



## Yearly Status Report - 2019-2020

### Part A

#### Data of the Institution

<b>1. Name of the Institution</b>		THIAGARAJAR COLLEGE OF ENGINEERING
Name of the head of the Institution		Dr. M.Palaninatha Raja
Designation		Principal (in-charge)
Does the Institution function from own campus		Yes
Phone no/Alternate Phone no.		04522482240
Mobile no.		9894094155
Registered Email		principal@tce.edu
Alternate Email		pnatharaja@tce.edu
Address		Thiagarajar College of Engineering
City/Town		MADURAI
State/UT		Tamil Nadu
Pincode		625015
<b>2. Institutional Status</b>		

Autonomous Status (Provide date of Conformant of Autonomous Status)	01-Jun-1987
Type of Institution	Co-education
Location	Urban
Financial Status	Self financed and grant-in-aid
Name of the IQAC co-ordinator/Director	Dr.S.J. Thiruvengadam
Phone no/Alternate Phone no.	04522482240
Mobile no.	9865079402
Registered Email	deanacad@tce.edu
Alternate Email	sjtece@tce.edu

### 3. Website Address

Web-link of the AQAR: (Previous Academic Year)	<a href="https://www.tce.edu">https://www.tce.edu</a>
<b>4. Whether Academic Calendar prepared during the year</b>	Yes
if yes,whether it is uploaded in the institutional website: Weblink :	<a href="https://www.tce.edu">https://www.tce.edu</a>

### 5. Accrediation Details

Cycle	Grade	CGPA	Year of Accrediation	Validity	
				Period From	Period To
1	A+	3.47	2019	29-Mar-2019	28-Mar-2024

<b>6. Date of Establishment of IQAC</b>	01-Aug-2018
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### 7. Internal Quality Assurance System

Quality initiatives by IQAC during the year for promoting quality culture		
Item /Title of the quality initiative by IQAC	Date & Duration	Number of participants/ beneficiaries
Preparation for Academic Administrative Audit	01-Nov-2019 10	30
<a href="#">View File</a>		

**8. Provide the list of Special Status conferred by Central/ State Government-UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.**

Institution/Department/Faculty	Scheme	Funding Agency	Year of award with duration	Amount
Thiagarajar College of Engineering	TEQIP III	NPIU	2017 1655	83000000
Thiagarajar College of Engineering	Technology Business Incubator (TBI)	DSTNSTEDB	2014 2885	50000000
Thiagarajar College of Engineering	EDI	Govt.of Tamil Nadu	2019 1065	200000
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**9. Whether composition of IQAC as per latest NAAC guidelines:**

Yes

Upload latest notification of formation of IQAC

[View File](#)

**10. Number of IQAC meetings held during the year :**

3

The minutes of IQAC meeting and compliances to the decisions have been uploaded on the institutional website

Yes

Upload the minutes of meeting and action taken report

[View File](#)

**11. Whether IQAC received funding from any of the funding agency to support its activities during the year?**

No

**12. Significant contributions made by IQAC during the current year(maximum five bullets)**

Significant contributions made by IQAC during the academic year 2019 2020 are as follows . Participation of National Institution Ranking Framework and got 64th Rank in Engineering Category 2. Preparation of Standard Operating Procedures (SOP) for Institutional Activities 3. Course File Audit 4. Dissemination of the details on the Automation of Course Outcome and Programme Outcome. 5. Promoting Engineering Education Research

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**13. Plan of action chalked out by the IQAC in the beginning of the academic year towards Quality Enhancement and outcome achieved by the end of the academic year**

Plan of Action	Achievements/Outcomes
Academic and Administrative Audit (AAA)	Clarity in the administrative and academic process
Course File Audit	Fine-tuning in the curriculum design, content delivery and assessment. Improvement in the attainment of course outcomes, programme outcomes and programme specific outcomes
Promoting Engineering Education Research	Increase in number of quality publications in reputed conferences and Journals
In-House Faculty Development Workshops by Academic Process Team	Effective Implementation of CDIO Framework and Improvement in student engagement in CDIO courses
Participation in NIRF Ranking	Obtained Sixty Fourth rank in Engineering Category
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<b>14. Whether AQAR was placed before statutory body ?</b>	Yes
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Name of Statutory Body	Meeting Date
Academic Council	03-Jul-2021

<b>15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?</b>	No
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<b>16. Whether institutional data submitted to AISHE:</b>	Yes
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Year of Submission	2019
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Date of Submission	05-Jun-2019
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<b>17. Does the Institution have Management Information System ?</b>	Yes
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If yes, give a brief description and a list of modules currently operational (maximum 500 words)	Thiagarajar College of Engineering (TCE) has a well established state of the art Information Technology (IT) infrastructure and facilities for providing research, academic and consultancy support. The IT services are provided on 24/7 support for anytime anywhere access to knowledge and learning resources. The Data center was established in 2011 with an area of around 645 sq ft for consolidating and
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managing network operations from various servers like App servers, Data Base (DB) servers and computer clusters into a single facility. Data center hosts all the servers to ease the provisioning and maintenance of the servers and Apps to the entire campus and back bone network running throughout the campus. It houses about 8 racks mounted with servers and computer cluster nodes for hosting a variety of services like • TCE Website (Official Website of college) • TCENet (Intranet Portal for the college) • TCE Attendance Monitoring System (Staff Attendance Maintenance) • Video Lecture streaming (stream Video Lectures of college ) • TCE Cloud (Cloud service of college for Research purpose) • TCE Moodle (Learning Management System) • Automation for Academics Activities (Course Registration, Attendance/Assessment Reports, Student Feedback, Course Outcome/Programme Outcome attainment calculation and Reports) Various other IT services and application portals supported by the Data center are • Student Admission (Automation of Student Admissions) • TCE Asset Management System (Asset Tracking System) • TCE Inventory Control (TCE Stock Maintenance System) • TCE Exam Process Automation (Automation of Examination Process ) • Maintenance portal (facilities and request tracking management) • Faculty profile updates (Automation of Faculty Achievements Update System) These were introduced to automate the offline processes and to cater the academic and administrative processes. Biometric based Staff Attendance monitoring system has been implemented.

## Part B

### CRITERION I – CURRICULAR ASPECTS

#### 1.1 – Curriculum Design and Development

##### 1.1.1 – Programmes for which syllabus revision was carried out during the Academic year

Name of Programme	Programme Code	Programme Specialization	Date of Revision
BE	CE	Civil Engineering	15/06/2019
<a href="#">View File</a>			

##### 1.1.2 – Programmes/ courses focussed on employability/ entrepreneurship/ skill development during the Academic year

Programme with Code	Programme Specialization	Date of Introduction	Course with Code	Date of Introduction
BE	CE	15/06/2019	18CE310 Differential Equations and Fourier Series	15/06/2019
<a href="#">View File</a>				

## 1.2 – Academic Flexibility

1.2.1 – New programmes/courses introduced during the Academic year

Programme/Course	Programme Specialization	Dates of Introduction
MSc	Data Science	08/07/2019
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1.2.2 – Programmes in which Choice Based Credit System (CBCS)/Elective Course System implemented at the College level during the Academic year.

Name of programmes adopting CBCS	Programme Specialization	Date of implementation of CBCS/Elective Course System
MSc	Data Science	05/01/2019

## 1.3 – Curriculum Enrichment

1.3.1 – Value-added courses imparting transferable and life skills offered during the year

Value Added Courses	Date of Introduction	Number of Students Enrolled
18PGAA0 Professional Authoring	15/06/2019	164
<a href="#">View File</a>		

1.3.2 – Field Projects / Internships under taken during the year

Project/Programme Title	Programme Specialization	No. of students enrolled for Field Projects / Internships
BE	Mechanical Engineering	323
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## 1.4 – Feedback System

1.4.1 – Whether structured feedback received from all the stakeholders.

Students	Yes
Teachers	Yes
Employers	Yes
Alumni	Yes
Parents	Yes

1.4.2 – How the feedback obtained is being analyzed and utilized for overall development of the institution? (maximum 500 words)

Feedback Obtained
Feedback is collected from students, faculty, alumni, employers and parents about the course/curriculum. At the end of each semester, all the undergraduate and postgraduate students provide feedback about all the enrolled courses using 'Course Exit Survey' on the Course content, course outcomes, content delivery and assessment on a Likert scale of 1 to 5 (Strongly

Disagree/Disagree/Neutral/Agree/Strongly Agree). Similar to this process, faculty provides feedback about the courses they have taught during the semester. The feedback questionnaire includes challenging topics, topics to be modified/added/removed from the course along with the reasons. At the end of the programme, feedback from all graduating students is obtained using 'Program Exit Survey'. Suggestions about the revision of course syllabus obtained from the alumni during their visits to the institution and during several formal and informal meetings outside the institution. The feedback from the employers is taken during recruitment, guest lectures, their visits to the institution and intern periods of students in the industries. The feedback from parents is collected during Parent - Teacher meeting. All the suggestions/feedback are recorded periodically and the faculty members make appropriate changes to the syllabus as follows: To decide on the type of changes required in the curricular components or syllabi, feedback from Course Instructor, report on Assessment of Course Outcomes, Course Exit Survey, feedback from industry experts are taken into account for discussion in the Faculty meeting. In the meeting, the following decisions are considered: • If support courses are needed, relevant domain based company is identified. This is followed by identification of corresponding industrial experts and design of industry supported courses. The course is designed as per Special Interest Group (SIG) based course design process. • If changes in Course Outcomes are required, decide whether change in existing syllabus is required. • If required change the existing syllabus, change the existing syllabus or identify a new course relevant for new course outcome and design the course as per SIG based course design process. • If changes in Assessment Pattern are required, design the Bloom's taxonomy based assessment pattern. • If changes in course content are required, identify the concepts to be taught and change the content. The feedback collected from students, faculty, alumni, employers and parents and action taken is analyzed by the academic process team in the department and presented in the faculty meeting for the revision of course/curriculum. A report of this feedback is taken into consideration while revising the syllabus. Their suggestions and requirements are highlighted in the college level meetings and department meetings to make appropriate changes to the syllabus. Then, the Board of Studies comprising industry experts, alumni and academic experts from different organizations, validates the suggestions of syllabus revision and takes measures like modifying the syllabi, introducing new theory and practical courses. The revised syllabus approved by the Board of Studies is presented in the Academic Council for approval and implementation.

## CRITERION II – TEACHING- LEARNING AND EVALUATION

### 2.1 – Student Enrolment and Profile

#### 2.1.1 – Demand Ratio during the year

Name of the Programme	Programme Specialization	Number of seats available	Number of Application received	Students Enrolled
BTech	Information Technology	120	Nil	122

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### 2.2 – Catering to Student Diversity

#### 2.2.1 – Student - Full time teacher ratio (current year data)

Year	Number of students enrolled in the institution (UG)	Number of students enrolled in the institution (PG)	Number of fulltime teachers available in the institution teaching only UG courses	Number of fulltime teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses

2019	3823	492	169	45	18
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## 2.3 – Teaching - Learning Process

2.3.1 – Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)

Number of Teachers on Roll	Number of teachers using ICT (LMS, e-Resources)	ICT Tools and resources available	Number of ICT enabled Classrooms	Number of smart classrooms	E-resources and techniques used
232	232	10	92	7	7
<a href="#">View File of ICT Tools and resources</a>					
<a href="#">View File of E-resources and techniques used</a>					

2.3.2 – Students mentoring system available in the institution? Give details. (maximum 500 words)

At our institute, individual attention is given to each student through Tutor - Ward system, career guidance cell and alumni interactions. (a) Tutor Ward System To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department attaches a certain number of students (Maximum 25) to a faculty member in the Department. He /she shall function as Faculty Mentor/Tutor/proctor for these students throughout their period of study. The faculty mentor shall • Advise the students in registering regular courses in each semester and reappearance registering of courses (if any) • Monitor their attendance, academic progress and discipline of the students • Counsel periodically or during the Faculty Mentor meeting scheduled in the class time table. • Inform the students about the various facilities and activities available to enhance the student's curricular and co-curricular activities. • If necessary, the faculty mentor may also discuss with or inform the parents about the progress of the students through Head of the Department or in Parent –Teacher meeting. (b) Career Guidance Cell • The Career Guidance Cell organizes career opportunity programmes/workshops with the help of alumni of the institute to encourage the students • The Career Guidance Cell organizes Skill development programmes through placement section to build the confidence among the students by improving communication skill and problem solving abilities (c) Alumni Interactions • Every academic year, Alumni Association organizes camps on professional development for mentoring first undergraduate students • Alumni Mentorship programs like “Leadership in action” program are organized for academically good students

Number of students enrolled in the institution	Number of fulltime teachers	Mentor : Mentee Ratio
4315	232	1:19

## 2.4 – Teacher Profile and Quality

2.4.1 – Number of full time teachers appointed during the year

No. of sanctioned positions	No. of filled positions	Vacant positions	Positions filled during the current year	No. of faculty with Ph.D
232	10	Nil	10	150

2.4.2 – Honours and recognition received by teachers (received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year )

Year of Award	Name of full time teachers receiving awards from state level, national level, international level	Designation	Name of the award, fellowship, received from Government or recognized bodies
2019	Dr .R.Vasudevan	Dean	Award for Plastic waste management from Border Road Organization
2019	Dr .S.J.Thrivuengadam	Dean	Institutional Leadership Award,



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**2.5 – Evaluation Process and Reforms**

2.5.1 – Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

Programme Name	Programme Code	Semester/ year	Last date of the last semester-end/ year-end examination	Date of declaration of results of semester-end/ year- end examination
BE	CE, ME, EE, EC, CS, MT	EVEN/2019-20	30/09/2020	05/10/2020
BE	CE, ME, EE, EC, CS, MT	ODD/2019-20	07/12/2019	27/12/2019

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2.5.2 – Average percentage of Student complaints/grievances about evaluation against total number appeared in the examinations during the year

Number of complaints or grievances about evaluation	Total number of students appeared in the examination	Percentage
Null	4315	0

**2.6 – Student Performance and Learning Outcomes**

2.6.1 – Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)

<https://www.tce.edu/academics/courses-offered>

2.6.2 – Pass percentage of students

Programme Code	Programme Name	Programme Specialization	Number of students appeared in the final year examination	Number of students passed in final year examination	Pass Percentage
CE	BE	Civil Engineering	140	129	92.14

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**2.7 – Student Satisfaction Survey**

2.7.1 – Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

[https://www.tce.edu/academics/student\\_satisfaction\\_survey](https://www.tce.edu/academics/student_satisfaction_survey)

**CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION****3.1 – Promotion of Research and Facilities**

3.1.1 – The institution provides seed money to its teachers for research

Yes

Name of the teacher getting seed money

Dr.P.Venkatesh

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3.1.2 – Teachers awarded National/International fellowship for advanced studies/ research during the year

Type	Name of the teacher awarded the fellowship	Name of the award	Date of award	Awarding agency
National	S.Kanthamani	Teachers Association for Research Excellence (TARE)	25/12/2019	SERB
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3.2 – Resource Mobilization for Research

3.2.1 – Research funds sanctioned and received from various agencies, industry and other organisations

Nature of the Project	Duration	Name of the funding agency	Total grant sanctioned	Amount received during the year
Major Projects	730	ISHRAE	18	11
<a href="#">View File</a>				

3.2.2 – Number of ongoing research projects per teacher funded by government and non-government agencies during the years

29

3.3 – Innovation Ecosystem

3.3.1 – Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

Title of workshop/seminar	Name of the Dept.	Date
A five day certificate Course on Effective Patent Search and Drafting - PAT DRAFT - 2019(25/11/2019 to 29/11/2019)	IPR cell	25/11/2019
Patent Awareness Program	IPR Cell	17/02/2020
Faculty interaction about research projects and patents	ECE	14/08/2019
Patentability	ECE	09/10/2019
Car Design	MECH	25/01/2020
Industry 4.0 based PLC HMI SCADA Programming and Interfacing	MECHT	16/12/2019
Communication system design using NI SDR USRP Platform	ECE	16/12/2019

Industrial Robot programming for collaborative applications	MECHT	11/12/2019
Asian Power Quality Initiative (APQI) Sponsored one day workshop on Power Quality Application Note for HT Industries jointly supported by Southern India Mills Association (SIMA)	EEE	28/09/2019
Cadence EDA Workshop: From Schematic to GDSII File Generation	ECE	12/10/2019
Inaugural of T.S.Srinivasan Centre for Automotive Research	MECH	29/11/2019
TNSI Awareness Camp	EDC Cell	08/01/2020
Honeywell Product Roadshow	Industry Institute Interface Cell	26/02/2020
TCE-HBTU Twinning Programme 36 Hours Hackathon	IT	27/01/2020
Student E-Leader Workshop	EDC Cell	08/01/2020
Ideation Camp	EDC Cell	30/01/2020
Boot Camp	EDC Cell	06/01/2020
Skill Development course on CAD,CAM	MECH	31/01/2020
36 Hours TCE-HBTU -Hackathon	IT	27/01/2020
8 hours appathon	IT	11/01/2020
IoT Challenge 2020	IT	15/03/2020
UX Design tools for project development	IT	21/12/2019
Seminar on Deltacup Contest Initiatives discussions	Industry Institute Interface Cell	29/01/2020
Train the Trainers Programme under TNIIC	EDC Cell	22/07/2019
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### 3.3.2 – Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of Awardee	Awarding Agency	Date of award	Category
Plastic waste management	Dr.R.Vasudevan	Border Road Organization	20/01/2020	Acheivers award 2019
<a href="#">View File</a>				

### 3.3.3 – No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Center	Name	Sponsored By	Name of the Start-up	Nature of Start-up	Date of Commencement
TCE-TBI	Thiagarajar College of Engineering-Technology Business Incubator	NST EDP, DST, Govt.of India	I-50 solutions Pvt Limited	Design Solutions for Aviation sector	24/10/2019
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### 3.4 – Research Publications and Awards

#### 3.4.1 – Ph. Ds awarded during the year

Name of the Department	Number of PhD's Awarded
Civil Engineering	2
Mechanical Engineering	4
Electrical and Electronics Engineering	15
Electronics and Communication Engineering	12
Computer Science Engineering	10
Information Technology	2
Mechatronics	1
Chemistry	1
Computer Applications	1

#### 3.4.2 – Research Publications in the Journals notified on UGC website during the year

Type	Department	Number of Publication	Average Impact Factor (if any)
International	Mechanical Engineering	17	3.7
<a href="#">View File</a>			

#### 3.4.3 – Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

Department	Number of Publication
Electronics and Communication Engineering	54
<a href="#">View File</a>	

#### 3.4.4 – Patents published/awarded during the year

Patent Details	Patent status	Patent Number	Date of Award
Design Of Minuscule Dual Band Printed Monopole Antenna	Published	201841038707	17/04/2020
<a href="#">View File</a>			

3.4.5 – Bibliometrics of the publications during the last academic year based on average citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index

Title of the Paper	Name of Author	Title of journal	Year of publication	Citation Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self citation
A comprehensive review on latent heat and thermal conductivity of nanoparticle dispersed phase change material for low-temperature applications	Eanest Jebasingh B., Valan Arasu A.	Energy Storage Materials	2020	59	Department of Mechanical Engineering Thiagarajar College of Engineering, Madurai,	57
<a href="#">View File</a>						

3.4.6 – h-Index of the Institutional Publications during the year. (based on Scopus/ Web of science)

Title of the Paper	Name of Author	Title of journal	Year of publication	h-index	Number of citations excluding self citation	Institutional affiliation as mentioned in the publication
A comprehensive review on latent heat and thermal conductivity of nanoparticle dispersed phase change material for low-temperature applications	Eanest Jebasingh B., Valan Arasu A.	Energy Storage Materials	2020	24	57	Department of Mechanical Engineering Thiagarajar College of Engineering, Madurai
<a href="#">View File</a>						

3.4.7 – Faculty participation in Seminars/Conferences and Symposia during the year

Number of Faculty	International	National	State	Local
Attended/Seminars/Workshops	76	157	23	62
Presented	76	27	2	Nil

papers				
Resource persons	3	16	17	18
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### 3.5 – Consultancy

#### 3.5.1 – Revenue generated from Consultancy during the year

Name of the Consultan(s) department	Name of consultancy project	Consulting/Sponsoring Agency	Revenue generated (amount in rupees)
Electrical Electronics Engineering	Detailed Energy Audit Study	Madurai Kamaraj University, Madurai	88500
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#### 3.5.2 – Revenue generated from Corporate Training by the institution during the year

Name of the Consultan(s) department	Title of the programme	Agency seeking / training	Revenue generated (amount in rupees)	Number of trainees
Electrical and Electronics Engineering	To identify the Energy Saving Proposals/Projects	Madurai Kmaraj university	10000	30
<a href="#">View File</a>				

### 3.6 – Extension Activities

#### 3.6.1 – Number of extension and outreach programmes conducted in collaboration with industry, community and Non- Government Organisations through NSS/NCC/Red cross/Youth Red Cross (YRC) etc., during the year

Title of the activities	Organising unit/agency/ collaborating agency	Number of teachers participated in such activities	Number of students participated in such activities
Basic Life Support Program	YRC Meenakshi Mission Hospital Madurai	1	60
Blood Donation Camp	NSS , Youth Red Cross Govt. Rajaji Hospital Madurai	2	236
webinar on plastic waste management	NSS, ENVIS MINISTRY OF TOURISM	2	100
Ralley on plastic waste management	NSS, ENVIS MINISTRY OF TOURISM	2	100
cleaning plastic waste around thiruparankundarm	NSS, ENVIS MINISTRY OF TOURISM	2	100
Swachh bharat	Prime Minister Narendra Modi linked to the Swachh bharat Abhiyan	2	200
Awareness on open defecation	TCE	2	200

Tree plantation	TCE	2	200
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3.6.2 – Awards and recognition received for extension activities from Government and other recognized bodies during the year

Name of the activity	Award/Recognition	Awarding Bodies	Number of students Benefited
National level Camp	Gold and Silver Medals	CATC cum TSC group-1	200
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3.6.3 – Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

Name of the scheme	Organising unit/Agency/collaborating agency	Name of the activity	Number of teachers participated in such activities	Number of students participated in such activities
Swachh bharat	TCE	Jal Shakthi Abhiyan	2	200
Mega Swachta pakhwada	TCE	Plogging	2	200
Jal Shakthi Abhiyan	TCE	Afforestation, Water conservation	2	200
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### 3.7 – Collaborations

3.7.1 – Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of activity	Participant	Source of financial support	Duration
Research Paper Collaboration	Rajkumar S	Thiagarajar College of Engineering	10
<a href="#">View File</a>			

3.7.2 – Linkages with institutions/industries for internship, on-the- job training, project work, sharing of research facilities etc. during the year

Nature of linkage	Title of the linkage	Name of the partnering institution/ industry /research lab with contact details	Duration From	Duration To	Participant
Intern	Industry attachment Program	Alfa TKG India Pvt Ltd	23/12/2019	15/04/2020	5
<a href="#">View File</a>					

3.7.3 – MoUs signed with institutions of national, international importance, other institutions, industries, corporate houses etc. during the year

Organisation	Date of MoU signed	Purpose/Activities	Number of students/teachers
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			participated under MoUs
NORD Drive Systems Pvt Ltd	10/01/2020	Lab Set up and student training	100
Experian Services India Private Limited, Singapore	20/01/2020	Student Internship and Joint study on Drone Image Processing	20
Toyota Kirloskar Auto Parts Pvt Ltd	01/08/2019	Lab Set up and student training	50
Great Innovus Solutions Pvt Ltd	06/09/2019	Student Internship, Projects and Placement	50
Kewaunee Lab India Pvt Ltd	01/10/2019	Student Internship, Projects and Placement	50
UI Path	15/11/2019	Student Training, Academic Level Interactions like elective course	60
Delta Electronics India Pvt Ltd	19/11/2019	Inplant Training and Joint Research, Course curriculum	100
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## CRITERION IV – INFRASTRUCTURE AND LEARNING RESOURCES

### 4.1 – Physical Facilities

4.1.1 – Budget allocation, excluding salary for infrastructure augmentation during the year

Budget allocated for infrastructure augmentation	Budget utilized for infrastructure development
398.67	282

4.1.2 – Details of augmentation in infrastructure facilities during the year

Facilities	Existing or Newly Added
Classrooms with Wi-Fi OR LAN	Existing
Number of important equipments purchased (Greater than 1-0 lakh) during the current year	Newly Added
Value of the equipment purchased during the year (rs. in lakhs)	Newly Added
Video Centre	Existing
Seminar halls with ICT facilities	Existing
Classrooms with LCD facilities	Existing
Seminar Halls	Existing
Laboratories	Existing
Class rooms	Existing
Campus Area	Existing



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## 4.2 – Library as a Learning Resource

### 4.2.1 – Library is automated {Integrated Library Management System (ILMS)}

Name of the ILMS software	Nature of automation (fully or partially)	Version	Year of automation
Libsys	Fully	1	2005
Autolib	Fully	version 1	2014
Autolib with RFID upgraded	Fully	version 3 SMS with web OPAC	2018

### 4.2.2 – Library Services

Library Service Type	Existing		Newly Added		Total	
Text Books	55465	15758936	736	877422	56201	16636358
Reference Books	43942	7949273	345	349100	44287	8298373
e-Books	603	1976507	1018	611822	1621	2588329
Journals	759	1602719	147	322300	906	1925019
e-Journals	6000	11467595	6000	2865331	12000	14332926
Digital Database	3	59870	2	13570	5	73440
CD & Video	1271	641020	81	17743	1352	658763
Library Automation	2	2698545	1	649000	3	3347545
Weeding (hard & soft)	4133	1279916	Nil	Nil	4133	1279916
Others (specify)	1000	309750	3000	619500	4000	929250

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### 4.2.3 – E-content developed by teachers such as: e-PG- Pathshala, CEC (under e-PG- Pathshala CEC (Under Graduate) SWAYAM other MOOCs platform NPTEL/NMEICT/any other Government initiatives & institutional (Learning Management System (LMS) etc

Name of the Teacher	Name of the Module	Platform on which module is developed	Date of launching e-content
S Julius Fusic	Power Electronics and Drives	<a href="https://live.let.media.kyoto-u.ac.jp/moodle/course/view.php?id83">https://live.let.media.kyoto-u.ac.jp/moodle/course/view.php?id83</a>	19/08/2019
H Ramesh	System Integration	<a href="https://www.youtube.com/watch?vf3BWa8aKgMk">https://www.youtube.com/watch?vf3BWa8aKgMk</a>	09/09/2019
A M Abirami	Python	<a href="https://canvas.in">https://canvas.in</a>	20/01/2020

Programming

structure.com/courses/1800106

No file uploaded.

**4.3 – IT Infrastructure**

## 4.3.1 – Technology Upgradation (overall)

Type	Total Computers	Computer Lab	Internet	Browsing centers	Computer Centers	Office	Departments	Available Bandwidth (MBPS/GBPS)	Others
Existing	1833	472	131	136	149	66	879	200	0
Added	40	0	0	0	0	0	40	0	0
<b>Total</b>	<b>1873</b>	<b>472</b>	<b>131</b>	<b>136</b>	<b>149</b>	<b>66</b>	<b>919</b>	<b>200</b>	<b>0</b>

## 4.3.2 – Bandwidth available of internet connection in the Institution (Leased line)

200 MBPS/ GBPS

## 4.3.3 – Facility for e-content

Name of the e-content development facility	Provide the link of the videos and media centre and recording facility
DIT sponsored Video Studio for Content Generation	<a href="https://www.tce.edu/video-studio-for-content-generation">https://www.tce.edu/video-studio-for-content-generation</a>
DIT sponsored Video Studio for Content Generation	<a href="youtube.com/watch?v=W_MiBjWfy_Q">youtube.com/watch?v=W_MiBjWfy_Q</a>

**4.4 – Maintenance of Campus Infrastructure**

## 4.4.1 – Expenditure incurred on maintenance of physical facilities and academic support facilities, excluding salary component, during the year

Assigned Budget on academic facilities	Expenditure incurred on maintenance of academic facilities	Assigned budget on physical facilities	Expenditure incurred on maintenance of physical facilities
103.5	98.38	201.8	406.21

## 4.4.2 – Procedures and policies for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc. (maximum 500 words) (information to be available in institutional Website)

Electrical/Electronic Maintenance This section takes care of Installation of new electrical appliances, electrical maintenance of about 1000kVA, power consumption and energy monitoring, generator maintenance, energy conservation, liasoning with TANGEDCO and Electrical Inspectorate and Solar power maintenance. Procurement and installation of Audio, video communication equipment and computer network components, Uninterrupted Power supply and Air conditioner systems Service/ maintenance of equipment for rectification of faults by trained technicians after obtaining permission from registrar/ principal/ chairman depending on quantum of expenditure required Receiving complaints through TCENET Maintenance portal, through class committee reports and letters and tracked for its closure. Estate Maintenance Any building related request like building construction, modification/maintenance is passed to estate officer and is carried out with the budget approval from registrar/ principal/ chairman depending on the quantum of expenditure required. The classrooms, laboratory ambience, gardens, washrooms and student support

facilities are maintained on day to day basis by third party contract and by college. Transport Maintenance College supports commutation of college community by plying 4 cars, 8 buses and an Ambulance. Driver duty itinerary and transport scheduling is carried out by Transport officer. Transport fitness certification, maintenance and augmentation of vehicles are done on yearly basis. Library Maintenance Library day to day activities are governed by the Librarian and Assistants. The overall monitoring of the Library is governed by a committee consisting of Principal, Dean, Associate Dean and Department Level Coordinators and Librarian. Library committee scrutinizes the recommendation for the purchase of books and journals based on Goods of Committee norms. Library software will be reviewed by the committee, and upgraded Library follows the Government norms for weed out of worn out books, and stock verification of the books is done yearly. User awareness program on library resources are conducted periodically. Periodic feedback of the users is collected through Google survey. Library is maintained as per 5S quality norms and is monitored by 5S coordinators. Every day morning the return books will be re-shelved by the library assistants. Laboratory Maintenance The Laboratory in charge of respective laboratory is responsible for the Calibration of equipment and is reviewed on yearly basis. The Laboratory day to day electrical supply and electronics equipment is maintained by TCENET maintenance portal or by request letter through proper channel. All Laboratories is maintained as per 5S quality norms and is monitored by Department 5S coordinators. The obsolete equipment are condemned as per Government norms. The equipment in the laboratory are labeled by barcode and college asset register is maintained and audited. Laboratory ambience is done by third party estate maintenance contract and monitored by estate officer and the concerned laboratory technician. Computer System Maintenance The servers and desktop systems are checked once in a week for release of new updates and upgraded accordingly. The firmware up-gradation for network equipment like access points, switches are done on need basis.

<https://tcenet.tce.edu/py/maintenance/maintenance.py>

## CRITERION V – STUDENT SUPPORT AND PROGRESSION

### 5.1 – Student Support

#### 5.1.1 – Scholarships and Financial Support

	Name/Title of the scheme	Number of students	Amount in Rupees
Financial Support from institution	G 17 ALUMNI SCHOLARSHIP TCE ALUMNIS SCHOLARSHIP RUKMINI SHANMUGAM ENDOWMENT	209	3168150
Financial Support from Other Sources			
a) National	GOVT OF TAMILNADU BC/MBC/DNC/PK-SCHOLARSHIP GOVT OF TAMILNADU SC/ST SCHOLARSHIP ADI-DRAVIDAR AND TRIBAL WELFARE LOAN SCHOLARSHIP GOVT OF TAMILNADU SC/ ST C.M.AWARD Jammu and Kashmir Scholarship National	1300	15089515

	Scholarship Renewal Fresh		
b)International	TVS Motors	51	3248050
<a href="#">View File</a>			

5.1.2 – Number of capability enhancement and development schemes such as Soft skill development, Remedial coaching, Language lab, Bridge courses, Yoga, Meditation, Personal Counselling and Mentoring etc.,

Name of the capability enhancement scheme	Date of implementation	Number of students enrolled	Agencies involved
Mentoring	07/08/2019	3489	TCE Faculty
Women Development Cell	28/08/2019	80	Dean(Students), Associate Dean and ICC Members
Personal Counseling	24/04/2019	3489	MS Chellamuthu Trust and Research Foundation, Madurai and TCE Faculty Dr.C.Muruganandham, Professor of Mechanical Dept
Yoga and Meditation	18/07/2019	862	Art of Living International Center, Bengaluru
Bridge courses	07/08/2019	862	TCE Faculty
Language lab	05/08/2019	862	CCC -Lab by using English Mastery software-English dept. faculties
Remedial coaching	06/12/2019	678	TCE Faculty
Soft skill development	19/07/2019	129	TCE
<a href="#">View File</a>			

5.1.3 – Students benefited by guidance for competitive examinations and career counselling offered by the institution during the year

Year	Name of the scheme	Number of benefited students for competitive examination	Number of benefited students by career counseling activities	Number of students who have passed in the comp. exam	Number of students placed
2019	Orientation program and training classes	932	843	72	Nil
<a href="#">View File</a>					

5.1.4 – Institutional mechanism for transparency, timely redressal of student grievances, Prevention of sexual harassment and ragging cases during the year

Total grievances received	Number of grievances redressed	Avg. number of days for grievance redressal

Nil

Nil

Nil

**5.2 – Student Progression****5.2.1 – Details of campus placement during the year**

On campus			Off campus		
Name of organizations visited	Number of students participated	Number of students placed	Name of organizations visited	Number of students participated	Number of students placed
<b>Total Companies Visited 84</b>	<b>845</b>	<b>603</b>	<b>6</b>	<b>56</b>	<b>19</b>
<a href="#">View File</a>					

**5.2.2 – Student progression to higher education in percentage during the year**

Year	Number of students enrolling into higher education	Programme graduated from	Department graduated from	Name of institution joined	Name of programme admitted to
<b>2020</b>	<b>3</b>	<b>BE</b>	<b>Electrical Electronics Engineering</b>	<b>IIT Madras</b>	<b>MS Communication Systems and signal Processing</b>
<a href="#">View File</a>					

**5.2.3 – Students qualifying in state/ national/ international level examinations during the year (eg:NET/SET/SLET/GATE/GMAT/CAT/GRE/TOFEL/Civil Services/State Government Services)**

Items	Number of students selected/ qualifying
<b>GATE</b>	<b>48</b>
<b>CAT</b>	<b>5</b>
<b>GMAT</b>	<b>2</b>
<b>TOFEL</b>	<b>2</b>
<b>GRE</b>	<b>6</b>
<b>Any Other</b>	<b>9</b>
<a href="#">View File</a>	

**5.2.4 – Sports and cultural activities / competitions organised at the institution level during the year**

Activity	Level	Number of Participants
<b>Cultural Activities (12)</b>	<b>Inter Collegiate</b>	<b>6262</b>
<b>Sports Activities(8)</b>	<b>Inter Collegiate and State</b>	<b>1378</b>
<a href="#">View File</a>		

**5.3 – Student Participation and Activities****5.3.1 – Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one)**

Year	Name of the award/medal	National/ International	Number of awards for	Number of awards for	Student ID number	Name of the student
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			Sports	Cultural		
2019	Sports	National	10	Nil	Nil	Nil
2019	Cultural	National	Nil	13	Nil	Nil
<a href="#">View File</a>						

5.3.2 – Activity of Student Council & representation of students on academic & administrative bodies/committees of the institution (maximum 500 words)

Students' council meetings are conducted regularly. The Principal and Deans attend the student council meetings along with Class Representatives of both Undergraduate and postgraduate classes, student coordinators for placement activities, Technical Club Coordinators, Department Association Secretaries, Special Interest Group Coordinators and Higher studies and Language Club Coordinators are the members of this council. In every meeting, the Principal informs the students about the action taken on the issues/concerns reported in the previous meeting. During the meeting, the queries from the students are answered by the respective Deans/Principal. All the specific representations are informed to the respective authorities to respond within a stipulated time.

#### 5.4 – Alumni Engagement

5.4.1 – Whether the institution has registered Alumni Association?

Yes

TCE Alumni Association conducts various activities for the benefits of students. Personality Development Camps (PDC) Overview: TCE Alumni Association jointly with Rotary club of Madurai Metro conducted Personality Development camps at CESC, Kadavoor for the College students. 5 camps are being conducted every year. Nearly 2500 students were benefitted. The students (alumni) who passed out of the college were supporting the camps till now by handling sessions, coordinating the camp activities etc. Objective: The Programme consists of presentations for students by eminent scholars in the field of Management, Health, Motivation, Decision making, Understanding self, Attitude change, Critical thinking, Peer relationship, Communication skills, Yogic practices etc. The students get benefitted and motivated through these camps both in profession and family. Camp Name, Blossom, Efflorescence, Zenith, Pinnacle Orchid Alumni Endowment Scholarships Overview: • To pay their college fees many students admitted to the B.E./B.Tech courses in the college are from rural and poor background and they are in need of financial support • TCEAA provides financial support to such needy students based on a merit cum means basis • The donations received from the alumni are deposited as corpus fund in TCE Alumni Charitable Trust and the interest earned from that is used for student scholarships Donations are exempted under Section 80G of the Income Tax Act Alumni Scholarships • TCE Alumni Charitable Trust Scholarship • Rukmani Shanmugam Endowment Scholarship • G17 Alumni Scholarship - 1966, 1967 and 1968 Alumni • Pannaikadu Veerammal Paramasivam Endowment Scholarship - 1962 Civil Alumni • Esaiselvan Memorial Scholarship - 1978 Civil Alumni • Meenakshi Srinivasan Endowment • TSK Memorial Scholarship • Subramanian Scholarship • Shripriya Mahesh Scholarship • P V Shanmugam Scholarship - 1980 Mechanical Alumni • Urmila Mahendra Babu Scholarship - 1964 EEE Alumni • Pitchai Mahalingam Scholarship Scholarships distributed: Alumni Reunions Reunion Schedule: • Silver Jubilee Reunions - conducted during July / December • Golden Jubilee Reunions - conducted during December / July • Other Reunions -10th year, 16th year, 20th year, 40th year and 50th year reunions

5.4.2 – No. of registered Alumni:

13303

5.4.3 – Alumni contribution during the year (in Rupees) :

7024000

5.4.4 – Meetings/activities organized by Alumni Association :

Meetings/Activities for the Academic Year 2019-2020 Reunion: 20th Year Reunion(1999 batch) 5-7-2019 Golden Jubilee (1969 batch) 21-7-2019 Ruby Celebration(1979 batch) 26-7-2019 Silver Jubilee (1994 batch) 27-7-2019 Ruby Celebration(1980 batch) 13-2-2020 Alumni Association Meeting Executive Committee Meeting 8-6-2019 Annual General Body Meeting 29-7-2019 Executive Committee Meeting 14-9-2019 Executive Committee Meeting 14-12-2019 Executive Committee Meeting 14-3-2020 Personality Development Camp Blossom-19 19-7-2019 to 21-7-2019 Efflorescence-19 6-9-2019 to 8-9-2019 Zenith-19 21-9-2019 to 23-9-2019 Students Workshop ALEXSHA Alumni Sharing Experiences (by 1980 Batch) 19-12-2019 and 20-12-2019

## **CRITERION VI – GOVERNANCE, LEADERSHIP AND MANAGEMENT**

### **6.1 – Institutional Vision and Leadership**

6.1.1 – Mention two practices of decentralization and participative management during the last year (maximum 500 words)

The Organizational structure consists of Principal, Deans, Registrar, Heads of the Departments (HoD), Controller of Examinations, Associate Deans, College level Coordinators and Department level coordinators under the leadership of Chairman and Correspondent for the effective functioning of the Institute. The administrative tasks are decentralized to the following Deans, with the well defined activities • Dean (Planning and Development): Quality Systems, Alumni Interaction, International and National Collaborations • Dean (Academic Process): Curriculum Design, Content Delivery, Assessment, Automation of Academic Process, Regulations, Academic Calendar • Dean (Research and Development): PhD Admissions, Academic Research, Sponsored Research, Library • Dean (Industry Institute Interaction): Consultancy, Patents, Entrepreneurship, Placement and Internship, Industry Collaborations • Dean (Students): Mentoring, Counseling, women Development Cell, Professional Societies, Student Clubs, Career Guidance • Dean (Extra-curricular activities): NCC, NSS, Physical Education, Cultural, Technology based social work • Registrar: Student Admission, Staff Recruitment, Infrastructure and Finance • Controller of Examinations: Exam related activities The day-by day academic and administrative activities are being carried out by the respective Head of the Departments following the Standard Operating Procedure set by the Senior administrators (Principal and Deans) and the Management. The Principal and Deans along with HoDs, based on their own experience in academic and research activities, convert them into tangible actions in respect of teaching learning process, research and development, and industry institute interaction. The action points are executed by College level and department level Coordinators and their team consisting of faculty members from all the departments. Over a period, the sporadic discussions have given way for periodic discussions at Standing Committee level. The departmental action points in respect of teaching learning process, research and development, industry institute interaction are focused towards meeting the expectation of faculty, students, industry, society and alumni. The decentralization process facilitates the grooming of future organizational leaders. The activities pertaining to the institute in respect of teaching, learning, research and development, industry interface and student activities are reviewed by the Governing Council which is the apex body of the institute. The academic activities are initiated by the department faculty in consultation with the present and past students and industries. Subsequently, it is scrutinized by the Board of Studies and then presented in the standing committee for approval in Academic Council and Governing Council. Any grievance

in academic activities could be represented to the Appeals and Grievances Committee. Grievances in any of the domains could be represented with Governing Council. The Principal discusses the outcomes of Governing Council meetings with the Deans and HODs to evolve a consensus on the focus areas of teaching learning process and research and development.

6.1.2 – Does the institution have a Management Information System (MIS)?

Yes

## 6.2 – Strategy Development and Deployment

6.2.1 – Quality improvement strategies adopted by the institution for each of the following (with in 100 words each):

Strategy Type	Details
Admission of Students	Outreach programmes are organized for school students to know about various Engineering Disciplines. These potential students are invited to Laboratories of the institute and given demonstrations about different tools and technologies like Internet of Things, Virtual Reality, etc. Summer/Winter vacation programmes on Programming are organized for higher secondary and polytechnic students. An event (Festival) on Open Source tools is also exclusively organized for school/diploma students. These strategies support for improvement in the Students admission process
Industry Interaction / Collaboration	Triveni Expo has been organized for understanding the industry requirements of small/medium scale industries. At the same time, TCEs capabilities in various domains are also demonstrated to the industry people. Industry supported Hackathons are organized to motivate students in the Product Development. Technical guest lectures and webinars are organized with the support of Industries and Professional Societies in the emerging topics
Human Resource Management	Faculty Appraisal process is implemented and monetary benefit is given as per their performance. Faculty members are given the financial assistance (registration fee, TA and DA) for attending workshops/seminars/conferences in higher learning institutes Faculty members are also motivated to carry out research and consultancy projects, publishing papers in highly reputed journals, patents through monetary benefits. Faculty members are facilitated for filing the Patents.
Library, ICT and Physical	TCE library increased its



Infrastructure / Instrumentation

subscriptions to eJournals and eBooks. Remote access has been given to all the students, Research Scholars and Faculty for books and journals. Library automation was enhanced with RFID tagging. Recording facility in the classroom has been provided through Impartus platform and classroom teaching recordings are shared with the students. Makerspace for conceiving the ideas, and exploring the product design established where all the students are involved in collaborative and inter-disciplinary projects.

Research and Development

Targets are revised for the number of journal and conference publications and included in the Faculty Performance Appraisal format. Workshops and awareness programs were organized to motivate the PG students, research scholars, and Faculty to improve the number of research publications in the referred and highly impact factor journals. New initiatives have been taken to increase the number of Research Supervisors and Full time PhD students. Faculty members are consistently motivated to apply for sponsored research projects to the Government agencies. Academic collaborations with National and International Institutes are initiated for Joint research publications

Examination and Evaluation

Academic Regulations is updated to include credits earned from NPTEL/SWAYAM courses by UG students. A revised assessment pattern is introduced to improve knowledge/concept level understanding, presentation skill and professional skill of postgraduate students. The Controller of Examinations (CoE) office has adopted student centric and transparent practices by automating the examination processes. Starting from course registration to publication of results is carried out digitally, resulting in error free and faster operation. The examination schedule is published in automated software and students can view it using mobile app also. All announcements are made using automated software so as to reach stakeholders instantly.

Teaching and Learning

CDIO Core group is formed with faculty representation from all the Departments. The core group members

come up with Course Template and Assessment Methodologies in alignment with CDIO standards. It has been disseminated to all Faculty members for Course Design process. This helps in the introduction of TCE Proficiency Scale for measuring each student's performance in each course in the dimensions like Cognitive, Affective and Psychomotor Domains based on Bloom's Taxonomy. Subsequently, TCE has become a member in Worldwide CDIO Initiative and presented TCE's approach at Dalian, China in March 2019. New interim assessment method is adopted for PG programmes.

**Curriculum Development**

Conceive, Design, Implement and Operate (CDIO) framework has been adapted in Curriculum Design since the academic year 2018-19 for the effective implementation of Outcome Based Education (OBE). It ensures technical, personal, inter-personal and professional skills required for an Engineering graduate. New courses namely Engineering Exploration, Lateral Thinking, Design Thinking, Project Management, System Thinking, Engineering Design Project, and Capstone Design Project are introduced in the curriculum of B.E./B.Tech Engineering Programmes. These courses help the students to implement interdisciplinary projects. New value added courses namely Professional Authoring and Value Education are introduced for PG programmes.

**6.2.2 – Implementation of e-governance in areas of operations:**

E-governance area	Details
Administration	The administration is carried out with the use of In-House Software Modules developed by the Department of Computer Science and Engineering. The Module TCENet has been developed for maintenance and faculty profile update, Thiagarajar Attendance Monitoring System (TAMS) is used for Staff Attendance Monitoring and TEAM is used for Asset Management
Student Admission and Support	The software module Thiagarajar Admission Automation (TAA) module is used for Student Admissions and maintaining student database. The software module TCENet Generation 3 (TNG3) is used for maintaining student academic records including attendance

	and Assessment
Examination	The in-house software module Thiagarajar Exam Automation (TEA) is used by the office of the Controller of Examinations to organize all examinations related activities
Finance and Accounts	The college finance and accounts are maintained by the software modules Mastersoft and Tally for Payroll Systems

### 6.3 – Faculty Empowerment Strategies

6.3.1 – Teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

Year	Name of Teacher	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support
2019	Mr.R.K.C.Jeya kumar200	Five days TEQIP Short term Course on Environmental Engineering for Sustainable making	IIT	20006
<a href="#">View File</a>				

6.3.2 – Number of professional development / administrative training programmes organized by the Colleges for teaching and non teaching staff during the year

Year	Title of the professional development programme organised for teaching staff	Title of the administrative training programme organised for non-teaching staff	From date	To Date	Number of participants (Teaching staff)	Number of participants (non-teaching staff)
2019	5 days FDP on Robotics in Automation	Nill	17/06/2019	21/06/2019	15	Nill
2020	Nill	Training Program on Fire Safty	24/02/2020	24/02/2020	Nill	30
<a href="#">View File</a>						

6.3.3 – No. of teachers attending professional development programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes during the year

Title of the professional development programme	Number of teachers who attended	From Date	To date	Duration
CII Workshop on Machine	2	24/06/2019	25/06/2019	2

Learning Hands-On, No Coding Experience			
<a href="#">View File</a>			

6.3.4 – Faculty and Staff recruitment (no. for permanent recruitment):

Teaching		Non-teaching	
Permanent	Full Time	Permanent	Full Time
232	232	192	192

6.3.5 – Welfare schemes for

Teaching	Non-teaching	Students
<ul style="list-style-type: none"> <li>• The workforce is supported by the administration in respect of admission to the engineering programmes for their children, additional medical benefits on a case to case basis.</li> <li>• The management provides sabbatical leave for post-doctoral studies and internship at industries by faculty.</li> <li>• Faculty members are rewarded with 3 increments in Basic Pay, on completion of Doctoral degree programme.</li> <li>• Faculty are also motivated for carrying out research and consultancy projects, publishing papers in highly reputed journals, filing patents through monetary benefits.</li> <li>• Prescribed EPF is provided to all faculty members.</li> <li>• Faculty are recognized with the remuneration for coordinating FDPs</li> <li>• Faculty are given the financial assistance (registration fee, TA and DA) for attending workshops/seminars/conferences in higher learning institutes</li> <li>• The promotion/career advancement for faculty members is offered as per the Government norms.</li> <li>• Maternity leave is</li> </ul>	<ul style="list-style-type: none"> <li>• The workforce is supported by the administration in respect of admission to the engineering programmes for their children, additional medical benefits on a case to case basis.</li> <li>• Prescribed EPF is provided to all staff members.</li> <li>• All the employees are covered with Health insurance (ESI).</li> <li>• Awareness workshops on safety and health consciousness are organized.</li> <li>• Compensation for working on holidays and beyond working hours is suitably compensated with monetary benefit/leave.</li> <li>• Work environment is ergonomically designed.</li> <li>• Staff quarters are available for non-teaching staff.</li> <li>• Staff members are provided with Festival Advance.</li> <li>• Security personnel are provided with uniform allowance and washing allowance</li> </ul>	<ul style="list-style-type: none"> <li>• The college does not collect any capitation fee from the students thereby society at large is convinced about the ethical practices of the management.</li> <li>• Students are facilitated to avail scholarship from Tamil Nadu State Government Scholarship for BC/MBC/DNC/PK, Tamil Nadu State Government Scholarship for SC/ST, Adi-Dravidar and Tribal Welfare Loan Scholarship, Tamil Nadu State Government SC/ST CM Award, Jammu Kashmir Scholarship and National Scholarship Renewal Fresh</li> <li>• Economically weaker/needy students supported with G17 Alumni Scholarship, TCE Alumni's Scholarship, Rukmani Shanmugam Endowment, KKTC Memorial Charitable Trust</li> <li>• Students Selected by TVS Motors, Hosur are awarded College fees, Hostel fees and other study related expenses</li> <li>• Students- Scholarships and Internships at India and abroad</li> <li>• Financial support for participating in national/international technical contests and conferences and for carrying out innovative/societal projects, on selection basis.</li> <li>• Medical</li> </ul>

sanctioned to women faculty members as per Government norms. • Medical/Accidental claims are facilitated to workforce. • Faculty and staff have sports contest annually. • Career Advancement and/or Selection process is being carried out for the promotions of faculty as per prescribed norms. • Remuneration for faculty who takes special coaching for slow learners is given through TEQIP III. • The sponsored research works successfully carried out by the faculty members fetch them incentives and recognition, leading to committed workforce. Committed faculty members are sponsored to attend the specialized trainings in their own domain. In order to reinforce the student and organizational focus, new groups among workforce is formed and supported. • Faculty members are also motivated to carry out research and consultancy projects, publishing papers in highly reputed journals, patents through monetary benefits. • Faculty members are facilitated for filing the Patents. • Coordinator honorarium are given to faculty who plans and organizes FDPs

facilities are provided for all students

#### 6.4 – Financial Management and Resource Mobilization

##### 6.4.1 – Institution conducts internal and external financial audits regularly (with in 100 words each)

Financial planning is carried out annually by the Principal and Registrar considering the budget proposals submitted by the respective authorities in the College and the income expenditure during the last financial year. Budget allocation is done for every academic year for each department under various heads. The prepared budget proposal is placed before the Governing Council for approval. Financial activities are carried out by accounts manager under the guidance of Registrar. This process is scrutinized by the management auditors and Government auditors (Local Fund and Account General). Internal financial

auditor has freedom to suggest and revise the formats of relevance based on the feedback from the students and faculty, in consultation with Registrar. Utilization is tracked periodically through internal and external finance audits. Further, as the college is supported TEQIP - world bank initiative, budget is also allotted to new initiatives like infrastructure development, curriculum development, faculty development and industry interaction as per the guidelines by National Project Implementation Unit (NPIU).

6.4.2 – Funds / Grants received from management, non-government bodies, individuals, philanthropies during the year(not covered in Criterion III)

Name of the non government funding agencies /individuals	Funds/ Grnats received in Rs.	Purpose
Management and TVS	762.57	Research Activities and Payment of Scholarship to Students
No file uploaded.		

6.4.3 – Total corpus fund generated

8351972
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### 6.5 – Internal Quality Assurance System

6.5.1 – Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	TCE-AAA Committee	Yes	TCE-IQAC
Administrative	Yes	TCE-AAA Committee	Yes	TCE-IQAC

6.5.2 – Activities and support from the Parent – Teacher Association (at least three)

(i) Tutors discuss with their parents and wards for career progression (ii) Tutors communicate the academic performance of their wards with their parents and plans for improvement (iii) Department Board of Studies team collects feedback from the parents for the Curriculum Design and Development (iv) Parent Teacher meeting feed backs have facilitated in evolving strategies for personality development, skill development and beyond curriculum learning.

6.5.3 – Development programmes for support staff (at least three)

(i) Trainings in Fire Safety, (ii) 5S training for laboratory/workshop maintenance (iii) Skill Development Training in Networking, Computers, Electrical maintenance

6.5.4 – Post Accreditation initiative(s) (mention at least three)

1. Awareness on the Patent Publishing 2. Book Chapters and publications in recognized International and National Conferences 3. Setting up TCE Management Information System by consolidating the Metrics required by different accreditation and ranking frameworks like NAAC, NBA and NIRF 4. An open house for industries facilitated a tripartite partnership between the institution, the supplier and the industry and the society, the customers. 5. Periodic Monitoring in all Functional domain

6.5.5 – Internal Quality Assurance System Details

a) Submission of Data for AISHE portal	Yes
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b)Participation in NIRF	Yes
c)ISO certification	No
d)NBA or any other quality audit	Yes

6.5.6 – Number of Quality Initiatives undertaken during the year

Year	Name of quality initiative by IQAC	Date of conducting IQAC	Duration From	Duration To	Number of participants
2019	Preparation for Academic Administrative Audit	01/11/2019	15/11/2019	28/11/2019	30
<a href="#">View File</a>					

**CRITERION VII – INSTITUTIONAL VALUES AND BEST PRACTICES**

**7.1 – Institutional Values and Social Responsibilities**

7.1.1 – Gender Equity (Number of gender equity promotion programmes organized by the institution during the year)

Title of the programme	Period from	Period To	Number of Participants	
			Female	Male
Legal Rights for women	04/10/2019	04/10/2019	52	2
Women's Day	12/03/2020	12/03/2020	248	2

7.1.2 – Environmental Consciousness and Sustainability/Alternate Energy initiatives such as:

Percentage of power requirement of the University met by the renewable energy sources
45

7.1.3 – Differently abled (Divyangjan) friendliness

Item facilities	Yes/No	Number of beneficiaries
Physical facilities	Yes	13
Provision for lift	Yes	13
Ramp/Rails	Yes	13
Rest Rooms	Yes	13

7.1.4 – Inclusion and Situatedness

Year	Number of initiatives to address locational advantages and disadvantages	Number of initiatives taken to engage with and contribute to local community	Date	Duration	Name of initiative	Issues addressed	Number of participating students and staff
2020	1	1	03/04/2020	1	Green Earth Day	Students Awareness and Program	108

[View File](#)

## 7.1.5 – Human Values and Professional Ethics

Title	Date of publication	Follow up(max 100 words)
Academic Calender	10/06/2019	<p>Every academic year, anti-ragging committee is formed and the committee members address all the senior students not to involve in Ragging in any form. In the orientation programme, all the students are informed to the college culture and adhere to the following</p> <ul style="list-style-type: none"> <li>•Wear identity card within the college campus</li> <li>•Wear proper fitting clothes considered decent and acceptable</li> <li>•Students shall wear decent formal dresses</li> <li>•In the interest of public health and safety, the college campus is declared as Non-Smoking area.</li> <li>•Only Vegetarian foods are allowed inside the campus</li> </ul>

## 7.1.6 – Activities conducted for promotion of universal Values and Ethics

Activity	Duration From	Duration To	Number of participants
Shristi Ingural	20/08/2019	20/08/2019	312

[View File](#)

## 7.1.7 – Initiatives taken by the institution to make the campus eco-friendly (at least five)

(1) TCE has initiated following energy conservation measures to ensure cost control: Periodic energy auditing, generation and utilization of bio-gas in hostels, Energy conserving lighting systems.
(2) Solar stills for hot water usage in hostel, 450 KW Solar power plant has been installed in the roof tops of various buildings.
(3) Recycling waste water (grey water) from the canteen and other cooking areas in the campus is used for watering plants. Drip irrigation is practiced for teak plantation in the campus.
(4) Rain water harvesting is practiced in the campus and a storage tank of capacity two lakh litres (50 thousand gallons) is stored annually.
(5) Recycling of plastics is one of the key factors in protecting the environment. The College collects Plastic waste from different parts of the city for laying plastic roads in the campus. Most segments of the roads and central parking area were laid from plastic wastes.
(6) Educating the students about the green atmosphere, plastic waste and garbage culture is handled in NSS and NCC programmes.



## 7.2 – Best Practices

### 7.2.1 – Describe at least two institutional best practices

Best Practice 1: Implementation of Design Thinking Course: The major objective of any engineering program is to produce graduating engineers with ability to conceive-design-implement-operate complex value-added engineering systems in a modern team-based environment. In the view of students' engagement in solving challenging and real-world problems, the Engineering Design course was introduced in our earlier curriculum. With use of design principles, students developed a prototype addressing a specified theme area like smart city. It was observed that students were enthusiastic and interested in developing innovative ideas. Besides, feedback was also obtained from the course handling faculty members and they expressed their need for training in handling project-based learning courses. As part of institutional capacity building, twenty faculty members were undergone a training programme on the Design Thinking course with the human-centered design approach offered by Purdue University in collaboration with Indo-Universal Collaboration for Engineering Education (IUCEE). In order to improve the students' involvement in community-based projects and addressing technical, personal and interpersonal skills, the previous Engineering Design course was modified as Design Thinking course. This course is a customized version of the Engineering Projects in Community Services (EPICS) design process by adopting the first three of its phases namely problem identification, specification development and conceptual design phases. The Design Thinking course was first offered to 880 undergraduate students belong to civil, mechanical, electrical and electronics, electronics and communication, computer science and engineering, information technology and mechatronics programmes in the academic year 2019-20. Significant outcome of the design thinking course includes 164 conceptual prototypes of real-world location-specific community problems. A study was conducted to analyze the students' engagement in this course and in addressing community-based projects influences their perceptions on learning experiences and professional skills of 21st century learning skills (creativity, critical thinking, collaboration, and communication). An institutional survey with a 4-point Likert scale has been conducted to determine the effectiveness of the course. Students' learning experiences in the Design Thinking process, team experience, professional communication and assessment were performance measures of this online survey. Satisfaction index of the students is improved mainly because of experiential learning. Use of the rubrics for periodic reviews served as an effective instrument for assessing personal and interpersonal skills of the students. Opportunities provided for promoting 21st-century skills namely creativity, critical thinking, collaboration and communication have motivated the students to take up the prototypes to next level of its implementation. Many of our students have extended their projects of design thinking and exhibited their implementations in national level contest like Smart India Hackathon and IUCEE-EPICS Design contest and received good recognition and rewards. The training programs on Design Thinking have enriched the faculty competence in mentoring the students with a human-centered approach to solve real community problems. The outcome of this training resulted in faculty awards for their posters in Design Thinking training programme. The course coordinator has been rewarded with IUCEE- Transformational award for the year 2019 under the category of Leadership in Community Project-Based Learning (CPBL). Based on the feedback from faculty and students and as a part of continual improvement, few refinements in the pedagogy of Design Thinking course are in progress. Based on the experience gained in its initial attempt and the feedback from the faculty students, the implementation process for managing an interdisciplinary team is under development.

Best Practice 2: In-house training workshops for enhancing faculty competence in CDIO Implementation: The CDIO INITIATIVE is an innovative educational framework that has been followed in many world-class educational

institutions in USA, Europe and Asian countries for producing the next generation of engineers. It provides students with an education in the context of Conceiving – Designing – Implementing – Operating (CDIO) real-world systems and products. Thiagarajar College of Engineering (TCE), Madurai is one among those institutions following the CDIO framework for all undergraduate engineering programmes since the academic year 2018-19. In our institute, a sequence of training programs has been conducted initially by the internal CDIO experts for selective faculty members from each department and the trained faculty members have been involved in knowledge transfer in the respective departments. There has been introduction of new courses pertaining to CDIO including Engineering exploration, design thinking, system thinking and lateral thinking in UG engineering programs. Though the new courses like engineering design has been well received by the students, it has been felt that CDIO initiatives needs intensive workshops to all the faculty members focusing design of CDIO curriculum, acquisition and practice of CDIO skills to enhance the faculty competence in CDIO. Hence, a series of CDIO training workshops has been planned with all the three elements of any FDP: Outcome based content, assessment activities to measure outcomes and analysis of feedback to find insights. The two major outcomes of the workshop are: At the end of the workshop the participants will be able 1) To design theory course with suitable content, delivery methods and assessment in CDIO curriculum 2) To incorporate necessary changes to be made in laboratory courses with respect to CDIO framework. Workshops have been conducted in three batches with the topic "Design of CDIO curriculum" in online mode for all the faculty members (n205) in consecutive weeks. Two quizzes have been conducted and feedback has been collected at the end of the workshop for each batch. The outcomes of these workshops were measured through the Higher Order Thinking Skills (HOTS) exhibited in the assessment activities and feedback. It has been observed that the training workshop satisfies the expectations of the participants with a Satisfaction Index of 0.924. It has been found from the results of assessments that more pedagogic innovations need to be introduced in these workshops to make them excel in higher level cognitive tasks. There are few recommendations drawn from the feedback given from the participants to prepare for the next level of programs needed to improve their expertise in CDIO framework. The transformation of teachers with this training workshop in designing CDIO curriculum shall be realized in the next academic year 2021-22 as there shall be design of new courses based on CDIO initiatives. A study shall be conducted during the time to measure the outcome of this workshop in terms of student performance in CDIO courses. In future, there may be specific need-based programs based on the experience and expertise of teachers in terms of CDIO implementation. This research study paves way for looking into the organization of FDPs in the educational institutions as need based specific training workshops.

Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link

<https://www.tce.edu/naac/naac-aqar>

### 7.3 – Institutional Distinctiveness

7.3.1 – Provide the details of the performance of the institution in one area distinctive to its vision, priority and thrust in not more than 500 words

The institutional distinctiveness activity in the academic year 2019-20, is institutionalizing the experience gained in the activities namely IUCEE International Engineering Education Certification Programme (IIEECP), implementation of CDIO courses, community outreach programmes, Engineering Education Research, Organizing International conferences workshops, In-house Faculty development programmes by Academic process team members and interaction

with industries in order to produce role ready engineers by bringing real world context in the campus. IIEECP Program has opened a wide door to the new pedagogical practices and introduced to academic experts across the world. 19 faculty members have got IIEECP and other 38 faculty members have completed the first Phase of the programme. TCE is a member in Purdue University's Engineering Projects in Community Services (EPICS) Program. EPICS Program is an engineering-centered, multidisciplinary, community-based approach to design education. TCE, with its strong passion for research, supports research in Engineering Education also. The faculty of TCE has participated in various EER courses offered by IUCEE with EER experts. Also, EER publications of TCE faculty in ICTIEE Conferences have been sponsored by the institution. All these activities helped our institute excelling in their respective domains. However, to meet the vision of the institute, the following functional domains are identified in institutionalizing and integrating all these academic and administrative process activities

1. Academics and Curriculum
2. Student Engagement
3. Research Experience
4. Faculty Development
5. Academic Collaborations
6. Industry Collaborations
7. Branding, Marketing and Outreach
8. Placement and Internship
9. Process and Data Management System

The activities in these domains are effectively executed by respective Deans in collaboration with others.

Provide the weblink of the institution

<https://www.tce.edu/naac/naac-aqar>

### **8.Future Plans of Actions for Next Academic Year**

The future plans for the academic year 2019-20 are as follows

1. Effective Implementation of the Paper on 'Research Practice' in undergraduate Conceive Design Implement Operate (CDIO) framework based curriculum to promote research culture among the undergraduate students.
2. Setting up of smart classrooms in order to promote active and collaborative learning in the classrooms
3. Increasing the number of publications in reputed Journal and Conferences by motivating the faculty members with the financial support from the management
4. Recruitment of adjunct faculty in order to improve the collaboration with the industries and higher learning institutions.
5. Roll out of online programmes by TCE
6. Improving the transition rate of lateral entry students
7. Establishment of Research Council to improve academic and sponsored research.