

CRITERION- 7	CONTINUOUS IMPROVEMENT	MAX. MARKS: 75 CLAIMED: 75
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7.1. ACTIONS TAKEN BASED ON THE RESULTS OF EVALUATION OF EACH OF THE POs & PSOs (30)

The Department Undergraduate Committee (DUGC) peruses the attainment levels of POs and PSOs and analyses the gaps between and target and obtained attainment levels. They recommend and list the various actions that need to be taken in order to improve the obtained attainment levels and bring these close to the target levels.

POs & PSOs Attainment Levels and Actions for improvement – CAYm3 (2017-2018)

POs	Target Level (60%)	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	1.80	2.30	Target level has been achieved. However, following observations were made: Civil engineering curriculum requires the strong foundation of theoretical and practical knowledge of science and mathematics, which the students study during their entire programme, especially in their first year, but improvement in correlating the theoretical concepts with applications is required.
<p>Action 1: Visit industries that are working in core areas of civil engineering. Understand the design & construction processes to boost the technical knowledge. This also helped to understand work ethics followed in industries.</p> <p>Action 2: It is aimed that the Course Projects, final year Project Works and Camps relate the knowledge of applied and basic sciences to engineering applications in order to solve different types of complex engineering problems.</p> <p>Action 3: We inspire students to participate in technical events, other events where their basic knowledge should convert to application matching with defined level of their standards.</p> <p>Action4: Extra classes were conducted to improve fundamentals of engineering mathematics, science and engineering fundamentals for weak students.</p>			
-PO2: Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.			
PO2	1.80	2.02	Target level has been achieved. However following

Criteria 7

			<p>observations were made:</p> <ul style="list-style-type: none"> • The problem solving and analyzing skills gained through, primarily, first and second year courses helps the students to apply the principles in real time applications and understand engineering science. • Exposure of the students to real world problems is less hence students are not able to visualize and relate to academic subjects. • Research exposure to the students is less.
<p>ACTION 1: Students are encouraged to observe, their homes and surroundings to gain insight into real life engineering problems and think of possible approaches/solutions to these problems.</p> <p>ACTION 2: Gained knowledge on complex engineering problems and solution on visiting field/ industry.</p> <p>ACTION 3: Latest Literature is made available and easily accessible to the students and application oriented project works are got conducted.</p> <p>ACTION4: Access to research journal in library for the students for reading journal papers for latest research.</p> <p>ACTION5: Students are motivated to participate in science project exhibition for developing an analytical mind which can work towards problem solving.</p>			
<p>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.</p>			
PO3	1.80	1.90	<p>Target level has been achieved. Most of the projects developed by the student as course/ hobby projects/ major projects (final year) are considering the social and environmental issues.</p>
<p>ACTION1: Students are motivated to include all standard parameters and constraints according to National and International safety norms and to address environmental concerns.</p> <p>ACTION2: Courses, that inculcate the ability to 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, are included and continuously updated</p> <p>ACTION3: Students are encouraged and motivated to take up project works that include and pertain to public health and safety, and the cultural, societal, and environmental considerations.</p>			
<p>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 for complex problems.</p>			

Criteria 7

<p>PO4</p>	<p>1.80</p>	<p>1.82</p>	<p>Target level has been achieved. However following observations were made:</p> <ul style="list-style-type: none"> • Most of the project works are research based where students have to design experiments analyse and synthesise the data, produce results and derive specific conclusions. • Sometimes the studies do not end with valid conclusions. Courses required being included and syllabi updated to include and inculcate the analysis and research skills.
<p>ACTION1: Academic workshops are coming into picture to apply more knowledge in terms of conduction of experiments and analysis of results at required level.</p>			
<p>ACTION2: Courses are included and syllabi updated to include and inculcate the analysis and research skills.</p>			
<p>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.</p>			
<p>PO5</p>	<p>1.80</p>	<p>1.85</p>	<p>Target level has been achieved. It is observed that Up-gradations of tools and resources are necessary to meet the industry standards and research.</p>
<p>ACTION1: Modern labs are developed to learn/ demonstrate the use of Modern software tools like MATLAB, TransCAD, AutoCAD, CUBE, VISSIM, TRANSYT, VISSIM, SigmaPlot, ArcGIS, StadPro etc. to specify fulfilment of requirement in engineering applications in new industrial era.</p>			
<p>ACTION2: Procurement of modern and state-of-the-art equipment in the laboratories and students exposed to the applicability and use of these by making them work on these modern equipments.</p>			
<p>ACTION3: Students are taught with modern modes and methods of teaching like using LCD Projectors and with interactive and digital boards and learning in smart class rooms equipped with real time lecture webcast/broadcast facilities.</p>			
<p>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.</p>			
<p>PO6</p>	<p>1.80</p>	<p>1.81</p>	<p>Target level has been achieved. however following observation were made:</p> <ul style="list-style-type: none"> • The courses of Civil Engineering are addressing the needs of, health, safety and social concerns regarding engineering practices in real life. • The students are found to be less active as far as social activities were concerned; also they were unaware about the basic health and safety issues with engineering point of view.

Criteria 7

			<ul style="list-style-type: none"> Students need to be giving more importance to these dimensions.
<p>ACTION1: To understand the safety concerns and social aspects, students visited industry to expand their practical knowledge with the effect of improved practices in engineering.</p> <p>ACTION2: Students are encouraged to teach students, from in and outside campus, especially children who are from economically weaker sections.</p> <p>ACTION3: Encouraged students to take part in Swachh Bharat drives, Blood Donation Camps, Village visits, voluntary teaching and mentoring of downtrodden children.</p> <p>ACTION4: Awareness programs on road safety, yoga etc has been organised in college.</p>			
<p>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.</p>			
PO7	1.80	1.70	Target level has not been achieved. The issues of global and environmental awareness among the student should be improved.
<p>ACTION1: Students are encouraged to indulge in projects, in which global and environmental issues are improved, with respect to consumption of energy and utilization of renewable energy resources.</p> <p>ACTION2: Courses, that deal with environmental and sustainability issues, have been introduced with the aim of understanding the impact of professional engineering solutions in societal and environmental contexts and understanding the need for bringing about sustainability in overall development.</p> <p>ACTION3: The activity like Tree Plantation has organized to encourage the students for understanding the responsibility towards environment.</p> <p>ACTION4: Energy conservation is practised by the installation of LED Lamps and LED tube light and energy efficient fans.</p>			
<p>PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			
PO8	1.80	1.56	Target level has not been achieved. The students are doing better in improving the overall expertise in field of engineering but due to less stress on communications and ethical/ moral knowledge, there is some lagging.
<p>ACTION 1: Students are motivated and made aware about the demands of engineering profession, duties towards society & fellow human beings and importance of honesty and ethics.</p> <p>ACTION 2: Lectures and awareness/ motivational programmes are conducted. Career readiness program, corporate lectures and motivational talks are arranged to overcome the above observations.</p> <p>ACTION 3: To encourage students to Participation in Co-Curricular activities and Games and promote commitment to ethical principles and an understanding of sportsmanship and that participation is more important than winning.</p>			

Criteria 7

PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	1.80	1.74	Target level has not been achieved. The students seem ready for working both as individuals and in a team work.
<p>ACTION1: Institute has initiated Program which provides a platform to work in individual as well as a group in the fields of Engineering. It helps the students to groom the skills like leadership or as an effective team member. There are a number of societies and clubs where the students learn to work both as individuals and in a team work environment.</p> <p>ACTION2: The laboratory work of the students is conducted by framing student groups so that students learn to work in a team environment.</p> <p>ACTION3: The final year project work is conducted by first making student groups in which students with different abilities are included (decided on the basis of CGPA). These groups are allotted to faculty members as per the area-preference given by the students. This helps students to learn to work with team members of different capabilities and background.</p>			
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	1.80	1.82	Target level has been achieved. The communication, presentation and report writing skills are to be further improved among the students.
<p>ACTION1: Soft skills training is imparted to students to enhance various aspects of communication/technical talks by group discussions, presentations and new learning outcomes.</p> <p>ACTION2: Regular instructions are communicated to the students about preparing project reports and making presentations.</p> <p>ACTION3: Students that are seen to be weak in communication skills are encouraged to undergo relevant courses and are also referred to language lab for improving their communication skills.</p>			
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	1.80	1.42	Target level has not been achieved. Few courses of curriculum give knowledge of Management principle and applying managerial principles to his/her work including financial implications and to manage the project in multidisciplinary environments.
ACTION1: The awareness is created among the student regarding the management principles and managing projects. The relevant courses are revised and upgraded regularly to cater to latest techniques and trends in the area.			

Criteria 7

PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.			
PO12	1.80	1.81	Target level has been achieved. The pre final year and final year courses of the program are demonstrating the resource for contemporary issues and lifelong learning.
<p>ACTION1: Students are made to recognize the importance of life long learning through pep/ motivational talks and programmes. Using ICT facilities, such as PPTs, live demonstration of topics imparted using video lecture and real time webcast and lecture contents including new technological developmental tools and knowledge of new products, gives students and life long knowledge to be further improved upon.</p> <p>ACTION2: Existence of chapters of professional bodies/ societies like IGS, IUT etc and events under the banner of these societies gives students opportunity to have a life long learning. The students are encouraged to take membership of these societies.</p> <p>ACTION3: The students are involved in the activities of alumni association and are encouraged to take membership of Association at the time of passing out.</p>			
PSO1: Ability to demonstrate professional engineering approach, including application of principles and utilization of technical resources such as software's towards solving technical problems requiring civil engineering interventions.			
PSO1	1.80	2.16	Target level has been achieved. Different tools and designs are used to develop/ implement, test, construct and maintain the civil engineering infrastructure for society. Publish/ exhibit/ innovate through conferences, journals etc.
<p>ACTION1: Academic workshops and conferences are coming into picture to apply more knowledge in terms of conduction of experiments and analysis as required.</p> <p>ACTION2: Training programmes for use of softwares are conducted for students.</p> <p>ACTION3: Courses of lab works in which students learn to use softwares are included in the curriculum. The syllabi of these courses are regularly updated.</p> <p>ACTION4: Project works are encouraged that involve the usage of technical resources such as software's towards for solving technical problems.</p>			
PSO2: Ability to furnish and/or analyze designs and construct structural systems, produce related documents, drawings and reports, and present objective estimates of the related quantities.			
PSO2	1.80	1.95	Target level has been achieved. The courses of the program are demonstrating the resource fullness for contemporary issues. The project titles of the final year and pre-final year students are addressing the real life problems.
ACTION1: Students are motivated to take up the real life problems during their project work so that they can design, analyze and find solution which gives exposure to latest technologies.			

Criteria 7

PSO3: Ability to conduct field and laboratory investigations pertaining to civil engineering domain, and utilize modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning.			
PSO3	1.80	1.88	Target level has been achieved. To inculcate ethics, good interpersonal relationships, ability to communicate, leadership and project management.
<p>ACTION1: Career readiness program and corporate lectures are arranged to meet required expertise in field of engineering.</p> <p>ACTION2: Courses of lab works in which students learn to use modern tools are included in the curriculum. The syllabi of these courses are regularly updated.</p> <p>ACTION3: Project works are encouraged that involve the usage of modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning.</p>			

Table B.7.1(a)

POs & PSOs Attainment Levels and Actions for improvement – CAYm2 (2018-2019)

POs	Target Level (65%)	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	1.95	2.31	Target level has been achieved. Civil engineering curriculum requires the strong foundation of theoretical and practical knowledge of science and mathematics, which the students study during their entire programme, especially in their first year. Improvement in correlating the theoretical concepts with applications is required. Various actions taken during the past one year have shown good improvements.
<p>Action 1: Visit industries that are working in core areas of civil engineering. Understand the design & construction processes to boost the technical knowledge. This also helped to understand work ethics followed in industries.</p> <p>Action 2: It is aimed that the Course Projects, final year Project Works and Camps relate the knowledge of applied and basic sciences to engineering applications in order to solve different types of complex engineering problems.</p> <p>Action 3: We inspire students to participate in technical events, other events where their basic knowledge should convert to application matching with defined level of their standards.</p> <p>Action4: Extra classes were conducted to improve fundamentals of engineering mathematics, science and engineering fundamentals for weak students.</p>			
PO2: Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering			

Criteria 7

problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.			
PO2	1.95	2.04	<p>Target level has been achieved. However following observations were made:</p> <ul style="list-style-type: none"> • The problem solving and analyzing skills gained through, primarily, first and second year courses helps the students to apply the principles in real time applications and understand engineering science. This has shown an improvement due to various actions. • Exposure of the students to real world problems is less hence students are not able to visualize and relate to academic subjects. • Research exposure to the students is less.
<p>ACTION 1: Students are encouraged to observe, their homes and surroundings to gain insight into real life engineering problems and think of possible approaches/solutions to these problems.</p> <p>ACTION 2: Gained knowledge on complex engineering problems and solution on visiting field/ industry.</p> <p>ACTION 3: Latest Literature is made available and easily accessible to the students and application oriented project works are got conducted.</p> <p>ACTION4: Access to research journal in library for the students for reading journal papers for latest research.</p> <p>ACTION5: Students are motivated to participate in science project exhibition for developing an analytical mind which can work towards problem solving.</p>			
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	1.95	1.94	<p>Target level has been achieved. Most of the projects developed by the student as course/ hobby projects/ major projects (final year) are considering the social and environmental issues. This is all the more true as now the students are encouraged more to do so.</p>
<p>ACTION1: Students are motivated to include all standard parameters and constraints according to National and International safety norms and to address environmental concerns.</p> <p>ACTION2: Courses, that inculcate the ability to 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, are included and continuously updated</p> <p>ACTION3: Students are encouraged and motivated to take up project works that include and pertain to public</p>			

Criteria 7

health and safety, and the cultural, societal, and environmental considerations.			
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 for complex problems.			
PO4	1.95	1.86	Target level has not been achieved. It is observed that most of the project works are research based where students have to design experiments analyse and synthesise the data, produce results and derive specific conclusions. Courses have been included and syllabi updated to include and inculcate the analysis and research skills.
ACTION1: Academic workshops are coming into picture to apply more knowledge in terms of conduction of experiments and analysis of results at required level.			
ACTION2: Courses are included and syllabi updated to include and inculcate the analysis and research skills.			
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	1.95	1.82	Target level has not been achieved. It is observed that Up-gradations of tools and resources are necessary to meet the industry standards and research. This has been a thrust area on which action has been taken and appreciable improvement has been achieved.
ACTION1: Modern labs are developed to learn/ demonstrate the use of Modern software tools like MATLAB, TransCAD, AutoCAD, CUBE, VISSIM, TRANSYT, SigmaPlot, ArcGIS, StadPro etc. to specify fulfilment of requirement in engineering applications in new industrial era.			
ACTION2: Procurement of modern and state-of-the-art equipment in the laboratories and students exposed to the applicability and use of these by making them work on these modern equipments.			
ACTION3: Students are taught with modern modes and methods of teaching like using LCD Projectors and with interactive and digital boards and learning in smart class rooms equipped with real time lecture webcast/broadcast facilities.			
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	1.95	1.81	Target level has not been achieved. however following observation were made: <ul style="list-style-type: none"> The courses of Civil Engineering are addressing the needs of, health, safety and social concerns regarding engineering

Criteria 7

			<p>practices in real life.</p> <ul style="list-style-type: none"> • The students are found to be less active as far as social activities were concerned; also they were unaware about the basic health and safety issues with engineering point of view. • Students are now giving more importance to these dimensions.
<p>ACTION1: To understand the safety concerns and social aspects, students visited industry to expand their practical knowledge with the effect of improved practices in engineering.</p> <p>ACTION2: Students are encouraged to teach students, from in and outside campus, especially children who are from economically weaker sections.</p> <p>ACTION3: Encouraged students to take part in Swachh Bharat drives, Blood Donation Camps, Village visits, voluntary teaching and mentoring of downtrodden children.</p> <p>ACTION4: Awareness programs on road safety, yoga etc has been organised in college.</p>			
<p>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.</p>			
PO7	1.95	1.76	<p>Target level has not been achieved. The issues of global and environmental awareness among the student have improved over the last one year.</p>
<p>ACTION1: Students are encouraged to indulge in projects, in which global and environmental issues are improved, with respect to consumption of energy and utilization of renewable energy resources.</p> <p>ACTION2: Courses, that deal with environmental and sustainability issues, have been introduced with the aim of understanding the impact of professional engineering solutions in societal and environmental contexts and understanding the need for bringing about sustainability in overall development.</p> <p>ACTION3: The activity like Tree Plantation has organized to encourage the students for understanding the responsibility towards environment.</p> <p>ACTION4: Energy conservation is practised by the installation of LED Lamps and LED tube light and energy efficient fans.</p>			
<p>PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			
PO8	1.95	1.53	<p>Target level has not been achieved. The students are doing better in improving the overall expertise in field of engineering but due to less stress on communications and ethical/ moral knowledge, there is some lagging. But efforts are continuing to take various actions and achieve the target levels.</p>

Criteria 7

<p>ACTION 1: Students are motivated and made aware about the demands of engineering profession, duties towards society & fellow human beings and importance of honesty and ethics.</p> <p>ACTION 2: Lectures and awareness/ motivational programmes are conducted. Career readiness program, corporate lectures and motivational talks are arranged to overcome the above observations.</p> <p>ACTION 3: To encourage students to Participation in Co-Curricular activities and Games and promote commitment to ethical principles and an understanding of sportsmanship and that participation is more important than winning.</p>			
<p>PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</p>			
PO9	1.95	1.67	<p>Target level has not been achieved. The students seem ready for working both as individuals and in a team work. This aspect is constantly encouraged in every aspect and stage of programme.</p>
<p>ACTION1: Institute has initiated Program which provides a platform to work in individual as well as a group in the fields of Engineering. It helps the students to groom the skills like leadership or as an effective team member. There are a number of societies and clubs where the students learn to work both as individuals and in a team work environment.</p> <p>ACTION2: The laboratory work of the students is conducted by framing student groups so that students learn to work in a team environment.</p> <p>ACTION3: The final year project work is conducted by first making student groups in which students with different abilities are included (decided on the basis of CGPA). These groups are allotted to faculty members as per the area-preference given by the students. This helps students to learn to work with team members of different capabilities and background.</p>			
<p>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.</p>			
PO10	1.95	1.82	<p>Target level has not been achieved. The communication, presentation and report writing skills are to be further improved among the students. Efforts are underway. Good improvement has been made.</p>
<p>ACTION1: Soft skills training is imparted to students to enhance various aspects of communication/technical talks by group discussions, presentations and new learning outcomes.</p> <p>ACTION2: Regular instructions are communicated to the students about preparing project reports and making presentations.</p> <p>ACTION3: Students that are seen to be weak in communication skills are encouraged to undergo relevant courses and are also referred to language lab for improving their communication skills.</p>			
<p>PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and</p>			

Criteria 7

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	1.95	1.48	Target level has not been achieved. Few courses of curriculum give knowledge of management principle and applying managerial principles to his/her work including financial implications and to manage the project in multidisciplinary environments. It is being given due importance now.
<p>ACTION1: The awareness is created among the student regarding the management principles and managing projects. The relevant courses are revised and upgraded regularly to cater to latest techniques and trends in the area.</p> <p>ACTION2: Projects will be completed in collaboration with industry.</p> <p>ACTION3: The internship training is imparted to students in collaboration with industry.</p>			
PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.			
PO12	1.95	1.86	Target level has not been achieved. The pre final year and final year courses of the program are demonstrating the resource for contemporary issues and lifelong learning. Many aspects are considered to bring about LLL. This is being viewed as one of the thrust areas to improve. Efforts are on to improve the attainment level.
<p>ACTION1: Students are made to recognize the importance of life long learning through pep/ motivational talks and programmes. Using ICT facilities, such as PPTs, live demonstration of topics imparted using video lecture and real time webcast and lecture contents including new technological developmental tools and knowledge of new products, gives students and life long knowledge to be further improved upon.</p> <p>ACTION2: Existence of chapters of professional bodies/ societies like IGS, IUT etc and events under the banner of these societies gives students opportunity to have a life long learning. The students are encouraged to take membership of these societies.</p> <p>ACTION3: The students are involved in the activities of alumni association and are encouraged to take membership of Association at the time of passing out.</p>			
PSO1: Ability to demonstrate professional engineering approach, including application of principles and utilization of technical resources such as software's towards solving technical problems requiring civil engineering interventions.			
PSO1	1.95	2.16	Target level has been achieved. Different tools and designs are used to develop/ implement, test, construct and maintain the civil engineering infrastructure for society. Efforts are made to publish/ exhibit/ innovate through conferences/ journals/ workshops,

Criteria 7

			purchase state of the art equipment and softwares etc. There is improvement every passing day. Continuous efforts are being made for the same.
<p>ACTION1: Academic workshops and conferences are coming into picture to apply more knowledge in terms of conduction of experiments and analysis as required.</p> <p>ACTION2: Training programmes for use of softwares are conducted for students.</p> <p>ACTION3: Courses of lab works in which students learn to use softwares are included in the curriculum. The syllabi of these courses are regularly updated.</p> <p>ACTION4: Project works are encouraged that involve the usage of technical resources such as software's towards for solving technical problems.</p>			
<p>PSO2: Ability to furnish and/or analyze designs and construct structural systems, produce related documents, drawings and reports, and present objective estimates of the related quantities.</p>			
PSO2	1.95	2.00	<p>Target level has been achieved. The courses of the program are demonstrating the resource fullness for contemporary issues.</p> <p>The project titles of the final year and pre-final year students are addressing the real-life problems.</p> <p>The efforts to improve are producing good results.</p>
<p>ACTION1: Students are motivated to take up the real life problems during their project work so that they can design, analyze and find solution which gives exposure to latest technologies.</p>			
<p>PSO3: Ability to conduct field and laboratory investigations pertaining to civil engineering domain, and utilize modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning.</p>			
PSO3	1.95	1.90	<p>Target level has not been achieved. Efforts are made to purchase state of the art equipment and softwares for the use of students. Students are inculcated the essence and importance of using modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning. They are encouraged to take up application and research oriented projects where they have to use the modern tools and techniques. Theory and Laboratory Courses also help to learn and use the modern tools and techniques. Good progress has been made in this direction.</p>
<p>ACTION1: Career readiness program and corporate lectures are arranged to meet required expertise in field of engineering.</p> <p>ACTION2: Courses of lab works in which students learn to use modern tools are included in the curriculum. The syllabi of these courses are regularly updated.</p> <p>ACTION3: Project works are encouraged that involve the usage of modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning.</p>			

Table B.7.1 (b)

POs & PSOs Attainment Levels and Actions for improvement – CAYm1 (2019-2020)

POs	Target Level (70%)	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	2.10	2.34	<p>Target level has been achieved. However following observations were made:</p> <ul style="list-style-type: none"> • Civil engineering curriculum requires the strong foundation of theoretical and practical knowledge of science and mathematics, which the students study during their entire programme, especially in their first year. • Improvement in correlating the theoretical concepts with applications is required. • Various actions taken during the past one year have shown good improvements.
<p>Action 1: Visit industries that are working in core areas of civil engineering. Understand the design & construction processes to boost the technical knowledge. This also helped to understand work ethics followed in industries.</p> <p>Action 2: It is aimed that the Course Projects, final year Project Works and Camps relate the knowledge of applied and basic sciences to engineering applications in order to solve different types of complex engineering problems.</p> <p>Action 3: We inspire students to participate in technical events, other events where their basic knowledge should convert to application matching with defined level of their standards.</p> <p>Action4: Extra classes were conducted to improve fundamentals of engineering mathematics, science and engineering fundamentals for weak students.</p>			
PO2: Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.			
PO2	2.10	2.03	<p>Target level has not been achieved. However following observations were made:</p> <ul style="list-style-type: none"> • The problem solving and analyzing skills gained through, primarily, first and second year courses helps the students to apply the principles in real time applications and understand engineering science.

Criteria 7

			<ul style="list-style-type: none"> Exposure of the students to real world problems is less hence students are not able to visualize and relate to academic subjects. Research exposure to the students is less.
<p>ACTION 1: Students are encouraged to observe, their homes and surroundings to gain insight into real life engineering problems and think of possible approaches/solutions to these problems.</p> <p>ACTION 2: Gained knowledge on complex engineering problems and solution on visiting field/ industry.</p> <p>ACTION 3: Latest Literature is made available and easily accessible to the students and application oriented project works are got conducted.</p> <p>ACTION4: Access to research journal in library for the students for reading journal papers for latest research.</p> <p>ACTION5: Students are motivated to participate in science project exhibition for developing an analytical mind which can work towards problem solving.</p>			
<p>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.</p>			
PO3	2.10	2.05	<p>Target level has not been achieved. Most of the projects developed by the student as course/ hobby projects/ major projects (final year) are considering the social and environmental issues. This is all the more true as now the students are encouraged more to do so.</p>
<p>ACTION1: Students are motivated to include all standard parameters and constraints according to National and International safety norms and to address environmental concerns.</p> <p>ACTION2: Courses, that inculcate the ability to 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, are included and continuously updated</p> <p>ACTION3: Students are encouraged and motivated to take up project works that include and pertain to public health and safety, and the cultural, societal, and environmental considerations.</p>			
<p>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 for complex problems.</p>			
PO4	2.10	1.91	<p>Target level has not been achieved. However following observations were made:</p> <ul style="list-style-type: none"> Most of the project works are research based where students

Criteria 7

			<p>have to design experiments analyse and synthesise the data, produce results and derive specific conclusions.</p> <ul style="list-style-type: none"> • Sometimes the studies do not end with valid conclusions. Courses required being included and syllabi updated to include and inculcate the analysis and research skills.
<p>ACTION1: Academic workshops are coming into picture to apply more knowledge in terms of conduction of experiments and analysis of results at required level.</p> <p>ACTION2: Courses are included and syllabi updated to include and inculcate the analysis and research skills.</p>			
<p>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.</p>			
PO5	2.10	1.81	<p>Target level has not been achieved. It is observed that Up-gradations of tools and resources are necessary to meet the industry standards and research. This has been a thrust area on which action has been taken and appreciable improvement has been achieved.</p>
<p>ACTION1: Modern labs are developed to learn/ demonstrate the use of Modern software tools like MATLAB, TransCAD, AutoCAD, CUBE, VISSIM, TRANSYT, SigmaPlot, ArcGIS, StadPro etc. to specify fulfilment of requirement in engineering applications in new industrial era.</p> <p>ACTION2: Procurement of modern and state-of-the-art equipment in the laboratories and students exposed to the applicability and use of these by making them work on these modern equipments.</p> <p>ACTION3: Students are taught with modern modes and methods of teaching like using LCD Projectors and with interactive and digital boards and learning in smart class rooms equipped with real time lecture webcast/broadcast facilities.</p>			
<p>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.</p>			
PO6	2.10	1.81	<p>Target level has not been achieved. however following observation were made:</p> <ul style="list-style-type: none"> • The courses of Civil Engineering are addressing the needs of, health, safety and social concerns regarding engineering practices in real life. • The students are found to be less active as far as social activities were concerned; also they were unaware about the basic health and safety issues with engineering point of view. • Students need to be give more importance to these dimensions

Criteria 7

<p>ACTION1: To understand the safety concerns and social aspects, students visited industry to expand their practical knowledge with the effect of improved practices in engineering.</p> <p>ACTION2: Students are encouraged to teach students, from in and outside campus, especially children who are from economically weaker sections.</p>			
<p>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.</p>			
PO7	2.10	1.82	Target level has not been achieved. The issues of global and environmental awareness among the student have improved over the last one year.
<p>ACTION1: Students are encouraged to indulge in projects, in which global and environmental issues are improved, with respect to consumption of energy and utilization of renewable energy resources.</p> <p>ACTION2: Courses, that deal with environmental and sustainability issues, have been introduced with the aim of understanding the impact of professional engineering solutions in societal and environmental contexts and understanding the need for bringing about sustainability in overall development.</p> <p>ACTION3: The activity like Tree Plantation has organized to encourage the students for understanding the responsibility towards environment.</p> <p>ACTION4: Energy conservation is practised by the installation of LED Lamps and LED tube light and energy efficient fans.</p> <p>ACTION5:Water conservation is adopted through rain water harvesting mechanisms</p>			
<p>PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			
PO8	2.10	1.50	Target level has not been achieved. The students are doing better in improving the overall expertise in field of engineering but due to less stress on communications and ethical/ moral knowledge, there is some lagging. But efforts are continuing to take various actions and achieve the target levels.
<p>ACTION 1: Students are motivated and made aware about the demands of engineering profession, duties towards society & fellow human beings and importance of honesty and ethics.</p> <p>ACTION 2: Lectures and awareness/ motivational programmes are conducted. Career readiness program, corporate lectures and motivational talks are arranged to overcome the above observations.</p> <p>ACTION 3: To encourage students to Participation in Co-Curricular activities and Games and promote commitment to ethical principles and an understanding of sportsmanship and that participation is more important than winning.</p>			
<p>PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</p>			

Criteria 7

PO9	2.10	1.58	Target level has not been achieved. The students seem ready for working both as individuals and in a team work. This aspect is constantly encouraged in every aspect and stage of programme.
<p>ACTION1: Institute has initiated Program which provides a platform to work in individual as well as a group in the fields of Engineering. It helps the students to groom the skills like leadership or as an effective team member. There are a number of societies and clubs where the students learn to work both as individuals and in a team work environment.</p> <p>ACTION2: The laboratory work of the students is conducted by framing student groups so that students learn to work in a team environment.</p> <p>ACTION3: The final year project work is conducted by first making student groups in which students with different abilities are included (decided on the basis of CGPA). These groups are allotted to faculty members as per the area-preference given by the students. This helps students to learn to work with team members of different capabilities and background.</p>			
<p>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.</p>			
PO10	2.10	1.86	Target level has not been achieved. The communication, presentation and report writing skills are to be further improved among the students. Efforts are underway. Good improvement has been made.
<p>ACTION1: Soft skills training is imparted to students to enhance various aspects of communication/technical talks by group discussions, presentations and new learning outcomes.</p> <p>ACTION2: Regular instructions are communicated to the students about preparing project reports and making presentations.</p> <p>ACTION3: Students that are seen to be weak in communication skills are encouraged to undergo relevant courses and are also referred to language lab for improving their communication skills.</p>			
<p>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.</p>			
PO11	2.10	1.37	Target level has not been achieved. Few courses of curriculum give knowledge of Management principle and applying managerial principles to his/her work including financial implications and to manage the project in multidisciplinary environments. It is being given due importance now.
<p>ACTION1: The awareness is created among the student regarding the management principles and managing projects. The relevant courses are revised and upgraded regularly to cater to latest techniques and trends in the</p>			

Criteria 7

area.			
PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.			
PO12	2.10	1.93	Target level has not been achieved. The pre final year and final year courses of the program are demonstrating the resource for contemporary issues and lifelong learning. Many aspects are considered to bring about LLL. This is being viewed as one of the thrust areas to improve. Efforts are on to improve the attainment level.
<p>ACTION1: Students are made to recognize the importance of life long learning through pep/ motivational talks and programmes. Using ICT facilities, such as PPTs, live demonstration of topics imparted using video lecture and real time webcast and lecture contents including new technological developmental tools and knowledge of new products, gives students and life long knowledge to be further improved upon.</p> <p>ACTION2: Existence of chapters of professional bodies/ societies like IGS, IUT etc and events under the banner of these societies gives students opportunity to have a life long learning. The students are encouraged to take membership of these societies.</p> <p>ACTION3: The students are involved in the activities of alumni association and are encouraged to take membership of Association at the time of passing out.</p>			
PSO1: Ability to demonstrate professional engineering approach, including application of principles and utilization of technical resources such as software's towards solving technical problems requiring civil engineering interventions.			
PSO1	2.10	2.23	Target level has been achieved. Different tools and designs are used to develop/ implement, test, construct and maintain the civil engineering infrastructure for society. Efforts are made to publish/ exhibit/ innovate through conferences/ journals/ workshops, purchase state of the art equipment and softwares etc. There is improvement every passing day. Continuous efforts are being made for the same.
<p>ACTION1: Academic workshops and conferences are coming into picture to apply more knowledge in terms of conduction of experiments and analysis as required.</p> <p>ACTION2: Training programmes for use of softwares are conducted for students.</p> <p>ACTION3: Courses of lab works in which students learn to use softwares are included in the curriculum. The syllabi of these courses are regularly updated.</p> <p>ACTION4: Project works are encouraged that involve the usage of technical resources such as software's towards for solving technical problems.</p>			
PSO2: Ability to furnish and/or analyze designs and construct structural systems, produce related documents,			

Criteria 7

drawings and reports, and present objective estimates of the related quantities.			
PSO2	2.10	2.02	Target level has not been achieved. The courses of the program are demonstrating the resource fullness for contemporary issues. The project titles of the final year and pre-final year students are addressing the real life problems. The efforts to improve are producing good results.
ACTION1: Students are motivated to take up the real life problems during their project work so that they can design, analyze and find solution which gives exposure to latest technologies.			
PSO3: Ability to conduct field and laboratory investigations pertaining to civil engineering domain, and utilize modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning.			
PSO3	2.10	2.29	Target level has been achieved. Efforts are made to purchase state of the art equipment and softwares for the use of students. Students are inculcated the essence and importance of using modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning. They are encouraged to take up application and research oriented projects where they have to use the modern tools and techniques. Theory and Laboratory Courses also help to learn and use the modern tools and techniques. Good progress has been made in this direction.
ACTION1: Career readiness program and corporate lectures are arranged to meet required expertise in field of engineering.			
ACTION2: Courses of lab works in which students learn to use modern tools are included in the curriculum. The syllabi of these courses are regularly updated.			
ACTION3: Project works are encouraged that involve the usage of modern tools and techniques of Data Collection/ Surveying/ Analysis/ Planning.			

Table B.7.1(c)

Purchase of Equipment by Civil Engineering Department during the years 2016-2020

S. No.	Name of the Equipment	Name of the Lab.	Date of Procurement	Cost (INR)
01.	Falling Head Permeability (02 No.)	Geotech Engg. Lab.	15/02/2016	1,74000/=
02.	Constant Head Permeability (02 No.)	Geotech Engg. Lab.	15/02/2016	1,15600/=
03.	Front Loading Odometer (02 No.)	Geotech Engg. Lab.	15/02/2016	4,39100/=
04.	Vane Shear Test Set Up (02 No.)	Geotech Engg. Lab.	15/02/2016	82,800/=
05.	Static Cone Penetration	Geotech Engg. Lab.	15/02/2016	8,79,500/
06.	Infrared Moisture Meter (02 No.)	Geotech Engg. Lab.	15/02/2016	56,000/=
07.	Rapid Moisture Meter (02 No.)	Geotech Engg. Lab.	15/02/2016	46,400/=

Criteria 7

08.	Compaction Ramer light (03 No.)	Geotech Engg. Lab.	15/02/2016	11,850/=
09.	Compaction Ramer Heavy (03 No.)	Geotech Engg. Lab.	15/02/2016	12,300/=
10.	Compaction Mould 100/127 (04 No.)	Geotech Engg. Lab.	15/02/2016	17,600/=
11.	Compaction Mould dia 150/127.3mm (04 No.)	Geotech Engg. Lab.	15/02/2016	22,860/=
12.	Sampling Tubes 38/150mm (10 No.)	Geotech Engg. Lab.	15/02/2016	22,500/=
13.	Digital Liquid Limit Penetrometer (02 No.)	Geotech Engg. Lab.	15/02/2016	58,000/=
14.	Liquid Limit Device (02 No.)	Geotech Engg. Lab.	15/02/2016	68,000/=
15.	Conventional Direct Shear Apparatus (02 No.)	Geotech Engg. Lab.	15/02/2016	4,60,000/=
16.	Director Residual Shear Testing Apparatus	Geotech Engg. Lab.	15/02/2016	10,45,000/=
17.	Labotronics LT 49 ph. Meter (02 No.)	Geotech Engg. Lab.	29/04/2016	82,701/=
18.	Conventional Triaxial Test set up (02 No.)	Geotech Engg. Lab.	29/04/2016	11,90,000/=
19.	Conventional Triaxial Test set up digital	Geotech Engg. Lab.	29/04/2016	10,5000/=
20.	Digitized Motorized Sieve Shaker	Geotech Engg. Lab.	29/04/2016	1,29,500/=
21.	Proving Ring with dial gauge of two KN , 4kn,5kn,10kn, 50kn,and 100kn (02 sets each)	Geotech Engg. Lab.	09/06/2016	2,72,500/=
22.	Extensometer	Structural Engg. Lab	05/01/2016	14,490/=
23.	CTM, Automatic Machine	Structural Engg. Lab	05/01/2016	14,32,449/=
24.	DO meter	PHE Lab	30/01/2017	12000/=
25.	PH Meter	PHE Lab	30/01/2017	17,500/=
26.	TDS Meter	PHE Lab	30/01/2017	11,500/=
27.	Turbidity Meter	PHE Lab	30/01/2017	13,800/=
28.	Water Testing Kit	PHE Lab	30/01/2017	19,100/=
29.	Excel Load Measurement Plate	Pavement Engg. Lab.	11/05/2015	1,71,635/=
30.	Bump Indicator	Pavement Engg. Lab.	26/08/2015	4,17,810/=
31.	Deep freezer type	Pavement Engg. Lab.	07/10/2015	3,37,500/=
32.	Buoyancy Balance for aggregate specific gravity and water absorption test	Pavement Engg. Lab.	04/12/2017	1,25,866/=
33.	Battery Bank with UPS	Pavement Engg. Lab.	04/12/2017	1,70,666/=
34.	Compression Testing Machine 2000 KN	Pavement Engg. Lab.	04/12/2015	6,03,845/=
35.	Accelerated aggregate Polishing machine	Pavement Engg. Lab.	04/12/2015	2,93,688/=
36.	Dynamic Shear Rheometer	Pavement Engg. Lab.	25/06/2018	25,64,100/=
37.	Asphalt Mixture Performance Tester (AMPT)	Pavement Engg. Lab.	12/07/2018	60,94,700/=
38.	Universal Testing Machine (Servo	Pavement Engg. Lab.	12/07/2018	57,76,100/=

Criteria 7

	Pneumatic)			
39.	Roller Compactor, MATEST Make	Pavement Engg. Lab.	12/07/2018	22,18,400/=
40.	Bitumen Mixture Mixer	Pavement Engg. Lab.	12/07/2018	6,60,800/=
41.	Sample (Beam etc) Cutting Machine	Pavement Engg. Lab.	12/07/2018	2,15,940/=
42.	Core Cutting/Drilling Machine	Pavement Engg. Lab.	12/07/2018	3,10,715/=
43.	Air Compressor	Pavement Engg. Lab.	12/07/2018	56,640/=
44.	Shear Mixer	Pavement Engg. Lab.	08/04/2019	33,750/=
45.	Portable Skid resistance tester	Pavement Engg. Lab.	04/12/2015	2,51,733/=
46.	Traffic regarding Camera	Traffic Engg. Lab.	07/10/2015	4,50,000/=
47.	Driver Testing equipment	Traffic Engg. Lab.	04/12/2017	6,57,067/=
48.	Speed Gun (for vehicle speed)	Traffic Engg. Lab.	04/12/2017	4,66,756/=
49.	LCD Projector	Traffic Engg. Lab.	04/12/2017	1,66,115,84/=
50.	Battery bank for UPS	Traffic Engg. Lab.	04/12/2017	1,70,667/=
51.	Automatic pneumatic loop based traffic counter	Traffic Engg. Lab.	04/12/2017	4,72,000/=
52.	Theodolite	Surveying Lab	17/04/2018	17,100/=
53.	Automatic Level	Surveying Lab	18/04/2018	12980/=
54.	Hydraulic Flume	Fluid Mechanics Lab	01/02/2015	97,80,722/=
55.	Hydraulic Bank 04 No's	Fluid Mechanics lab	29/06/2017	02,72,968/=
56.	Ground Water Flow Unit	Fluid Mechanics lab	31/05/2018	2,65,650/=

Table B.7.1(d)

Purchase of Softwares by Civil Engineering Department during the years 2016-2017, 2017 -2018 and 2018 -2019

S. No.	Name of the Software	Developer	Discipline
1	Surfer V.16	Golden Software, LLC	Surveying
2	Grapher V.13	Golden Software, LLC	
3	Context Capture	Bentley	
4	GEO5	Fine Software	Geotechnical Engg.
5	SOFiSTiK	SOFiSTiK AG	
6	PLAXIS 3D	PLAXIS	
7	GeoSuite	GeoAdvanced	
8	Staad Foundation Adv.	Bentley	Transportation Engg. & Planning
9	SigmaPlot	Systat Software Inc.	
10	TRANSYT-15	TRL Software	

Criteria 7

11	OSCADY	TRL Software	
12	Open ROADS	Bentley	
13	PTV Vissim	PTV AG	
14	PTV VISWALK		
15	SoundPlan Noise Professional Package Software	SoundPLAN GmbH	
16	EMME4 software	INRO	
17	Dynameq		
18	AutoCAD 2017 (student version)	Autodesk	Multidisciplinary
19	Microstations	Bentley	
20	Lumen RT	Bentley	
21	ArcGIS	Esri	Water Resource Engg. / Environmental Engg. / GIS mapping
22	Water GEMS	Bentley	
23	Sewer GEMS		
24	IGIS	Scanpoint Geomatics Ltd.	
25	STAAD Pro +	Bentley	Structural Engg.
26	Advance Concrete		

Table B.7.1(e)

The laboratories are upgraded with latest equipment/software every year. The obsolete and non-functional equipment has been written-off and removed from the laboratories by framing individual committees which included members from other departments. The laboratories maintain proper stock registers which are verified by physical verifications conducted, again, by duly constituted committees.

7.2. ACADEMIC AUDIT AND ACTIONS TAKEN THEREOF DURING THE PERIOD OF ASSESSMENT (14)

The Department Undergraduate Committee (DUGC) which was named as Department Monitoring Committee (DMC) before and upto 2017. The prime task of the DUGC is to develop a system to improve the overall performance of the institution. It channelizes all efforts and measures of the institution towards promoting its holistic academic excellence. Further, it promotes institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices. Quality assurance initiatives of the institution are

- Course file evaluation
- Lectures/ Lab evaluation

Criteria 7

- Faculty development Program
- Review

1. Course File Evaluation

The frequency of academic auditing is once in a semester. Standard formats are given to departments for preparing course files. Course files are prepared by faculty members before and during the subject semester. Course file contents are as per recommendations mentioned in below table. The DUGC performs audit of course files i.e. verifies the contents of the course file, lesson plan, assignments, extra material, lecture notes, etc. The comments of the committee are given as feedback to the faculty member to include the recommended material. This audit ensures the quality deliverables to the students.

COURSE FILE INDEX		
SEMESTER:		NAME OF THE FACULTY:
SUBJECT:		DESIGNATION:
SUBJECT CODE:		DEPARTMENT:
S.No.	Contents/Description	Page
1	Vision, Mission of Institute	
2	Vision, Mission of Department and Program Educational Outcomes	
3	Course outcomes COs, Program Outcomes and Program Specific Outcomes	
4	Syllabus	
5	Details of Direct and Indirect Assessment used	
6	Student List	
7	Lesson Plan	
8	Time-Table	
9	Assignments	
10	Assessment of Assignment	
11	CO attainment calculation for assignment	
12	Mid-Term Examination analysis/ Question paper	
a	Result analysis of mid- term	
b	CO-PO attainment of mid term	
13	Result Analysis of End Term Examination	
14	Consolidated Result analysis (Mid-term and End Term exam)	

Criteria 7

15	Over all CO attainment	
16	Course Closure Report	
17	Attendance sheets	
18	Solutions to Question Papers	

Table B.7.2a

Department of Civil Engineering, NIT Srinagar-190006
Departmental Audit
Check list for evaluation of Course File

Date.....

S. No.	Content	Attached in File		Remark
		Yes	No	
1	Vision, Mission of Institute	✓		
2	Vision, Mission of Department and Program Educational Outcomes	✓		
3	Course outcomes COs, Program Outcomes and Program Specific Outcomes	✓		
4	Syllabus	✓		
5	Details of Direct and Indirect Assessment used	✓		
6	Student List	✓		
7	Lesson Plan	✓		
8	Time-Table	✓		
9	Assignments	✓		
10	Assessment of Assignment		✗	
11	CO attainment calculation for assignment	✓		
12	Mid-Term Examination analysis/ Question paper	✓		
a	Result analysis of mid- term	✓		
b	CO-PO attainment of midterm/end term	✓		
13	Result Analysis of End Term Examination	✓		
14	Consolidated Result analysis (Mid-term and End Term exam)	✓		
15	Over all CO attainment	✓		
16	Course Closure Report		✗	
17	Attendance sheets	✓		
18	Solutions to Question Papers		✗	

DUGC Member

1..... 2..... 3.....

4..... 5..... 6.....

Figure B.7.2a Screenshot of Check-List for Evaluation of Course File Report

2. Lectures/ Lab Evaluation

The Department Undergraduate Committee (DUGC) which was named as Department Monitoring Committee (DMC) before and upto 2017, during their random observation of the lectures/lab, check delivery of course material as per the lesson plan, teaching aids used, communication skill and classroom management etc. parameters to ensure the teaching methods of benchmarked standards are being used throughout the institute. Feedback is communicated to the faculty members.

Faculty Feedback Form

Civil Engineering Department National Institute of Technology, Srinagar Student Feedback Form		
Name(optional):		Year Passed out/studying:
Email(optional):		Phone(optional):
Assessment of Knowledge, Skills, Abilities and Attributes acquired by Students at NIT Srinagar		
Please rate each of the following in terms how well NIT Srinagar inculcated them in you so far, by writing the appropriate number against each by Using Scale (1 to 3) . 1= Satisfactory; 2=Good; 3=Excellent		
S.No.	Attribute	Rating
1	Ability to acquire and apply knowledge of basic mathematics, science and engineering fundamentals.	
2	Ability to apply analytical skills to engineering problems.	
3	Ability to conduct experiments, analyze data, and present results.	
4	Ability to conduct independent research for information required in engineering problem Solving.	
5	Ability to use modern technologies and tools necessary for practice.	
6	Ability to understand global issues related to engineering.	
7	Understand the importance of ethical and professional responsibility.	
8	An ability to function on multi-disciplinary teams.	
9	An ability to communicate effectively.	
10	Recognition of the need for, and an ability to engage in life-long learning.	

Criteria 7

	Suggestions for improvement:	
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Table B.7.2b

The lab is inspected by the DUGC committee member. The Screenshot of Check-List for Lab Inspection is presented in Figure.

Department of Civil Engineering, NIT Srinagar-190006
Check list for Laboratory Inspection

Name of Lab: Pavement Engg. Lab / Highway material testing lab. Date: _____

Sr. No	Details	Availability		Remarks	Instructions Given to Lab Assistant
		Yes	No		
1	Course Objectives (CO)	✓			
2	Program Specific Objectives (PSO)	✓			
3	Do's & Don'ts	✓			
4	Vision & Mission of the Department	✓			
5	Program educational Objectives	✓			
6	List of Experiments (Display Board)	✓			
7	List of Equipment's in Lab	✓			
8	First Aid Kit/Box	✓			
9	Fire Safety Measures & Instructions	✓			
10	Fire Extinguisher Mounted	✓			
11	Laboratory Practical Manual	✓			
12	Log Book (Entry/exit book)		x		
13	Lab Attendance of Students (2017-18, 2018-19, 2019-20)	✓			
14	Cleaning of Labs	✓			
15	Labelling on Instruments	✓			
16	Danger Sign (Near Electric Board)	✓			
17	Practical Time Table	✓			
18	Incorrect or missing room number or door sign.	✓			
19	Structural/Construction/Electric fitting Defects/ Damage	✓			

DUGC Member

1..... 2..... 3.....

4..... 5..... 6.....

Figure B.7.2b Screenshot of Check-List for Lab Inspection

3. Faculty Development Program (FDP)

A faculty member has to undergo faculty development program (FDP) to improve the communication skills and to improve the methods of teaching-learning. The FDPs are carried out at the institute level itself by various departments. The technical component in the teaching are improvised with the help of faculty members attending workshops, expert lectures etc. either organized at our institute or at other institutes.

4. Review

Review of the faculty member is taken at the end of the semester again to compare the levels – what was at the beginning and after the various feedbacks and training received. The following actions taken by the faculty members after review process:

1. Faculty members incorporate changes/improvements suggested by the DUGC/DMC, if any gaps are found, to ensure quality deliverables.
2. 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 to cover the syllabus.
3. Regular analysis of the results of internal assessment examination of all subjects is done and concerned faculty members are guided to take necessary actions. Remedial classes are scheduled in reference to academic progress of the student.
4. The academic observation is carried out considering audit of course files, randomized checks and observations and feedback from students.

7.3. IMPROVEMENT IN PLACEMENT, HIGHER STUDIES AND ENTREPRENEURSHIP (9)

Item	CAYm1 (2019-20) 2020 Pass- out Batch	CAYm2 (2018-19) 2019 Pass- out Batch	CAYm3 (2017-18) 2018 Pass- out Batch
Total No. of Final Year Students (N)	75	109	118
No. of Students Placed in Companies or Government Sector (X)	39	45	46
No. of Students admitted to higher studies with valid qualifying scores (GATE or Equivalent State or National Level Tests, GRE, GMAT, etc.) (Y)	8	17	17
No. of students turned entrepreneur in engineering/technology (Z)	0	0	0
X+Y+Z	47	62	63
Placement Index: $(X + Y + Z)/N$	0.63	0.57	0.55

Table B.7.3

Criteria 7

The improvement of the students has been depicted in Fig.

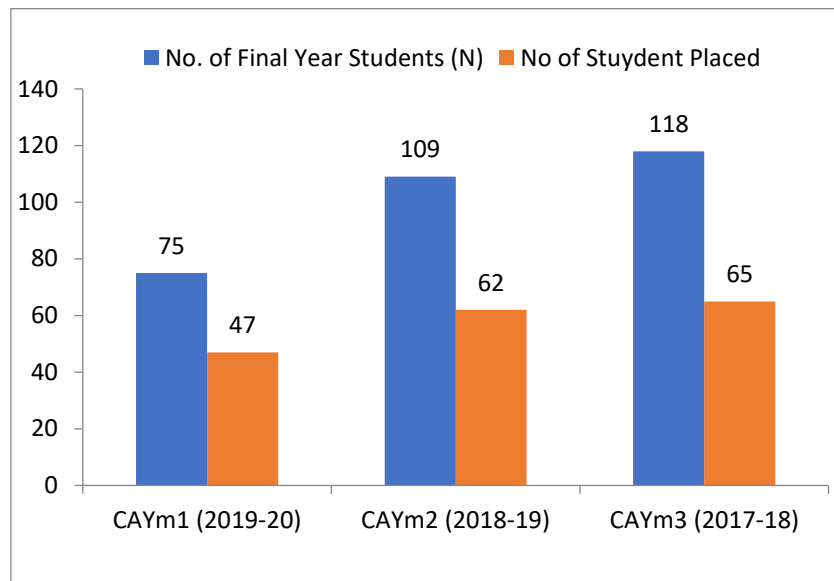


Figure B.7.3

7.4. IMPROVEMENT IN THE QUALITY OF STUDENTS ADMITTED TO THE PROGRAM (17)

Item		CAYm1 2020 Batch Admission (2019-20)	CAY m2 2019 Batch Admission (2018-19)	CAYm3 2018 Batch Admission (2017-18)
Joint Entrance Examination, main (JEE main)	No. of Students admitted	173	157	128
	Opening Rank	OP-23753 OBC-50109 SC-134964 ST-111706 EWS-63524	OP-17373 OBC-38035 SC-128811 ST-81943 EWS-43514	OP-13909 OBC-45293 SC-84251 ST-96423
	Closing Rank	OP-213872 OBC-658277 SC-376433 ST-291806 EWS-149807	OP-634701 OBC-968446 SC-476413 ST-172162 EWS-280396	OP-296769 OBC-605526 SC-603553 ST-376324

Table B.7.4