

INTERNAL QUALITY ASSURANCE CELL (IQAC)

Minutes of Meeting					
Meeting Date	4 th May 2022	Meeting Time	3:00-5:00 PM	Venue	Committee Room

IQAC meeting was held on May 04, 2022, at 3:00 PM in committee room. Following members were present.

Prof. Prakash Gopalan, Director, Chairman IQAC
Prof. Ajay Batish, Deputy Director & IQAC Coordinator
Prof Rafat Siddique, DoRSP
Prof. R S Kaler, DoFA & HEIED
Prof. Inderveer Channa, Dean of Student Affairs
Prof. Maninder Singh, DOAA
Prof. S S Bhatia, COE
Prof. Prempal Bansal, Head, CED
Prof. Rajeev Mehta, Head, HCHED
Dr. Shalini Batra, Head, CSED
Prof T K Bera, Head MED
Prof. Alpana Agrawal, Head, ECED
Prof. M.S. Reddy, Head, BTD
Dr. S. C. Bose, Representative of Head, SHSS
Prof. Mahesh Kumar Sharma, Head, SOMS
Prof. Satnam Singh, Head, SCBC
Dr. Anoop Verma, Head, SEE
Prof. Kulvir Singh, SPMS
Dr. Vinay Kumar representative Head, TSLAS
Dr. H. S. Bawa, Head, CILP
Mr. Ashwini Kumar Kapoor, Alumni (Online)
Mr. Anurag Mishra, Student Representative
Ms. Srishti Bhardwaj, Student Representative

The following could not attend the meeting and were granted leave of absence.

Dr. Gurbinder Singh, Registrar
Mr. Rajat Sikka, Academic Liaison Officer, TCS
Prof. Padmakumar Nair, Director, LMTSoM
Mr. Sanjay Sen, Representative of BoG

Action taken report on the minutes of previous IQAC

All pending issues have been acted upon and completed.

A brief presentation on action taken report and other activities of IQAC was made by the IQAC coordinator. The report below summarizes the discussion points.

Academic working 2021-22:

The first semester of the academic year 2021-22 was conducted in hybrid mode in which 70-80% of the teaching and evaluation were conducted face to face. This includes a written test which was conducted with the weightage equivalent to End Semester Test in an offline

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mode. Remaining teaching and evaluations are being conducted in online mode. The second semester of the academic year 2021-22 was conducted in regular mode, where an option for online mode was also given to students. Almost 95% of the students attended the semester in offline mode. All the evaluations including Mid semester and End semester examinations were conducted in the offline mode.

Stimulating research, development, and consultation:

Thapar Institute offers world-class infrastructure and a sound knowledge base to carry out complex research projects. Research is a stated mission, and many are funded by government agencies and industry. Our research projects are not just for technological innovation but also for amplification of research results, transfer of technology and establishing technology driven businesses. Thapar Institute has several centres of excellence for students and researchers. Many respected and renowned Indian and international companies are associated with this learning centre for research and faculty exchange programs.

Cutting-edge research is at the heart of the university, which believes that original research must be the backbone of engineering education. Thaparians had 1116 published research papers in SCI Journals in 2020-21 and many sponsored research projects are currently ongoing in different disciplines. With research focused in niche areas of engineering and sciences, Thapar Institute of Engineering & Technology has over 9600 published research papers in peer-reviewed journals under its belt.

Total No. of SCI papers (2016-2022)	No. of Faculty members with at least 10 SCI papers (2016-2022)
6897	265

Research Indicators

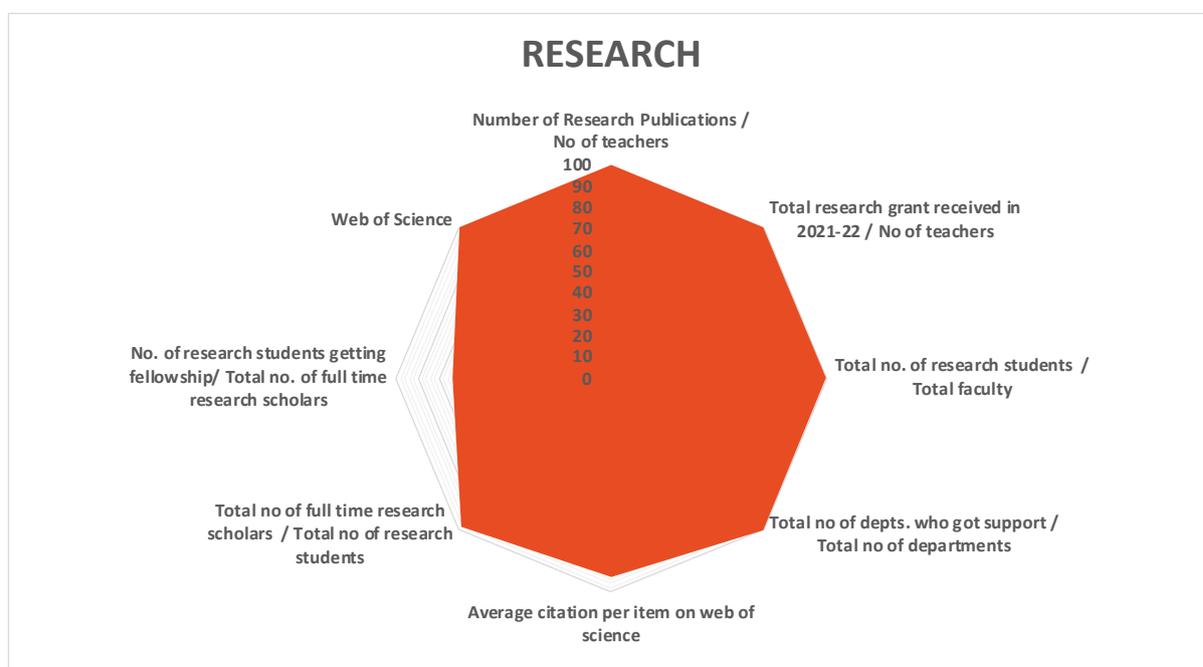


Figure 1: Research Performance of TIET

The Institute faculty have published 1362 Scopus publications in the last year Jan-Dec 2021. The average citation for publications from institution has risen to 14.9 from last year's 13.93. The h-index of the institute has also been increased to 110. Overall, on average each faculty

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members have published at least 2 papers in Scopus/SCI journal meeting the expectation set in the last meeting.

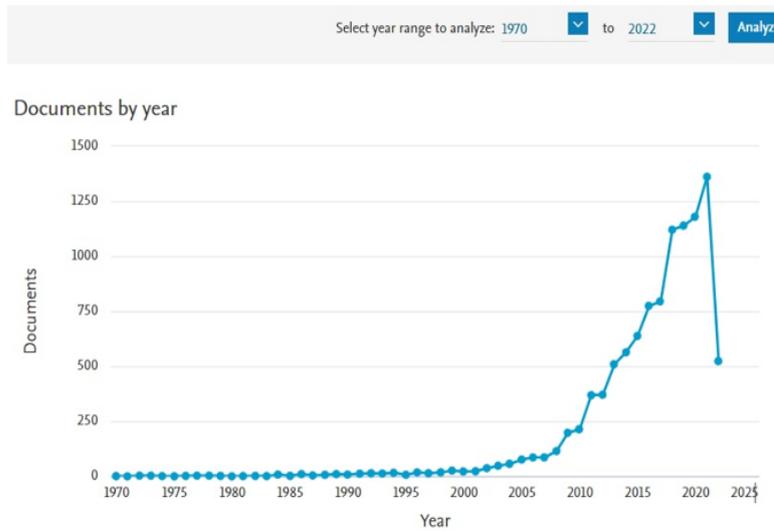


Figure 2: Publications by TIET Faculty

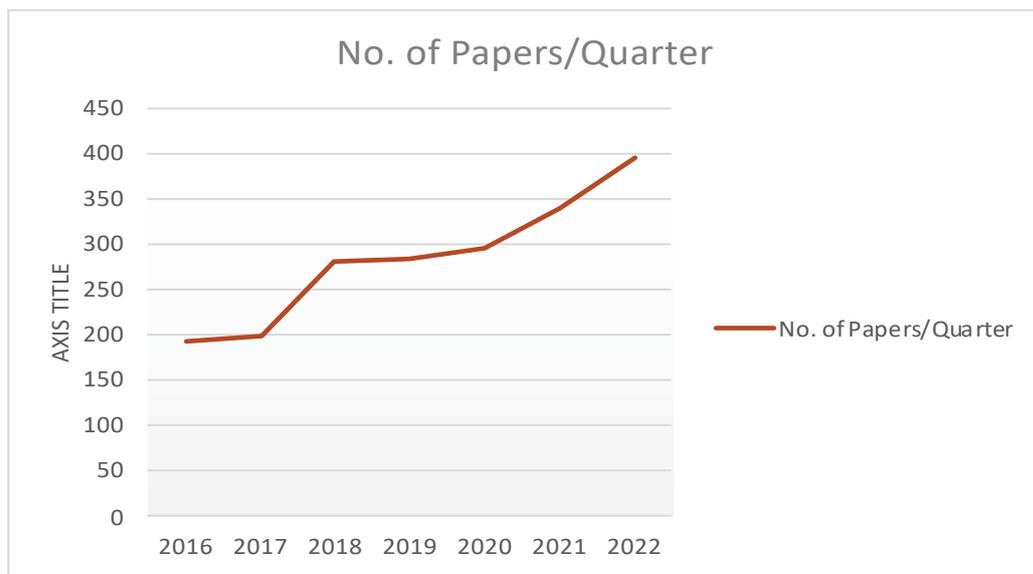


Figure 3: SCI Publications in last 5 years

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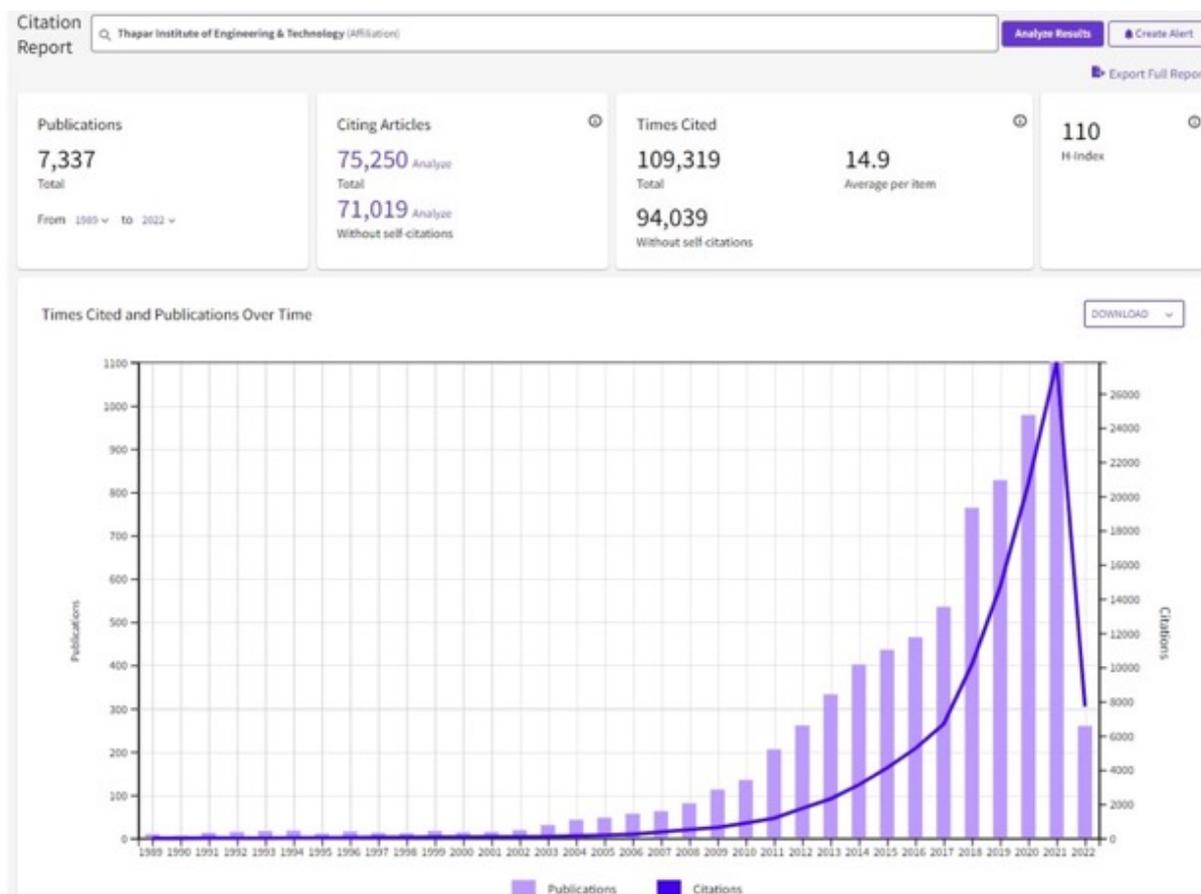


Figure 4: Citation and H index of TIET

Institute faculty members secured a total grant of ₹1262.21 Lakhs from various funding agencies for cutting edge research in their domains. A total of 638 students have been funded by the institute/MHRD/other govt. funding agencies at various levels for contributing to ongoing research projects and their PhD programs in various departments/schools. Overall, the Institute has crossed the benchmark (>Rs.2 Lakh per eligible faculty) for research grant by securing Rs. 3.38 lacs per eligible faculty per year.

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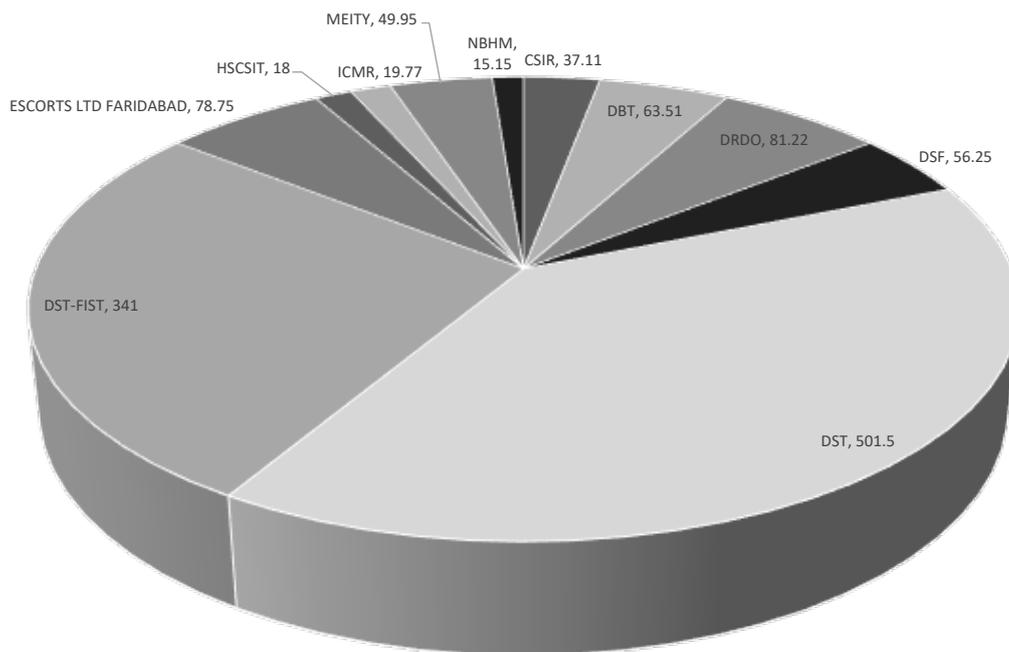


Figure 5: Funding sanctioned/received in 2021-22

Going Forward



TIET has experienced remarkable growth in research activity during the last 5 years, and growth is often the by-product of doing things better. Some initiatives cited above and many, many more help explain TIET’s journey till date. ***Going forward the institution aims to make targeted investments to develop new interdisciplinary and inter-institutional collaborations to establish six centres of excellence (COE) across identified research themes.*** TIET is also undertaking multiple other initiatives to build research excellence

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focused at solving real world problems and providing students with experiential learning for better application and analytical skills.

TIET has already established three chairs to lead the Food Security, Emerging Materials and Advanced Manufacturing Centers during the last 20 months. The food security chair is led by Prof Yosi Shacham from Tel Aviv University and the Emerging Materials Chair is led by Prof Roop Mahajan from Virginia Tech. The third chair was established recently with appointment of Prof Noam Eliaz from Tel Aviv University to lead the Advanced Manufacturing Centre. All the three Chairs are eminent professors with wide research experience in their fields. Two of these centers are already operational at Patiala and both Chair Professors have followed similar strategies in running their respective centers. As the 6 CoEs get established, it is expected that close to 200 academic members of TIET staff, 100 Postdoc or PhD students would be working in these centers during the next five years.

Some of other initiatives that will be taken to build research capability include:

- The institute will promote interdisciplinary research among faculty members by creating research groups and offering enhanced incentives for the same. TIET will also recruit eminent faculty members in the existing strong areas as well as the new schools at the institute, focused on undertaking research and providing suitable guidance. TIET will encourage its faculty to regularly collaborate and research areas concerning the society. The institute will support faculty in publishing their material in peer-reviewed journals.
- The institute will adopt the mentor model for developing individual research capabilities and improving research quality across levels.
- TIET will attract adjunct faculty from global institutes and the industry for conducting research in complementary areas. The institute will incentivize faculty to expand individual networks and undertake joint projects with collaborators from other geographies and countries as well.
- Over the next five years, the institute will build cutting-edge research infrastructure, invest in required equipment, and provided the needed facilities to conduct the research targeted for this period.
- The institute will also procure high-end application instruments to strengthen the present research facilities in phased manner. The institute will invest in cutting-edge research facilities as well.

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- TIET will conduct an internal annual competition for research funding across identified areas – allowing participants to develop focused research plans and success indicators to seek a suitable quantum of funding
- TIET will also create an IPR center to facilitate and provide suitable guidance for patent filing and patent commercialization
- **Center for Excellence in Emerging Materials**

Three thrust areas have been finalized under Center for excellence in Emerging Materials including

- Coal derived graphene.
- Bio X;
- Composites.

A total of 36 projects are running under the center. The projects include 24 regular projects funded by the center and remaining as seed money projects offered by TIET. A total of 49 faculty members are involved in the activities at the center. In the last one year, the center has publication in 10 SCI refereed journals, and secured an extramural grant of Rs. 171. 58 lakhs from DST, ICMR and CSIR.

- **Center for Excellence in Food Security**

A total of ten different projects have been allocated under the TIET-TAU Center of Excellence for Food Security been undertaken by 18 different faculty members. The center has published 8 SCI refereed journal papers in the last academic year. The center also secured a project on Food Security from Intel worth 44.0 Lakhs.

Frontier Research Areas



Figure 6: Projects at CoE Food Security

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- **Center for Excellence in Advanced Manufacturing**

Prof. Millet Shamir (Vice President, Tel-Aviv University, Israel) and Prof. Prakash Gopalan (Director, TIET) signed an MoU for Center for Excellence in Advanced on 4th April 2022 v under the Chair professorship of Prof. Noam Eliaz, Professor School of Engineering, Tel-Aviv University, Israel.

- **Center for Excellence in Data Sciences**

Further, discussions are on for setting up a Center of Excellence in **Data Sciences led by a Chair Professor** from University of Queensland, Australia. An agreement has been made where TIET faculty from Computer Science and Engineering department can visit University of Queensland as **post docs**.

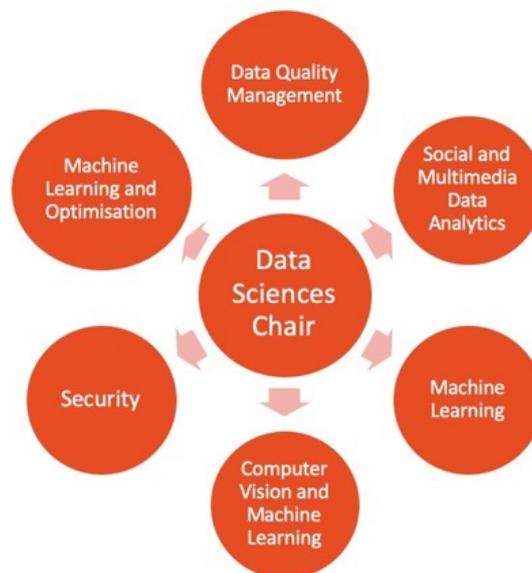


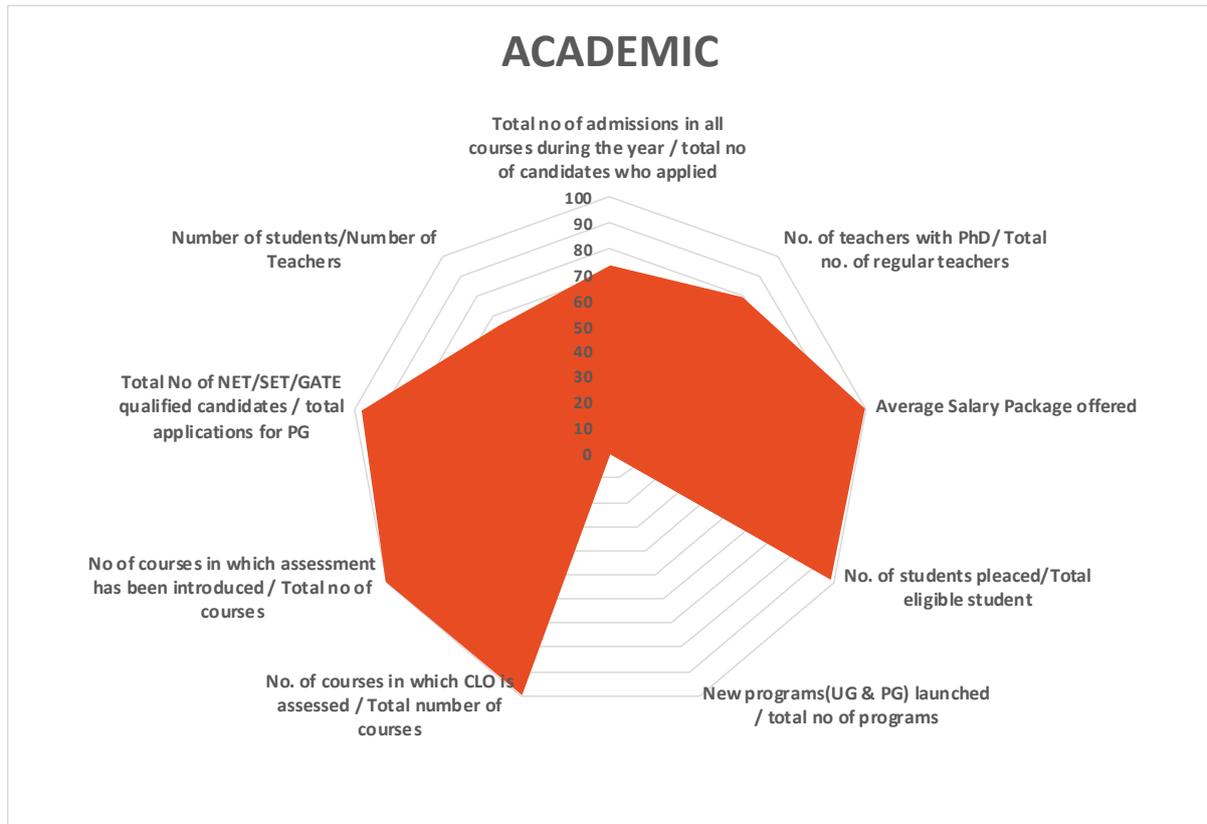
Figure 7: Thrust areas for CoE in Data Sciences

- **TIET Post-doctoral Program**

TIET started a post-doctoral support program in 2017. Since then, around 26 faculty members have availed this facility. In 2020, 4 faculty members visited Trinity College Dublin, 3 at Tel-Aviv University and one at Virginia Tech University (VT). Their progress is being reviewed periodically. Few more post-doc opportunities at Virginia Tech and University of Queensland have been explored. University of Queensland and Tel-Aviv University has agreed to share 25% sponsorship cost to these post-docs.

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Academic Indicators



Admissions 2020-21

The Institute received a total of 24510 applications for 3330 seats indicating the demand ratio as 1:7.4. The Institute has set a target of 1:10 for the demand ratio, which is around 74% achieved. The Institute has 95.7% teachers who are PhD qualified.

UG, PG and Overall

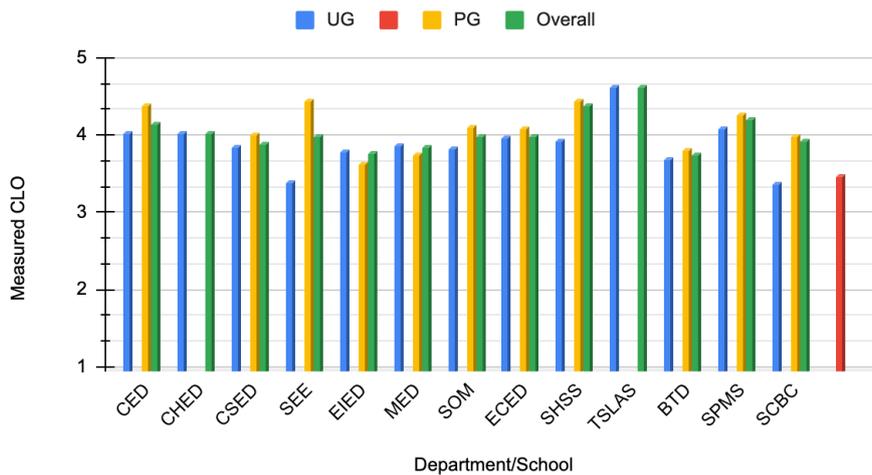


Figure 8: Achieved Course Learning Outcome of First Semester of 2021-22

All UG and PG programs have been transformed into outcome-based education, where every course learning outcome is measured throughout the year. The Institute has setup a minimum threshold for course learning outcomes as 3.5. More than 90% have achieved this target

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value. The courses that have the attainment less than 3.5 were asked to submit an action taken report/plan for improvement.

Placements 2020-21

In academic year 2021-22, 352 companies visited TIET for the recruitment of UG & PG students till date. Of the students from BE/BTech branches who were eligible and had opted for campus placements 1446 were placed and having 1568 offers. In BTech Bio-Tech 21 out of 40, Civil 18 out of 56, Chemical 11 out of 23, Computer Science 716 out of 784, Electronics and Communication 160 out of 196, Electronics & Computers 161 out of 186, Electrical 57 out of 68, Electronics Instrumentation & Control 24 out of 33, Mechanical 151 out of 237, and Mechatronics 18 out of 33 got placed through campus placement till date. The overall placement percentage of all eligible students of UG courses is around 89%. Apart from UG branches, 122 master students (MCA, ME, MTech, MSc, MA) also got placement through campus interviews, making it 42% overall in PG courses. Hence total numbers of offers received are 1568. Many organizations have extended the internship periods for the students due to pandemic and these students are likely to get offer in the coming times. The above data is updated till 25th April. 2022.

Table 1: Placement records

Academic Year	Companies Visiting	Number of students placed			
		Single Offer	Multiple Offer	Total Placed Students	Total Offer
2016-2017	268	860	169	1029	1213
2017-2018	322	934	203	1135	1345
2018-2019	332	1174	75	1249	1324
2019-2020	347	969	126	1095	1221
2020-2021*	417	1096	118	1214	1332
2021-2022*	352	1324	122	1446	1568
*Till 25.04.2022					

Apart from regular visitors, organizations visited the campus for first time for campus interviews. The first timers are Gameskraft, Cloud Mentor, Docquity, Colgate-Palmolive (India) Limited, Filo, McKinsey & Company, Mamaearth, Tata Power Limited, Hindustan Unilever, NTT DATA Corporation, Delhivery Pvt Ltd, Zibal Technologies Pvt. Ltd., Tata Technologies, Samsung SDS India, Barco Electronic Systems Pvt. Ltd., AB InBev, Convene India Private Limited, Strategic Research Insights, Indian Oil Corporation Limited, PharmEasy,

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Providence Global Innovation Center, HealthHEHR, Telecom Regulatory Authority of India, GEP Worldwide, AuthBridge, AMD (Advanced Micro Devices, Inc.), Bain & Company, Indegene, Hashedin Technologies, Philips Innovation Centre, HUVIAiR Technologies Private Limited, Max Speciality Films Ltd.



Figure 9: Major Recruiters

CAPSL 2021

- a. **New Directions Program (NDP):** A new batch of new directions program (NDP) has started from 6th September 2021 for a week. The program runs for full semester till March 2022 and will continue for another 3-4 subsequent rounds of one week engagement of faculty members. There are 72 participants in the 6th batch of NDP, which has been divided into 4 groups. The faculty members will undergo 5 core modules, 5 Fellow optional (FO) and 3 CAPSL optional Modules during NDP.

Table 2: Modules of NDP 2021

<u>Core Modules:</u>	<u>FO Modules</u>	<u>CAPSL optional Modules</u>
<u>Student Centric Learning</u>	<u>Peer Observation of teaching</u>	<u>Creativity</u>
<u>Assessment</u>	<u>Project based learning</u>	<u>Group work</u>
<u>Curriculum</u>	<u>Fostering self-regulated learning</u>	<u>Evaluated teaching</u>
<u>Reflection</u>	<u>Research integrated teaching</u>	

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Outcome based Approach

Learning and feedback skills of students through self and peer assessment

- b. **Advanced Program in Teaching and Learning 2021:** The advanced program in teaching and learning (ADP) focuses on professional development and integrating teaching, learning in an online environment. The whole program is designed by Thapar Trained Academic Fellows with inputs from Trinity College, Dublin and TIET academicians. The program is research-informed and is practice-based. A total of 47 different faculty members have successfully completed this course. There are nine modules offered in the course spanning three months. The modules include:
- i. Design of E-Content.
 - ii. Content Authoring tools.
 - iii. Modes and components of online assessment.
 - iv. Pedagogy and best practices of online teaching.
 - v. Enhancement of student motivation and online engagement.
 - vi. Student engagement.
 - vii. Approaches to conduct labs in an e-learning environment.
 - viii. Accreditation.
 - ix. Workshops on open and institutionally supported LMS.



IQAC of Thapar Institute of Engineering and Technology Patiala organized two days NAAC sponsored National workshop on “A Paradigm shift from Content based to Outcome based Education” during 26-27th August 2021. The workshop hosted various participants from 20 different states of India. The workshop was inaugurated by AICTE chairman Prof. Anil Sahasrabudhe.

Student Satisfaction Survey

An annual student satisfaction survey has been conducted by the Institute over all the existing students. 2550 students participated in the survey. The survey measured satisfaction of students related to academics, research, and governance. The survey results are available at <https://drive.google.com/file/d/156EeFe6wrsS3BnQTSw7vL8UceiBXP2Jk/view?usp=sharing>

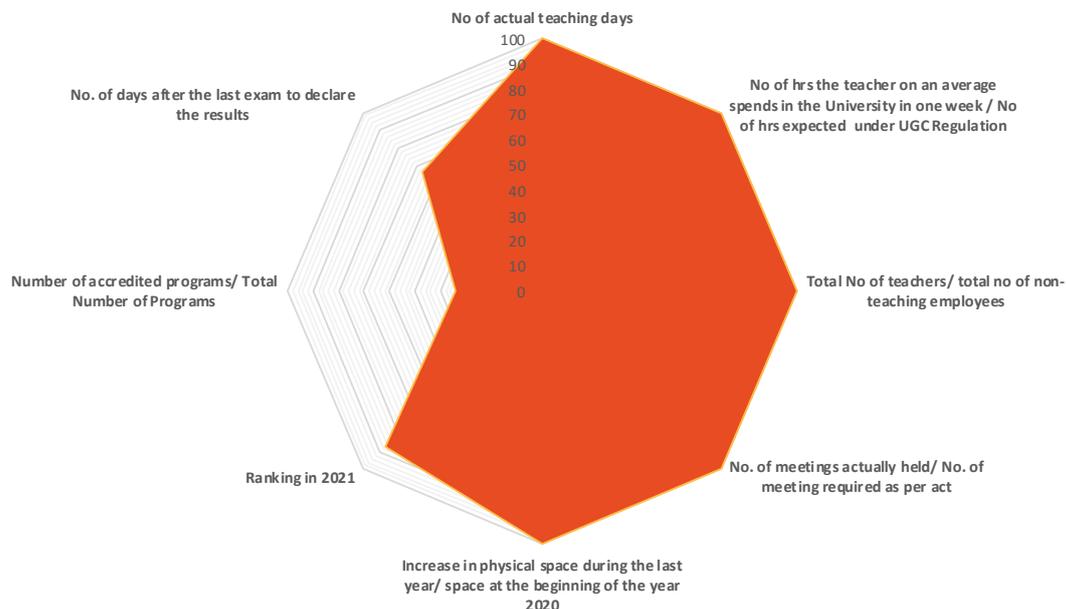
Governance Indicators

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GOVERNANCE



Dean of Academic affairs reported a total of 180 days of teaching during 2020-21. The Institute took an average of 25 days for publishing the result from last day of examination. Most of the UG programs are either NBA or have applied for renewal. Five UG programs have applied for ABET re-accreditation. At this point none of the PG program are accredited. IQAC advised all the heads of programs to apply for accreditation of eligible PG programs during next two years.

Rankings and Accreditations



- ❖ Ranked in 501-600 bracket worldwide
- ❖ Ranked 5th amongst 71 Indian Institutions ranked

Subject Rankings

Engineering :

- 401-500 bracket worldwide (last year 501-600)
- Joint 3rd in India (Last year joint 12th in India)

Computer Science :

- 301-400 bracket worldwide (last year 251-300)

Physical Sciences:

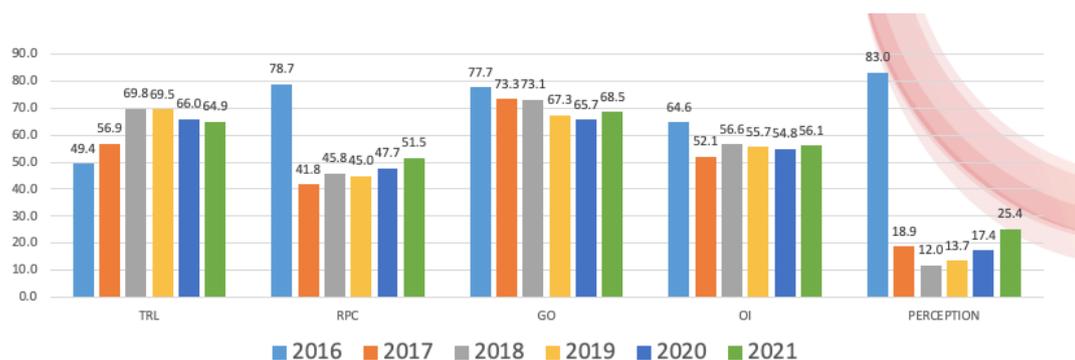
- 401-500 bracket worldwide



- **Worldwide** – Ranked in 251-260 bracket worldwide (last year in 261-270 bracket)
- **India** – Ranked 32nd in India along with NIT Trichi
- **In Private Institutions** – 4th in India (after BITS, VIT & Manipal)

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NIRF Ranking



NIRF Ranking 2021

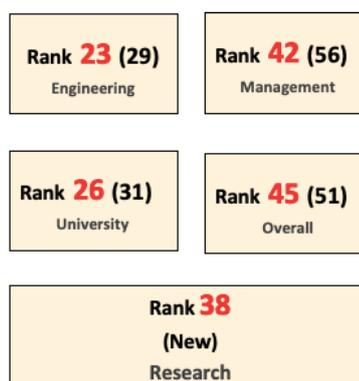


Figure 10: Section-wise scores in NIRF Ranking 2021

Key Action Points

- **Research**

Action Point	Responsibility	Target Date
It was observed that the number of Scopus publications in the last few years have declined on the basis of number of papers per faculty. Similarly, the number of Book chapters / Scopus conference publications by faculty members are also not growing. The members of IQAC advised Dean Faculty affairs to suggest appropriate ways to incentivize all the research metrics such as publications, projects, patents etc. DoFA to present during the next meeting.	DoFA	February 2022
IQAC noted with concern, some patents published during the year do not show TIET as first party for registration of patents. The committee advised that every patent application should be filed as TIET patent policy Version 2.0(Section 3.6, 3.7 & 3.8). The policy is available at	DoRSP	With immediate effect

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<p>https://www.thapar.edu/upload/files/TIET-IPR%20Policy%20Ver.2%20-%20Aug%202021.pdf</p> <p>Adhering to this policy is a must.</p>		
<p>Increase the number of stipendiary students for research. To develop a proposal for rationalizing the fee applicable for PhD students inline with peer institutions. IQAC coordinator to present a proposal in the next meeting.</p>	Deputy Director	February 2022
Academics		
<p>The IQAC members advised that the departments are not organizing enough conferences/workshop courses/ short-term courses during the year. It was agreed at least four conferences/workshops/short-term courses/external training programs per academic unit. The members advised to form a committee to formulate policies for increasing the number of conferences.</p>	Head of Departments/ Schools	With immediate effect.
<p>The students' representatives pointed out that the 1st and 2nd year students are not getting any carrier guidance in their programs. The committee advised that all the Heads of Programs should hold regular meetings with the students to guide them about the carrier in respective programs. The Center for Training and Development should also make carrier guidance programs for 1st and 2nd years students.</p>	Head of Academic Units / CTD	January 2022 and to be continued every semester
<p>The committee members raised concerns about low salary packages for PG students. The core sector placement has also been affected due to pandemic. It was advised that Head CILP to investigate and submit his findings.</p>	Head CILP	February 2022
Governance		
<p>It was advised that all eligible UG and PG programs should also apply for NBA accreditation as soon as possible.</p>	Heads of Academic Units	Over next two years
<p>The results must be declared within 15 days from last day of examination.</p>	DoAA	From Current semester

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The committee advised to form a task force for improvement of Institute perception score.	DoFA	February 2022
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The committee also approved the following targets in the three categories of Research, Academics and Governance academic year 2021-22.

Research Indicators

S No	Indicators	Method of Computation	Benchmark value
a)	No of SCI research publications per teacher per year	Number of Research Publications / No of teachers	3
b)	Research grant received per eligible teacher per year	Total research grant received in 2020-21 / No of eligible teachers	2.0 lac per eligible teacher per year
c)	Research students per teacher per year	Total no. of research students / Total faculty	2.5 per year per teacher
e)	Percentage of Departments getting departmental support from various agencies like UGC, SAP, DST, COSIST etc.	Total no of depts. who got support / Total no of departments	20%
g)	Citation Index	Average citation per item on web of science	20
h)	Number of Patents published or awarded	Number of patents	60
i)	Percentage of full time research scholars	Total no of full time research scholars / Total no of research students	80%
j)	Percentage of research students getting research fellowship	No. of research students getting fellowship/ Total no. of full time research scholars	80%
k)	University H Index	Web of Science	110

Academic Indicators

S No	Indicators	Method of Computation	Benchmark value
a)	Demand Indicator	Total no of admissions in all courses during the year / total no of candidates who applied	1:10

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b)	Percentage of teachers having Ph.D.	No. of teachers with PhD/ Total no. of regular teachers	100%
c)	Average no of activities like Workshops, Seminars, Symposia, Conference conducted / year	Number of Workshops/ seminars/ conferences conducted during the year	60 / year
d)	Average Salary Package offered to UG students	Average Salary Package offered	Rs. 12 Lacs CTC
e)	UG Placements PG Placements	No. of students placed/Total eligible student	90% 60%
f)	New programs introduced in last year	New programs (UG & PG) launched / total no of programs	5%
g)	Assessment of Course learning Outcomes	No. of courses in which CLO is assessed / Total number of courses	100%
i)	Assessment of teachers by students	No of courses in which assessment has been introduced / Total no of courses	100%
k)	Number of NET/SET/GATE qualified students	Total No of NET/SET/GATE qualified candidates / total applications for PG	50%
l)	Faculty STR	Number of students/Number of Teachers	1:15

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Governance Indicators

S No	Indicators	Method of Computation	Benchmark value
a)	Actual teaching days per year	No of actual teaching days	180
b)	Minimum workload of teachers	No of hrs the teacher on an average spends in the University in one week / No of hrs expected under UGC Regulation	40 hrs
c)	Teaching – Non teaching ratio	Total No of teachers/ total no of non-teaching employees	1:1.25
d)	Regular meeting of Institute bodies like council, senate, BOG, BOS, etc	No. of meetings actually held/ No. of meeting required as per act	100%
e)	Percentage increase in physical infrastructure	Increase in physical space during the last year/ space at the beginning of the year 2020	10%
f)	NIRF Ranking	Ranking in 2021	Top 20
g)	NBA or ABET accreditation	Number of accredited programs/ Total Number of Programs	70%
h)	Final result declaration	No. of days after the last exam to declare the results	15 days

Targets 2025

Excellence in Teaching & learning

- Train and certify all faculty in academic practices
- Continually improve the learning outcome score (minimum 3.5 on a scale of 5)
- All undergraduates in engineering will participate in one or more of the following: competitive project teams, internship, research project, outreach
- Curricula continuously accredited by NAAC, NBA or ABET
- Increase student satisfaction with academic and mentor support for developing their graduate attributes and employability (Current campus employability 90%)

Excellence in Research

- 2500 peer reviewed publications per year in Scopus by 2025; 2000 in web of science every year by 2025
- Establish six research centres in the next five years (major defined as 10+ faculty, Rs 5 crore research funding and >20 funded graduate students)
- Increase the average number of PhD students per member of academic staff to at least 2.5 students.

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- Increase our score for the citations-based measure on web of science at 15 citations per paper.
- To cross 20cr sponsored project funding by 2025.

Outstanding student experience

- Recruit at least 80% of our UG students from the top 20% All India JEE scores or 10+2 scores
- Increase the student numbers to 15000 by 2020 (current: 10000)
- Invite at least 700 employers on campus for student recruitment
- Improve the student placement from campus to 100% of all eligible students
- Organize career fairs and industry tech talks
- Hire a branding partner and use social media tools for brand enhancement

Human Resource Development

- Developing recruiting best practices to attract talent.
- Improve the teacher-student ratio to 1:15.
- One successful high-impact senior faculty recruitment per year.
- Increase our number of international applications for academic posts.

World class infrastructure

- Construct the 2nd phase of academic buildings and new student residences by 2024.
- Modernize the existing academic buildings by 2025.
- Upgrade and modernize the remaining labs by 2025.

Partnering for impact

- 2nd phase of the contemporization program for 2021-2025 with major focus of research.
- Improve number of our research publications which are collaboratively co-authored with other institutions.
- Increase our number of students on joint programmes to 100.
- Develop more joint programs with partners abroad.

Innovative & entrepreneurial

- 20 start-up companies by 2025 functional from our venture lab.
- 10-15 invited speakers on entrepreneurship every year.
- Two venture lab weekend activities every year.

The meeting ended with vote of thanks to the chair and a cup of tea.