76
SE 2016_17	80.31	79.18	80.51	85.40	81.15	82.96	85.00	87.67	84.39	84.89	90.99	88.42	80.15	64.38
TE 2017_18	84.47	87.13	85.54	85.30	86.98	84.58	85.68	84.67	82.11	83.60	85.32	86.05	88.15	84.52
BE 2018_19	81.29	83.55	83.90	84.70	83.54	85.18	85.36	87.17	84.11	87.62	88.39	86.92	84.69	
Average PO attainment	81.32	81.48	81.65	83.34	82.54	85.62	87.49	84.75	84.21	83.81	88.23	86.83	86.30	71.55

Direct Method: Average PO attainment of 2019-20 (B.E.) Batch (CBCS)

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FE 2016_17	78.09	61.43	58.51	85.60	78.50	51.52	99.50	83.96	91.64	53.81	-	55.68
SE 2017_18	74.41	76.16	74.61	75.98	72.41	72.77	71.60	68.69	72.48	68.54	76.41	79.20
TE 2018_19	74.89	77.90	78.69	75.30	78.42	81.91	84.54	84.73	81.29	81.39	84.25	80.06
BE 2019_20	87.08	86.81	86.71	86.31	85.54	86.25	85.69	86.52	85.39	84.29	83.94	89.42
Average PO attainment of a Batch from FE to BE	78.62	75.58	74.63	80.80	78.72	73.11	85.33	80.97	82.70	72.01	81.53	76.09

THANK YOU…..