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<td>Prof. T.V.Geetha</td>
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REPORT ON THE TRAINING PROGRAMME

"IMPORTANCE OF ASSESSMENT, ACCREDITATION AND RANKING IN HIGHER EDUCATION INSTITUTIONS"

The Training Programme on "IMPORTANCE OF ASSESSMENT, ACCREDITATION AND RANKING IN HIGHER EDUCATION INSTITUTIONS", for IQAC/ NIRF/ NBA/ IOE Coordinators of University Departments, Anna University was conducted during 27th and 28th November, 2018. About 43 participants from the University Departments and Centres of Anna University attended the programme.

Prof. M.K. Surappa, Vice Chancellor of Anna University inaugurated the training programme. Prof. J. Kumar, Registrar of Anna University delivered the presidential address. Dr. T. Thyagarajan, Director- IQAC & convener, welcomed the participants. Dr. Sabitha Ramakrishnan, Deputy Director – IQAC & Coordinator, briefed the participants about the training programme schedule. Mrs. R. Rajeswari, SAP Campus Coordinator – IQAC & Coordinator acted as the Master of Ceremony.

The two-day Training Programme had 8 sessions of one-and-half hours duration each, covering the following were the topics covered during the 2 days of the Seminar:

- Dr. T. Thyagarajan: (i) Paradigm Shift in NAAC Assessment and Accreditation (ii) Global & National Ranking Framework - QS & NIRF
- Dr. S. Thamarai Selvi: Research and Innovation Trends for Sustainable Growth for Smart Society
- Dr. T.V.Geetha Towards Quality in Education – The Teaching Perspective "
- Dr. Sabitha Ramakrishnan: (i) Role of IQAC in Quality Assessment (ii) Best Practices towards Institutional Excellence – A Case Study
- Dr. M. Kantha Babu: Current Trends in Intellectual Property Rights & Innovation
- Dr. J. Prakash, Professor & Head, Dept. of Instrumentation Engg, MIT Campus: " Assessment and Accreditation – NBA perspective "
- Dr. T. Thyagarajan, Director - CUIC / IQAC on "Effective Documentation and Presentation"

Dr. K.P.Jaya delivered the valedictory address and also distributed the Certificates to all the participants. During the feedback section, the participants gave a good feedback about the topics, resource persons, course material and over all arrangements made by the organizers. The participants were provided registration kits and course material (soft copy) of the lectures. Lunch and refreshments were served to the participants on both days.
SUBMITTED TO VICE CHANCELLOR

Esteeeded Sir,

Sub: Conduct of Two days Training Programme for Teaching Staff - Approval Requested – Reg.

Ref: Minutes of Sixth EC meeting held on 25.09.2018

*****

With reference to the above, the Internal Quality Assurance Cell (IQAC) is planning to organize two days training Programme on “Importance of Accreditation and Ranking in HEI” on 27.11.2018 and 28.11.18 from 9.00 am to 4.30 pm, CUIC Mini Auditorium. The approximate expenditure involved is Rs.94,500/- (Rupees ninety four thousand five hundred only). The break-up is as follows:

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Items</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Registration Kit</td>
<td>2,500</td>
</tr>
<tr>
<td>2</td>
<td>Refreshments</td>
<td>2,000</td>
</tr>
<tr>
<td>3</td>
<td>Banner</td>
<td>1,500</td>
</tr>
<tr>
<td>4</td>
<td>Working Lunch</td>
<td>15,000</td>
</tr>
<tr>
<td>5</td>
<td>Certification</td>
<td>2,500</td>
</tr>
<tr>
<td>6</td>
<td>Honorarium for Resource Persons@ Rs1500/- per session</td>
<td>12,000</td>
</tr>
<tr>
<td>7</td>
<td>Honorarium for Coordinators@ Rs2,500/-</td>
<td>5,000</td>
</tr>
<tr>
<td>8</td>
<td>Hall Charges</td>
<td>54,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>94,500</strong></td>
</tr>
</tbody>
</table>

It is submitted for the approval of the following:

1. **To conduct the Two days Training** titled “Importance of Assessment, Accreditation and Ranking in HEI” on 27.11.2018 and 28.11.18, for the benefit of Teaching staff of Anna University.

2. **To utilize the funds available under the head of account IQAC - Training Programmes** towards the conduct of the above training programme.

3. **To upload the training brochure in the Anna University website** through RCC.

4. To use the CUIC Mini Auditorium on payment basis

**DIRECTOR, IQAC**

**REGISTRAR**

**VICE-CHANCELLOR**
CIRCULAR

Sub: IQAC-Conduct of Two-Day Training Programme on “IMPORTANCE of ASSESSMENT, ACCREDITATION and RANKING in HEI”
Ref: Vice Chancellor’s approval dated. 08.11.2018

*****

With reference to the above, the Internal Quality Assurance Cell (IQAC) is organizing a Two-day Training Programme on “IMPORTANCE of ASSESSMENT, ACCREDITATION and RANKING in HIGHER EDUCATION INSTITUTION” (HEI) during 27th November & 28th November 2018 from 9.00 am to 5.00 pm, in CUIC Mini Auditorium for the benefit of Coordinators of University Departments/Centres who are carrying out IQAC, NIRF, NAAC, NBA & IOE related works. The following are the Coordinators of the Two-day Training Programme.

COORDINATORS: Dr. Sabitha Ramakrishnan, DD-IQAC (9445672241) and
Ms R.Rajeswari, IQAC SAP-Campus Coordinator (9884492200)

All the Deans, COE, EO, ACOE-UD, Centre Directors, HODs are requested depute the respective Department/ Centre Coordinators who are carrying out the IQAC, NIRF, NAAC, IOE & NBA related works to attend the Two-Dy Training Programme. The detailed schedule and brochure are enclosed.

Further details can be had from Prof. T. Thyagarajan, Director-IQAC (9444104850) /22357027

Encl: Registration form & Programme Schedule.(P.T.o)
To All the Deans, COE, HODs, Centre Directors, ACOE-UD, E.O & DR- Personnel
Copy to Director- IQAC
PA to Registrar
P.S. to Vice Chancellor
Training programme on
IMPORTANCE of ASSESSMENT, ACCREDITATION and RANKING in HIGHER EDUCATION INSTITUTIONS
27.11.2018 & 28.11.2018

REGISTRATION FORM

1. Name : 
2. Age & Sex : 
3. Designation : 
4. Department : 
5. Qualification: 

7. Address for Communication: 
   Phone / Mobile: 
   E-mail: 

Date Signature of the applicant

SPONSORSHIP CERTIFICATE
Dr./Mr/Ms. ____________________________ working as ____________________________ in the Dept of ____________________________
is sponsored to attend the training programme on "Importance of ASSESSMENT, ACCREDITATION and RANKING in HIGHER EDUCATION INSTITUTIONS" during 27.11.2018 & 28.11.2018, organized by IQAC, Anna University, Chennai.

Date: Signature of Sponsoring Authority & Seal

REGISTRATION FEE
NO REGISTRATION FEE will be charged. The completed Registration form may be submitted to the CONVENER-IAAR, not later than 24.11.2018. The scanned copy of the form may be mailed to iqac@annauniv.edu. The selection intimation will be sent by e-mail on 25.11.2018.

ADDRESS FOR COMMUNICATION
DIRECTOR-IQAC & CONVENER-IAAR,
Internal Quality Assurance Cell,
Anna University, Chennai 600025,
Ph: 22357027, 9789977989
Email: iqac@annauniv.edu

Training programme on
IMPORTANCE of ASSESSMENT, ACCREDITATION and RANKING in HIGHER EDUCATION INSTITUTIONS
(for faculty members of University Departments, Anna University)
27.11.2018 & 28.11.2018
(9.00 A.M to 5.00 P.M)

Convener:
Dr. T. THYAGARAJAN,
Director - IQAC

Coordinators:
Dr. SABITHA RAMAKRISHNAN
Deputy Director – IQAC
Mrs. R. RAJESWARI
SAP Campus Coordinator - IQAC

Organized by
Internal Quality Assurance Cell,
Anna University, Chennai-600025.
INTERNAL QUALITY ASSURANCE CELL (IQAC)
ANNA UNIVERSITY, CHENNAI

TRAINING PROGRAMME
on
IMPORTANCE of ASSESSMENT, ACCREDITATION and RANKING
in HIGHER EDUCATION INSTITUTIONS
(for IQAC/NIRF/NBA/NAAC/IOE Coordinators of University Departments, Anna University)

27.11.2018 & 28.11.2018
Venue: CUIC Mini Auditorium, CEG Campus, Anna University

Dr. SABITHA RAMAKRISHNAN & Mrs. R. RAJESWARI
COORDINATORS

Dr. T. THYAGARAJAN
CONVENER
# Internal Quality Assurance Cell (IQAC), Anna University, Chennai-25.
## Two-Day Training Programme on "Importance of Assessment, Accreditation and Ranking in Higher Education Institutions"
### 27th & 28th Nov 2018
### Programme Schedule

<table>
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<tr>
<th>Date (Day)</th>
<th>Session I 9.30 – 11.00</th>
<th>Session II 11.15 – 12.45</th>
<th>Session III 1.30 – 3.00</th>
<th>Session IV 3.15 – 4.45</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.11.2018 (Tuesday)</td>
<td>Registration &amp; Inauguration (9.00 - 9.30) Dr. T. Thyagarajan, Director - IQAC &amp; CUIC</td>
<td>Paradigm Shift in NAAC Assessment and Accreditation</td>
<td>Research and Innovation Trends for Sustainable Growth for Smart Society Dr. S. Tamarai Selvi, Director - CTDT</td>
<td>Towards Quality in Education – The Teaching Perspective Dr. T.V. Geetha, Dean - CEG</td>
</tr>
<tr>
<td>28.11.2018 (Wednesday)</td>
<td>Current Trends in Intellectual Property Rights &amp; Innovation Dr. M. Kantha Babu, Director - CIPR</td>
<td>Tea Break</td>
<td>Best Practices towards Institutional Excellence – A Case Study Dr. Sabitha Ramakrishnan, Deputy Director - IQAC.</td>
<td>Lunch Break</td>
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<td>Assessment and Accreditation – NBA perspective Dr. J. Prakash, Prof. &amp; Head, Dept. of Instrumentation Enng, MIT Campus</td>
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Convener: Dr. T. Thyagarajan  
Coordinators: Dr. Sabitha Ramakrishnan  
Mrs. R. Rajeswari
You are cordially invited to the
Inauguration of the Two-day Training Programme on

IMPORTANCE of ASSESSMENT, ACCREDITATION and
RANKING in HIGHER EDUCATION INSTITUTIONS

(for IQAC/NIRF/NBA/IOE Coordinators of
University Departments, Anna University)

on

27.11.2018 (Tuesday) at 9.00 AM
Venue: CUIC Mini Auditorium, CEG Campus

Prof. Dr. M.K. SURAPPA
Vice Chancellor, Anna University

inaugurates

Dr. J. KUMAR
Registrar, Anna University

presides

Dr. Sabitha Ramakrishnan
Mrs. R. Rajeswari
Coordinators

Dr. T. Thyagarajan
Convener

(Programme Overleaf)
INAUGURAL FUNCTION

PROGRAMME

9.00 AM    Invocation

9.02 AM    Welcome Address
            Dr. T. Thyagarajan
            Director, IQAC & Convener

9.05 AM    About the Training Programme
            Dr. Sabitha Ramakrishnan
            Deputy Director, IQAC & Coordinator

9.10 AM    Presidential Address
            Dr. J. Kumar
            Registrar, Anna University

9.15 AM    Inaugural Address
            Dr. M.K. Surappa
            Vice Chancellor, Anna University

9.25 AM    Vote of Thanks
            Dr. R. Rajeswari
            IQAC – SAP Campus Coordinator
The Internal Quality Assurance Cell of Anna University IQAC has the following two main objectives:

- To develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the University.
- To promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.

Accordingly the main functions of IQAC include the following:

1. Development of Quality Culture
2. Acting as a nodal agency of the Institution for coordinating quality-related activities such as NAAC, NBA, NIRF and IOE
3. Creation of quality benchmarks/parameters for various academic and administrative activities of the institution
4. Facilitating academic audit
5. Reviewing the procurement of R & D funding and its utilization
6. Facilitating the publication of Research Journal
7. Dissemination of information on various quality parameters of higher education
8. Documentation of the various activities leading to quality improvement
9. Preparation of the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC, to be submitted to NAAC
10. Conduct of inter- and intra- institutional Workshops, Seminars, Training programmes on quality related themes for the benefit of all the stakeholders.

I am happy to note that similar to earlier years, this year also, the IQAC has planned for conducting training programmes for the benefit of admin staff, technical staff, and teaching staff and for the academic leaders. The Training Programme on “IMPORTANCE OF ASSESSMENT, ACCREDITATION AND RANKING IN HIGHER EDUCATION INSTITUTIONS”, on 27th and 28th November, for the benefit of IQAC/ NIRF/ NBA/ IOE Coordinators”, followed by a Training Programme for Non-Teaching Staff Members is planned for 4th of December.

It gives me great pleasure to preside over the inaugural function for this Training Programme on “IMPORTANCE OF ASSESSMENT, ACCREDITATION AND RANKING IN HIGHER EDUCATION INSTITUTIONS”, and I congratulate the Director- IQAC and his team for the efforts taken by them for organizing such Training programmes for the benefit of University Staff. I wish the programme a grand success.
A very good morning to one and all present for the inaugural ceremony of the Training Programme on "IMPORTANCE OF ASSESSMENT, ACCREDITATION AND RANKING IN HIGHER EDUCATION INSTITUTIONS", for IQAC/ NIRF/ NBA/ IOE Coordinators of University Departments, Anna University conducted by the Internal Quality Assurance Cell, Anna University. It gives me great pleasure to greet each one of you for gracing this function. The dignitaries may please take their places on the dais. We shall begin today’s programme with the invocation song. I request everyone to please rise.

[INVOCATION SONG]
Thank you, you may please take your seats. I request Prof. Dr. T. Thyagarajan, Director, IQAC and Convener of this training programme, to deliver the Welcome Address.

[WELCOME ADDRESS]
Thank you, Sir, for the warm words of welcome.
Dr. Sabitha Ramakrishnan, Deputy Director-IQAC and Coordinator, shall give an overview of the Training Programme.

[ABOUT THE TRAINING PROGRAMME]
Thank you, ma’am, for presenting the highlights of the Programme. I would like to now invite our esteemed Registrar, Dr. J. Kumar, to please deliver the Presidential Address.

[PRESIDENTIAL ADDRESS]
Thank you, Sir, for the enlightening speech. May I request Prof. Dr. T. Thyagarajan, to present a memento on behalf of IQAC, to our esteemed Registrar, Dr. J. Kumar.

[PRESENTATION OF MEMENTO TO CHIEF GUEST]
Thank you, Sirs. We are indeed honored to have our Vice-Chancellor among us today to flag off this Training Programme and we now request you, Sir, to kindly deliver the Inaugural Address.

[INAUGURAL ADDRESS]
Thank you, sir, for the very engaging speech. May I request Prof. Dr. T. Thyagarajan, to present a memento on behalf of IQAC, as a mark of our appreciation and respect to our honorable Vice-chancellor, Dr. M.K. Surappa.

[PRESENTATION OF MEMENTO TO CHIEF GUEST]
Thank you, Sirs. Ms. R. Rajeswari, IQAC Campus Coordinator, SAP, shall now propose the vote of thanks to express our gratitude to all those who were involved in the conduct of this programme.
VOTE OF THANKS

Ms. R. RAJESWARI, IQAC CAMPUS COORDINATOR, SAP CAMPUS

Distinguished Dignitaries on and off the dais, I consider it a great privilege to propose the vote of thanks on this occasion. On behalf of IQAC, I take this opportunity to express our sincere thanks to our honorable Vice-chancellor, Dr. M.K. Surappa, and, for inaugurating the 2-day Training Programme on the "IMPORTANCE OF ASSESSMENT, ACCREDITATION AND RANKING IN HIGHER EDUCATION INSTITUTIONS", for the benefit of IQAC/NIRF/NBA/IOE Coordinators”.

Sir, we are privileged to have had your full support and encouragement, in all the IQAC activities, and your esteemed presence today has immensely boosted our motivation levels and elevated the importance of this event.

We would also like to thank our respected Registrar, Dr. J. Kumar, for his support and guidance throughout and for delivering the Presidential Address. Thank you, Sir, for the insightful speech.

I would also like to express my deep gratitude to our respected Director, IQAC, Prof.Dr. T. Thyagarajan, the key person to initiate this unique training programme for our administrative community. Sir, your energy and pioneering ideas are ever-inspiring and we are grateful to have your leadership in all our activities.

I would like to now extend my sincere thanks to all the speakers of this training programme who willingly and enthusiastically accepted our invitation to come share their vast experience and ideas with us. Esteemed Professors, we eagerly look forward to your sessions and hope to benefit from the same.

I further extend my hearty thanks to all the participants who have come here with the intent of improving their skills and gaining motivation. It is a pleasure to have you all with us.

I would also like to express my sincere thanks to the Director, CUIC, Dr. T.Thyagarajan, Additional Director, CUIC, Dr. Kalaiselvan, and their staff for all the support given to us including the use of this Hall with all related amenities.

Last but not the least; I would like to thank all my other colleagues from IQAC, Dr. Sabitha Ramakrishnan, Dr. K.V. Radha, Dr. S. Meenakumari and Mrs. Nivedha without whose efforts and cooperation, such a programme would not have been possible. I thank you all once again.

Prof. Surappa joined then newly established Regional Laboratory, Trivandrum in 1979 as senior scientist and worked there for two years. During 1981-87, he was Research Associate/Engineer at Drexel University (USA), Cavendish Laboratory, University of Cambridge (UK) and Swiss Federal Institute of Technology (Switzerland). He returned to the Indian Institute of Science, Bangalore, as an Assistant Professor in 1987 and rose to the position of Professor in 1998. He was Honorary Secretary of Karnataka State Council for Science and Technology during 2004-09. He was Visiting Professor to Sir M. Visvesvaraya Chair, University of Mysore (2003-04). He has served as Founder Director of Indian Institute of Technology, Ropar for a period of six years (2009-15). He served as Dean, Faculty of Engineering at the Indian Institute of Science during the year 2016-2017. He assumed the post of Vice Chancellor of Anna University on 12th April 2018. He is also Honorary Professor at the Indian Institute of Science.

Prof. Surappa has made outstanding R&D contributions to the Science and Technology of Metal Matrix Composites (MMCs). For over three decades, he has pursued many innovative investigations on synthesis, processing-microstructure-property correlation and application development of MMCs based on light alloy matrices. These include : (a) Development of "Stir Cast Process" for the fabrication of aluminium matrix composites. Process developed by Prof. Surappa at the Indian Institute of Science is often hailed as an Indian Innovation by MMC producers across the world. (b) Development of innovative technique for synthesis of metal-ceramic nano composites by in-situ pyrolysis of polymer pre-cursors in the liquid melt. He has carried out all his research work entirely in India. Prof. Surappa has published 100 research papers in International journals and presented nearly 150 papers in national and international conferences and has authored a book. He has secured one US and 3 Indian patents.

Prof. Surappa nurtured IIT Ropar as an Institution of Excellence in Research and Governance. In the 2016 National Ranking of Institutions, IIT Ropar stands number 9 amongst top 100 Engineering Institutions. It is very heartening to note that IIT Ropar ranked number one in two parameters used in ranking exercise, namely (a) Teaching, learning and Resources (TLR) and (b) Graduation Outcome (GO) amongst 16 IITs. This is testimony to the inspiring, dynamic and visionary leadership of Prof. Surappa.

Prof. Surappa was bestowed with Sir. M. Visvesvaraya award for his Life time contributions in Science and Technology from the Government of Karnataka for the year 2015. Prof. Surappa is a Fellow of Indian National Science Academy (INSA) and Indian National Academy of Engineering (INAE). In the year 2015, Karnataka State Open University honored him by awarding him Honorary degree of Doctor of Literature (D.Litt). He received Suvarna Karnataka Rajyotsava Award by the Government of Karnataka in 2006 and Prof. Rustum Choksi Award for Excellence in Research and Engineering from the Indian Institute of Science in 2007. He received AMULYA Award for Innovation in 2012 by the Government of Karnataka. He has been bestowed with Metallurgist of the Year award for the year 1998 by the Government of India. He is the recipient of MRSI Medal for the year 1997 from the Materials Research Society of India.
Dr. K. P. Jaya, Professor in the Department of Civil Engineering, Anna University, is currently the Director, Centre of Research. She has obtained her Ph.D in Structural Engineering from IIT Madras, in 2000 and has been actively engaged in Teaching and Research since then.

She is the proud recipient of Anna University Active Consultant Award 2014, which she received as part of the Teacher's Day Celebrations from Dr. A.P.J. Abdul Kalam.

She has also won several national and international fellowships and grants, such as the Ministry of HRD Fellowship for Research Studies at IIT Madras and two International Travel Grants to attend World Conference on Earthquake Engineering.

An able and dynamic leader, she has also held several additional responsibilities both in the University and in the professional field of Civil Engineering.

Her keen interest in Research in the following areas of Earthquake Engineering, Structural Dynamics, Vibration Control, Soil-Structure-Interaction and Wind Engineering has led her to spearhead several BE and ME Research projects, and sponsored Research Activities.

She has participated in several international conferences and published hundreds of papers in national and international journals and Conferences.
INTERNAL QUALITY ASSURANCE CELL
ANNA UNIVERSITY, CHENNAI, 600025, INDIA
Ph: 044-22357027, e-mail: iqac@annauniv.edu

Dr. T. Thyagarajan
Director

Lr. No. AU-IQAC/ Training/ 2018

Date:09.11.2018

To
The Director,
Ramanujan Computing Centre (RCC)
Anna University, Chennai – 25.

Esteemed professor,


Ref: Vice Chancellor’s Approval dated. 08.11.2018

*****

With reference to the above, the Internal Quality Assurance Cell (IQAC) is organizing a two-day “Importance of Assessment, Accreditation and Ranking in Higher education Institution”(HEI). The brochure for the programme is enclosed for your kind reference.

It is requested that the brochure may kindly be uploaded in our University website. An additional link with name "IQAC Training Programme for University Department’s” may please be provided for the brochure in the University Home page.

Thanking you,

Yours sincerely,

DIRECTOR, IQAC

Encl: Programme Brochure
Dr. T. THYAGARAJAN  
DIRECTOR  
Lr. No. AU-IQAC/11547/Training/IAAR/Lunch/2018  

Date: 20.11.2018

To  
Prof. P. Hariharan  
Warden, CEG Campus Hostels  
Anna University, Chennai – 25.

Dear Professor, 


Ref: Vice Chancellor’s approval dated. 08.11.2018  

****

With reference to the above, the Internal Quality Assurance Cell (IQAC) is organizing a Two-day Training Programme on “Importance Of Assessment, Accreditation And Ranking In Higher Education Institution” (HEI) during 27th November & 28th November 2018 from 9.00 am to 5.00 pm, in CUIC Mini Auditorium for the benefit of Coordinators of University Departments/Centres who are carrying out IQAC, NIRF, NAAC, NBA & IOE related works.

In this connection, it is requested that lunch may please be arranged for 50 persons during the training programme as per the following details:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Menu</th>
<th>Date</th>
<th>Time &amp; Venue</th>
<th>Qty</th>
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</thead>
<tbody>
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<td>1</td>
<td>Chapati, Kuruma, Rice, Sambar, Rasam, poriyal, kootu, Curd, Pickle, Appalam, Payasam, Banana</td>
<td>27.11.2018 (Tuesday)</td>
<td>12.45 PM</td>
<td>50</td>
</tr>
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<td></td>
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<td>CUIC Mini-Auditorium</td>
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<tr>
<td>2</td>
<td>Poori, Masala, Bisibela bath, Coconut rice, Curd rice, White rice, Rasam, Chips, Potato curry, Keerai, Pickle, Sarkarai pongal, Banana</td>
<td>28.11.2018 (Wednesday)</td>
<td>12.45 PM</td>
<td>50</td>
</tr>
<tr>
<td></td>
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<td>CUIC Mini-Auditorium</td>
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</table>

Thanks and regards,

Yours sincerely,

Dr. T. THYAGARAJAN  
DIRECTOR
To
The Manager
CEG Canteen,
Anna University, Chennai – 25.

Dear Professor,


Ref: Vice Chancellor’s approval dated 08.11.2018

With reference to the above, the Internal Quality Assurance Cell (IQAC) is organizing a Two-day Training Programme on “Importance Of Assessment, Accrediation And Ranking In Higher Education Institution” (HEI) during 27th November & 28th November 2018 from 9.00 am to 5.00 pm, in CUIC Mini Auditorium for the benefit of Coordinators of University Departments/Centres who are carrying out IQAC, NIRF, NAAC, NBA & IOE related works.

In this connection, it is requested that refreshments may please be arranged for 50 persons during the training programme as per the following details:

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<th>Venue</th>
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<tbody>
<tr>
<td>1</td>
<td>27.11.2018 (Tuesday)</td>
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<td>11.00 AM</td>
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<tr>
<td>2</td>
<td>27.11.2018 (Tuesday)</td>
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<td>11.00 AM</td>
<td>50</td>
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<td>Tea + biscuits</td>
<td>3.00 PM</td>
<td>50</td>
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</table>

Thanks and regards,

Yours sincerely,

Dr. T. THYAGARAJAN
DIRECTOR
INTERNAL QUALITY ASSURANCE CELL  
ANNA UNIVERSITY, CHENNAI, 600025, INDIA  
Ph: 044-22357027, e-mail: iqac@annauniv.edu

Dr. T. Thyagarajan  
Professor & Director

Lr. No. IQAC/ Training/IAAR/2018  
Date: 12.11.2018

To  
The Director- CUIC,  
Anna University,  
Chennai 600025.

Esteemed professor,

Sub: IQAC – Conduct of Training Programme (IAAR) - Request for  
CUIC Mini Auditorium – Reg.  
Ref: Vice Chancellor’s Approval dated. 08.11.2018

*****

With reference to the above, the Internal Quality Assurance Cell (IQAC) is organizing a  
two-day Training Programme on “Importance of Assessment, Accreditation and Ranking in  
Higher education Institution” (HEI) for IQAC/NIRF/NAAC/NBA Department coordinators of  
Anna University.

It is requested that permission may please be given to utilize CUIC mini auditorium for  
conducting the training programme on 27.11.2018 & 28.11.2018 from 9.00 A.M to 5.00 P.M.  
It may please be noted that our esteemed Vice Chancellor has waived the payment of Hall Charges.  
However the maintenance charges and electricity charges of Rs 14000/- (Fourteen Thousand Only) will be  
paid by IQAC,

Thanking you,

Yours sincerely,

Dr. T. THYAGARAJAN  
Director, IQAC

Encl: IAAR Training Programme Brochure
BRIEF PROFILE OF Dr.T.THYAGARAJAN

Dr.T.Thyagarajan obtained Ph.D. in Intelligent Control, from Anna University Chennai. With National Science Council Fellowship, he pursued Post Doctoral Research work in ‘Auto tuning’ at National Taiwan University, Taiwan.

He was the youngest HOD of the Department of Instrumentation Engineering, MIT Campus for two consecutive terms and during this period:

- Established state-of-art facilities worth Rs 4 crores
- Secured NBA accreditation for 5 years for both UG & PG programs.
- Received recognition for the Department as QIP Centre to offer PhD.

He served as the Director for University library and secured IEEE and Springer National Awards for TWO consecutive years.

He served as Director, Planning & Development for a short period.

Currently he is Director, Centre for University Industry Collaboration for the second term. Under this portfolio, he has secured SEED National award for CUIC twice (for the years 2015 and 2016). He is also serving as the Director, IQAC and he is actively involved in various activities pertaining to quality initiatives / sustenance /enhancement.

He has received several awards for his remarkable academic / research and administrative achievements. To name a few:

- Sisir Kumar National Award for publishing the best research paper
- Tamil Nadu DTE Award for guiding the best project work.
- IEEE appreciation awards for
  - outstanding mentoring from the IEEE affinity groups:
  - Distinguished Section Award for IEEE-Madras Section (when he was the Chairman) for the year 2010.
- Best Teacher award from Instrumentation Engineers Association, MIT Campus in 2015
- Rajiv Gandhi Gold Medal from GEPRA
- Dr. APJ Abdul Kalam award for research excellence from Marina Labs in 2015.
- SIIP-SEED award for his excellent Placement Coordination activities in 2016

He has authored 4 Text books for engineering students. Recently, he has written a book on and published over 100 research papers and guided 13 Ph.Ds. Two more scholars are currently pursuing research under his guidance. He has secured R&D funding worth Rs. 15 crores from various Government agencies such as DST, DIT, TEQIP and UGC. He made technical visits to USA, Europe, South Africa, Middle East and all the South East Asian countries. He has organized many national and international conferences, FDPs and workshops. He delivers invited lectures on topics related to research, academics as well as administration.

He was the NAAC Coordinator for Anna University in 2014. Under his able guidance, Anna University secured a CGPA of 3.46 / 4.0, the highest at that time, among all State Universities in Tamil Nadu.

He is also the Co-coordinator for the National Hub for Healthcare Instrumentation being established at Anna University with Rs. 12 crore funding from DST.

He is a senior member of IEEE, ISA and ISTE.
Cellphone : 0944486018

e-Mail ID : prakaiit@gmail.com

Address : Old. No.1, New No.3 4th Street VV Colony
          Adambakkam, Chennai-88

Present Position

Professor, Department of Instrumentation Engineering, Madras Institute of Technology, Anna University, Chennai from June-2012.

Present Additional Responsibility

- Head of the Department, Department of Instrumentation Engineering, Anna University, Chennai from May-2012.

Previous Positions

- Associate professor, Department of Instrumentation Engineering, Madras Institute of Technology, Anna University, Chennai during September-2006 and June-2012.
- Assistant Professor, Department of Instrumentation Engineering, Madras Institute of Technology, Anna University, Chennai during September-2003 and September-2006.

Other Employment

- READER, ANNAMALAI UNIVERSITY.

Degree

- B.E. in ELECTRONICS AND INSTRUMENTATION ENGG, Faculty of Engineering and Technology, Annamalai University (1989 - 1993).

Research Degree


Area of Specialisation
PROCESS CONTROL AMD INSTRUMENTATION

Membership in Professional Organization

- INTERNATIONAL SOCIETY OF AUTOMATION (ISA)
- INDIAN SOCIETY OF TECHNICAL EDUCATION-ISTE

Research Guidance

Papers Published in Journals

Research Papers Published in International Journals : 1
Research Papers Published in National Journals : 0

BRIEF CAREER PROFILE OF Dr. SABITHA RAMAKRISHNAN

Dr. Sabitha Ramakrishnan obtained her B.E (ECE) from College of Engineering, Guindy, Anna University with GOLD MEDAL for Academic Proficiency; M.E (Electronics) from MIT campus, Anna University and Ph.D in Wireless Sensor Networks (faculty of I&C) from Anna University. She has more than 16 years of teaching experience including 11 years R&D experience. Apart from her regular academic work, she is currently the Deputy Director of Internal Quality Assurance Cell of Anna University. She has also served as the Coordinator of Entrepreneurship Development Cell and Associate Placement Officer in erstwhile employment. She was the Organizing Secretary for the International Conference TIMA-2017 held during 6-8 January, 2017 in MIT, Anna University.

She was adjudged the Best Out-going Student in Diploma course in Govt. Women’s Polytechnic, Chennai. She also received National Merit Scholarship Scheme Certificate in her SSLC. She received the IEEE appreciation award from Chairman, IEEE Madras Section for arranging and delivering Technical Lectures as IEEE Execom Member during 2013-14. She received Dr. APJ Abdul Kalam Award for Teaching Excellence from Marina Labs R&D in 2016 and Best Quality Assurance Cell Coordinator award from SEED-India during the National 4e Summit in October 2017.

As a researcher, she has published 7 papers in international journals and 14 papers in international / national conference proceedings. She received the Best Paper Award twice in two international conferences held in 2014 and 2017. She has completed one AICTE-RPS project on Ad hoc Networks, worth Rs.12 lakhs in 2009 as co-investigator. Currently, she is co-investigator in the on-going DST funded project on Automated External Defibrillator design worth Rs.32 lakhs. She is one of the Principal Investigators under Instrumentation group in the ongoing UGC - UPE project of Anna University worth Rs. 75 crores. She received the Mentor Award from CTDT-Anna University in 2014 for guiding a Student Innovative Project on Wearable sensors. She is a reviewer for international journals including Springer, Inderscience and Elsevier. She has chaired sessions five sessions so far in international / national conferences.

As a faculty member of Instrumentation Engg - MIT, she has augmented the Electronics lab facilities by securing a special grant of Rs. 10 lakhs during 2014. She has organized 20 training programmes so far (including 3 Anna University sponsored FDPs, 1 AICTE sponsored SDP and 1 IEEE sponsored Students Workshop and 1 Pre-conference tutorial). She has delivered around 30 guest lectures in various institutions, on topics including Wireless Sensor Networks, Signal Processing and Embedded Systems.

She has made official visits to Germany and Qatar. She is a member of IEEE (Communications Society), IETE and ISTE.
Dr. M. Kanthababu received his BE in Mechanical Engineering from Coimbatore Institute of Technology, Coimbatore. He has completed MS by Research and PhD from Indian Institute of Technology Madras.

Based on his research work he had so far published more than hundred technical publications in reputed International/National Journals and Conferences and applied few Patents, Patent Design and Copy Rights. Presently, he is handling Govt. Sponsored Projects more than 1.50 Crores. He is the Principal Investigator for a DST and BRNS sponsored project and also acting as Co-ordinator of UGC Sponsored Special Assistance Programme for ‘Abrasive Waterjet Machining System’.

He has teaching and research experience of more than 25 years. Presently he is working as Professor in the Department of Manufacturing Engineering, College of Engineering Guindy, Anna University and Director, Center for Intellectual Property Rights (CIPR), Anna University, Chennai.

He is recipient of ‘Indian National Science Academy’ award. He is a life member of ISTE and Fellow of Institution of Engineers, India. He has travelled widely to countries like USA, UK, France, Spain, Singapore, Malaysia, Thailand, etc.
Dr. Thamarai Selvi – Profile

Professor, Dr. S. Thamarai Selvi is currently serving as the Director of Centre for Technology Development and Transfer.

She has a PhD in Computer Science and Engineering, and has a 34 year experience in Teaching and Research. She has guided several PhD Scholars, authored 5 books, and has been awarded 4 patents.

She has been involved in handling government funded projects worth of 30 crores in Grid, Cloud Computing and UAS.

She has the honor of having been the First Woman Dean and Warden of MIT Campus, and has served as a Syndicate Member of Anna University.

She has been instrumental in starting the M. Tech IT and M.E CSE programmes at MIT Campus and in obtaining the NBA Accreditation for UG programmes in the MIT Campus.

She has been very dynamic in establishing and maintaining Technology Collaboration with Foreign Universities and has been instrumental in establishing the Centre for Advanced Computing Research and Education (CARE) at MIT Campus.

He Social Responsibilities include the conduct of Women Empowerment programs, Disaster Management and Crowd Monitoring and Anna University Rural Development Program. In 2014, she has received the Award for Social Work from the Honorable chief Minister of Tamilnadu, for Rescue operation in Moulivakkam using UAS and Thermal Imaging Technology.

She is also the proud recipient of several awards including Abdul Kalam Seva Ratna Award, in 2015, the Anna University Technology Transfer Award, 2015, the Anna University Active Researcher Award, UNESCO-HP BGI (Brain Gain Initiative) Scholarship, Kuwait, 2012, India-UK Staff Exchange Award, the Pro- Development Initiative Grant (PDIG) from Indo-Canadian Shastri Institute, Canada, 2012-2013.
Dr. T.V. Geetha completed her B.E in Electronics and Communication Engineering her M.E. in Computer Science and Engineering and Ph.D in Natural Language Processing from Anna University.

She is Member of VC Convener Committee from Feb 2017 to till Date.

She is a Senior Professor at the Department of Computer Science and Engineering, Anna University Chennai. She is currently the Director, Academic Courses looking after academic matters of all the 540 colleges under Anna University. At present she is also working as the First Woman Dean, College of Engineering, Anna University, Guindy Campus.

She has over 262 papers in national and international journals and conferences. 20 Research scholars have completed Ph.D. and 10 scholars are undergoing Ph.D. under her guidance

She has been awarded the Young Scientist award from the Government of Tamilnadu in the year 2000, a Special Mention award from the Chief Minister of Tamilnadu in the year 2002, Honourable Mention Award for paper at CSI 1988 (paper on NLP) and the Women of Excellence award from the Rotract club in the year 2003.

She was the coordinator of a project from the Ministry of Information and Communication Technology, Government of India to produce “Specialized manpower in the area of Computational Linguistics and Knowledge Engineering”

In addition her team is one of the collaborators of a funded project Titled “Cross Lingual Information Access across Indian Languages” from the Ministry of Information and Communication Technology, Government of funding India.

She and her team have also obtained a UGC project e-pathsala for creating online content for PG courses in Computer Science with a funding of Rs.1.12 crores.
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<td>9840393229</td>
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<td>vrgiridev@yahoo</td>
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<td>Dr. G. Sumathi</td>
<td>Guest Faculty Mathematics</td>
<td>9952967600</td>
<td><a href="mailto:sumisundhar@auist.net">sumisundhar@auist.net</a></td>
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<td>9962827638</td>
<td><a href="mailto:Neela_pari@yahoo.com">Neela_pari@yahoo.com</a></td>
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<td>Dr. M. Kantha Babu</td>
<td>Professor &amp; Head Manufacturing Engineering</td>
<td>9444114691</td>
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<td>Mr. S. Venugopal</td>
<td>Associate Professor Mining Engineering</td>
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<td><a href="mailto:vennuumin@gmail.com">vennuumin@gmail.com</a></td>
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<tr>
<td>16</td>
<td>Mr. D. Edwin David Raj</td>
<td>Associate Professor Mining Engineering</td>
<td>9940152448/7769</td>
<td><a href="mailto:dedwinin@yahoo.com">dedwinin@yahoo.com</a></td>
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<td>17</td>
<td>C.Chinthamani</td>
<td>Associate Professor Ramanujam Computing Centre</td>
<td>9962013075</td>
<td><a href="mailto:chinthu@annauniv.edu">chinthu@annauniv.edu</a> (or) <a href="mailto:sindujj@gmail.com">sindujj@gmail.com</a></td>
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<td>Dr.K.S.Sivakumar</td>
<td>Assistant Library, MIT</td>
<td>8610248393</td>
<td><a href="mailto:Sivamit_kumaren@yahoo.co.in">Sivamit_kumaren@yahoo.co.in</a></td>
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<td>Mrs.K.Soundaranayaki</td>
<td>Assistant Professor Centre for Environmental Studies</td>
<td>9442903997</td>
<td><a href="mailto:Soundsriya31@gmail.com">Soundsriya31@gmail.com</a></td>
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<td>20</td>
<td>Dr. A.Merline Sheela</td>
<td>Assistant Professor Centre for Environmental Studies</td>
<td>9884216255</td>
<td><a href="mailto:merlinshasu@gmail.com">merlinshasu@gmail.com</a></td>
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<td>Dr. Thirumal Azhagan</td>
<td>Assistant Professor Production Technology</td>
<td>9962593286/6131</td>
<td><a href="mailto:thirumalazhaganm@mitindia.edu">thirumalazhaganm@mitindia.edu</a></td>
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<td>Dr. Ganesh P</td>
<td>Assistant Professor MIT</td>
<td>6368</td>
<td><a href="mailto:ganesh@mitindia.edu">ganesh@mitindia.edu</a></td>
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<td>23</td>
<td>Dr. M.Vijayakarthick</td>
<td>Assistant Professor Instrumentation Engg</td>
<td>9976995692</td>
<td><a href="mailto:vijayakarthick@mitindia.edu">vijayakarthick@mitindia.edu</a></td>
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<tr>
<td>24</td>
<td>Dr. PTV. Bhuvaneswari</td>
<td>Professor Electronic Engg</td>
<td>9884697694</td>
<td><a href="mailto:ptvmit@annauniv.edu">ptvmit@annauniv.edu</a></td>
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<tr>
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<td>Dr. M. Joy Vasantharani</td>
<td>Assistant Professor MIT</td>
<td>9444167996</td>
<td><a href="mailto:joy_mit@annauniv.edu">joy_mit@annauniv.edu</a></td>
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<td>Dr. S. Umamaheswari</td>
<td>Assistant Professor IT</td>
<td>944493377</td>
<td><a href="mailto:uma_sai@mitindia.edu">uma_sai@mitindia.edu</a></td>
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<tr>
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<td>Dr. J. Dhalia Sweetlin</td>
<td>Assistant Professor IT</td>
<td>0564156624</td>
<td><a href="mailto:jdsweetlin@mitindia.edu">jdsweetlin@mitindia.edu</a></td>
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<tr>
<td>28</td>
<td>Ms. Eliza Femi Sherley</td>
<td>Teaching Fellow</td>
<td>9884552668</td>
<td><a href="mailto:selizafemisherley@mitindia.edu">selizafemisherley@mitindia.edu</a></td>
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<tr>
<td>29</td>
<td>Dr. V. Subramanian</td>
<td>Professor Rubber and Plastic Technology</td>
<td>6329</td>
<td><a href="mailto:vsubbu@mitindia.edu">vsubbu@mitindia.edu</a></td>
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<tr>
<td>30</td>
<td>Dr. R. Vidya</td>
<td>Assistant Professor Medical Physics</td>
<td>8903253749</td>
<td><a href="mailto:vidyaj@annauniv.edu">vidyaj@annauniv.edu</a></td>
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<td>31</td>
<td>Dr. S.Manisha Vidhyavathy</td>
<td>Assistant Professor Ceramic Technology</td>
<td>9940457582</td>
<td><a href="mailto:manisha@annauniv.edu">manisha@annauniv.edu</a></td>
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<td>G.J.Bhagavathammal</td>
<td>Assistant Professor Medical Physics</td>
<td>9942948562</td>
<td><a href="mailto:selvigib@gmail.com">selvigib@gmail.com</a></td>
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<td>Dr.R.Lavanya</td>
<td>Assistant Professor Media Science</td>
<td>9840009744</td>
<td><a href="mailto:lavanya2@gmail.com">lavanya2@gmail.com</a></td>
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<td>34</td>
<td>Dr.I.Arun Aram</td>
<td>Professor</td>
<td>9729072466/8231</td>
<td><a href="mailto:arulram@yahoo.com">arulram@yahoo.com</a></td>
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<tr>
<td>35</td>
<td>G.Ramesh</td>
<td>Junior Tech Assistant Mechanical Engineering</td>
<td>9884125007</td>
<td><a href="mailto:rameshsin2012@yahoo.in">rameshsin2012@yahoo.in</a></td>
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<td>36</td>
<td>R.Srinivasan</td>
<td>Lab Assistant Mechanical Engineering</td>
<td>9841661818</td>
<td><a href="mailto:Srini-janaki@yahoo.com.sg">Srini-janaki@yahoo.com.sg</a></td>
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<td>K.K.Ravi Krishnamoorthy</td>
<td>Draughtsman G-III</td>
<td>9840265267/7652</td>
<td><a href="mailto:Kkrk1967@gmail.com">Kkrk1967@gmail.com</a></td>
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**Training Programme on “Importance of Assessment, Accreditation and Ranking in Higher Education Institutions”**  
**27th and 28th November 2018**

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<td>S. M. RAVINDRA</td>
<td>Prof Industry</td>
<td>9444936273</td>
<td><a href="mailto:ravindra@ee.annauniv.edu">ravindra@ee.annauniv.edu</a></td>
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<tr>
<td>49</td>
<td>D. THEENAHEN</td>
<td>Assoc Prof</td>
<td>9840619319</td>
<td><a href="mailto:theenahen@ee.annauniv.edu">theenahen@ee.annauniv.edu</a></td>
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<td>Dr. K. Sivakumar</td>
<td>Assoc Prof</td>
<td>9551770210</td>
<td><a href="mailto:k.sivakumar@gmail.com">k.sivakumar@gmail.com</a></td>
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<td>51</td>
<td>Dr. L. Lakshmi Narasimha</td>
<td>Assoc Prof</td>
<td>9426525654</td>
<td><a href="mailto:l.narasimha@gmail.com">l.narasimha@gmail.com</a></td>
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<td>A. Sujatha</td>
<td>Assoc Prof</td>
<td>9445286180</td>
<td><a href="mailto:sujatha@ee.annauniv.edu">sujatha@ee.annauniv.edu</a></td>
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<td>53</td>
<td>Dr. K. Naveen</td>
<td>Ceramic</td>
<td>9597813901</td>
<td><a href="mailto:naveen@ee.annauniv.edu">naveen@ee.annauniv.edu</a></td>
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<tr>
<td>54</td>
<td>J. Sanjeeva</td>
<td>Assoc Prof</td>
<td>9189316436</td>
<td><a href="mailto:j.sanjeeva@ee.annauniv.edu">j.sanjeeva@ee.annauniv.edu</a></td>
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<td>T. Thirumal Thangar</td>
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<td>9445886177</td>
<td><a href="mailto:thanat@ee.annauniv.edu">thanat@ee.annauniv.edu</a></td>
<td>R</td>
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</tr>
</tbody>
</table>

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Ms R. RAJESWARI  
COORDINATOR

Dr. SABITHA RAMAKRISHNAN  
COORDINATOR

Prof. T. THYAGARAJAN  
CONVENER
INTERNAL QUALITY ASSURANCE CELL (IQAC)
ANNA UNIVERSITY, CHENNAI

TRAINING PROGRAMME on
IMPORTANCE of ASSESSMENT, ACCREDITATION and RANKING
in HIGHER EDUCATION INSTITUTIONS

27.11.2018 & 28.11.2018

This is to certify that Dr./Mr./Ms. .................................................................

..................................................................................................................

participated in the “Training Programme on Importance of Assessment, Accreditation and
Ranking in Higher Education Institutions” organized by the Internal Quality Assurance Cell
(IQAC), Anna University, Chennai on 27.11.2018 & 28.11.2018.

Mrs. R. Rajeswari  Dr. Sabitha Ramakrishnan  Dr. T. Thyagarajan
Coordinator    Coordinator    Convener
INTERNAL QUALITY ASSURANCE CELL (IQAC), ANNA UNIVERSITY

TRAINING PROGRAMME on
“Importance of Assessment, Accreditation and Ranking in Higher Education Institutions”
27th and 28th November 2018

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<td>13</td>
<td>Any other remarks: Good and informative and it should be conducted once in a year.</td>
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</table>

Date: 28.11.2018

Name: V. SURESH
Department: A.P

Signature: [Signature]
INTERNAL QUALITY ASSURANCE CELL (IQAC), ANNA UNIVERSITY

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Date: 28.11.2018

Name: Dr. N. Gobi
Department: Textile Tech

Signature
INTERNAL QUALITY ASSURANCE CELL (IQAC), ANNA UNIVERSITY

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Date: 28.11.2018

Name: Dr. S. Arulchelvan
Department: Media Science
INTERNAL QUALITY ASSURANCE CELL (IQAC), ANNA UNIVERSITY

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Name: Y. R. Giridew
Department: Textile

Signature
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Name: [Signature]
Department: [Signature]
Acknowledgement

- United Nations Conference on Trades and Development
- Materials from Journals and Conferences
- Internet Resources

Agenda

- Global Trends
- Evolution of Smart Society
- STI for SDG
- Research Proposals
- Our research Focus
- Conclusion

Global challenges – Population growth

Shift to an Urbanised World

The Inverse Wealth Distribution Model

Richest 1% Cornered 73% of Wealth Generated in India in 2017
Global Economy Stages

1700 - 1800
Coal

1900
Oil

2000 - 2010
Digital Economy

WORLD- 4
○ People Flow
○ Materials Flow
○ Energy Flow
○ Information Flow

21st Century Dependent on Flow

2016 World GDP: 78 Trillion USD

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Country</th>
<th>GDP (in Trillion USD)</th>
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<td>18.6</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>11.4</td>
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<tr>
<td>3</td>
<td>Japan</td>
<td>4.4</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>3.45</td>
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<tr>
<td>5</td>
<td>UK</td>
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<td>6</td>
<td>France</td>
<td>2.5</td>
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<tr>
<td>7</td>
<td>India</td>
<td>2.3</td>
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<tr>
<td>8</td>
<td>Italy</td>
<td>1.8</td>
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<td>9</td>
<td>Brazil</td>
<td>1.5</td>
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<tr>
<td>10</td>
<td>Canada</td>
<td>1.45</td>
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<tr>
<td></td>
<td>Total</td>
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Top 10 Countries constitutes 64%

Source: International Monetary Fund (2017 prediction)
Gartner’s Top 10 Strategic Technology Trends for 2019

<table>
<thead>
<tr>
<th>Autonomous Things</th>
<th>Immersive Experience</th>
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<tr>
<td>Augmented Analytics</td>
<td>Blockchain</td>
</tr>
<tr>
<td>AI-Driven Development</td>
<td>Smart Spaces</td>
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<tr>
<td>Digital Twins</td>
<td>Digital Ethics and Privacy</td>
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<td>Empowered Edge</td>
<td>Quantum Computing</td>
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These are the world’s biggest economies

<table>
<thead>
<tr>
<th>Country (or dependent territory)</th>
<th>Value (in $ trillion)</th>
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<tr>
<td>United States</td>
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<tr>
<td>China</td>
<td>14</td>
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<tr>
<td>Japan</td>
<td>5.1</td>
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<tr>
<td>Germany</td>
<td>4.2</td>
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<td>United Kingdom</td>
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<tr>
<td>France</td>
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<tr>
<td>India</td>
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What is blockchain?

Blockchain is a digital ledger that records transactions or other data. The ledger is shared across many computers. Everyone within the peer-to-peer network can see all the transactions and acts as an administrator. Thus, transparency and the ability to validate is high. There's no need for a single regulator. The network reconciles transactions every 10 minutes. All the transactions reconciled in the 10 minutes is a "block".

History of Blockchain

- Bitcoin is the first popular implementation of Blockchain and is attributed for today’s Blockchain industry.
- Ethereum, Hyperledger, RChain are additional Blockchains that have been popularized.

Evolution of Blockchain Technology

- 1st generation: Store and transfer of value (e.g. Bitcoin, Ripple, Dash)
- 2nd generation: Programmable via smart contracts (E.g. Ethereum)
- 3rd generation: Enterprise blockchains (E.g. Hyperledger, R3 Corda & Ethereum Quorum)
- Next gen: Highly scalable with high concurrency (E.g. RChain)

Smart Contract

- A smart contract is a computerized transaction protocol that executes the terms of a contract.
- The general objectives are to satisfy common contractual conditions (such as payment terms, liens, confidentiality, and even enforcement), minimize exceptions both malicious and accidental, and minimize the need for trusted intermediaries.
- Related economic goals include lowering fraud loss, arbitrations and enforcement costs, and other transaction costs.

Evolution of research

- Empirical
- Theoretical
- Pragmatic
- Societal based
Idea, Creativity and Innovation

- Spark in the brain: IDEA
- Bringing idea to existence : CREATIVITY
- Making commercially viable : INNOVATION

What is innovation?

- Broad definition: The introduction of new or improved products, or of new or improved processes and organizational methods in the design, production and distribution of goods and services.
- Invention: A new, useful process, machine, improvement, etc., that did not exist previously and that is recognized as the product of some unique intuition or genius.

Types of innovation

- Technological (related to the introduction of new technologies) or non-technological (organizational, managerial or institutional).
- Incremental (through small improvements), radical (through major breakthroughs) or revolutionary (a fundamentally important new technology is created).

Models of innovation (2)

Systemic (or: networked) models
- ‘chain-linked’ model
- ‘multi-channel interactive learning model’

Models of innovation

Linear models
- science-push: basic research is the main source of innovation

market-pull: demand is the main source of innovation
**Non-Linear Model of Innovation**

- **Basic Research**
- **Applied Research**
- **Development**
- **Commercialization**

**Evolution of Innovation Models**

- **Interactive Model**
  - **1990s**
    - Latest in science & technology
    - Advances in society
    - Technology Push
    - R&D
    - Manufacturing
    - Marketing
    - Commercial Product

- **Market Pull**
- Needs in society
- and the marketplace

**A National System of Innovation**

FROM: UNCTAD, WIR 2005

**Stages of Technology Development by Innovation Effort**

- **BASIC PRODUCTION**
- **SIGNIFICANT ADAPTATION**
- **TECHNOLOGY IMPROVEMENT & MONITORING**
- **FRONTIER INNOVATION & MONITORING**

**Source:** UNCTAD, WIR 2005

**Source:** UNCTAD, WIR 2005

**Source:** UNCTAD, WIR 2005
Social Innovation is the result of the intentional work of people trying to make positive change by addressing these complex problems at the roots.

The meaning of development changes with time:

- Colonial exploitation → Rostow’s stages of growth → dependency school → trickle-down development with equity → neoliberalism
- Transition/shift – hunter-gatherer society → agrarian society → industrial society → sustainable society (?)

Holocene ≈ Anthropocene (up to 1900 for 11,700 years)

Evolution to Super Smart Society

Past
- Stone Age
- Agriculture
- Society

Present
- Industrial Society
- Information Age
- Production

Future
- Smart Society
- Society 5.0

Every thing gets smart

1. Hunting & Gathering Society
   - Sustainability
2. Agricultural Society
   - Inclusiveness
3. Industrial Society
   - Efficiency
4. Information Society
   - Power of intellect

Society 5.0
- Full use of STI
- People as the core
- Participation by all
- Shared values
  - Sustainability
  - Inclusiveness
  - Efficiency
  - Power of intellect

Smart phones
Smart Homes
Smart Cars
Smart Factories

Technology Push
Market Pull
Super-Smart Society

STI for SDG

- Science, Technology and Innovation
- Sustainable Development Goals

Development Goals

- IDG – International Development Goals
- MDG - Millennium Development Goals
- SDG - Sustainable Development Goals
Origins of MDGs

- In 2001, group of expert in UN Secretariat selected 18 targets from Sept 2000 Millennium Declaration and grouped it into 8 goals
- Objective — to reshape UN Development Agenda
- Accepted by all Heads of State at Millennium Summit
- The 8 goals refocused UN Development Agenda around poverty reduction and other ‘social goals’
- BUT... lowering ambition of Declaration and existing goals from UN mega-conferences in the 1990s

The Millennium Development Goals

Eight Goals for 2015

1. Eradicate extreme hunger and poverty
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

Goal 1: Eradicate extreme poverty and hunger
Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day
1. Poverty Head Count Ratio (percentage of population below the national poverty line)
2. Poverty Gap Ratio
3. Share of poorest quintile in national consumption
Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
4. Prevalence of underweight children under three years of age

Goal 3: Promote Gender Equality and Empower Women

Target 4: Eliminate gender disparity in primary, secondary education, preferably by 2005, and in all levels of education, no later than 2015

Indicators:
- 9. Ratio of girls to boys in primary, secondary and tertiary education
- 10. Ratio of literate women to men, 15-24 years old
- 11. Share of women in wage employment in the non-agricultural sector
- 12. Proportion of seats held by women in National Parliament

Goal 2: Achieve Universal Primary Education

TARGET 5: Ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary education.

Indicators:
- 6. Net Enrolment Ratio in primary education
- 7. Proportion of pupils starting Grade 1 who reach Grade 5
- 8. Literacy rate of 15-24 year olds
Goal 4: REDUCE CHILD MORTALITY
TARGET 5: Reduce by two-thirds, between 1990 and 2015, the under-five Mortality Rate
Indicators
13. Under-Five Mortality Rate
14. Infant Mortality Rate
15. Proportion of one year old children immunized against measles

Goal 5: Improve Maternal Health
TARGET 6: Reduce by three quarters between 1990 and 2015, the Maternal Mortality Ratio
Indicators:
16. Maternal Mortality Ratio
17. Proportion of births attended by skilled health personnel

Goal 6: Combat HIV/AIDS, Malaria and other Diseases
TARGET 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS
Indicators:
18. HIV prevalence among pregnant women aged 15-24 years
19. Condom use rate of the contraceptive prevalence rate
19A. Condom use at last high risk sex
19B. Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS

TARGET 8: Have halted by 2015 and begun to reverse the incidence of Malaria and other major diseases
Indicators:
21. Prevalence and death rates associated with Malaria
22. Proportion of population in Malaria risk areas using effective Malaria prevention and treatment measures (Percentage of population covered under use of residual spray in high risk areas)
23. Prevalence and death rates associated with Tuberculosis
24. Proportion of Tuberculosis cases detected and cured under DOTS

Goal 7: Ensure Environmental Sustainability
TARGET 9: Integrate the principle of sustainable development into country policies and programmes and reverse the loss of environmental resources
Indicators:
25. Proportion of land area covered by forest
26. Ratio of area protected to maintain biological diversity to surface area
27. Energy use per unit of GDP (Rupee)
28. Carbon Dioxide emission per capita and consumption of Ozone-depleting Chlorofluoro Carbons (ODF tons)
29. Proportion of the Households using solid fuels

TARGET 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation
Indicators
30. Proportion of population with sustainable access to an improved water source, urban and rural
31. Proportion of population with access to improved sanitation, urban and rural

TARGET 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers
Indicators
32. Slum population as percentage of urban population
Goal 8: Develop a global partnership for development

Target 18: In cooperation with the private sector, make available the benefits of new technologies, especially information and communication

Indicators

47. Telephone lines and cellular subscribers per 100 population
48. A. Internet subscribers per 100 population
48. B. Personal computers per 100 population

Origins of SDGs

- The outcome document of the 2010 MDG Summit requested the Secretary-General to initiate thinking on the global development agenda beyond 2015.
- At Rio+20 conference in 2012, member states decided to elaborate new post-2015 sustainable development framework

1. MDGs & SDGs/Comparison

<table>
<thead>
<tr>
<th>MDG</th>
<th>SDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional assistance</td>
<td>Traditional assistance + Universal goals</td>
</tr>
<tr>
<td>Limited goals</td>
<td>More comprehensive</td>
</tr>
<tr>
<td>Top-down process</td>
<td>Inclusive goal setting</td>
</tr>
<tr>
<td>Traditional statistics</td>
<td>Traditional + Data revolution</td>
</tr>
<tr>
<td>Hunger and poverty together</td>
<td>Distinction</td>
</tr>
<tr>
<td>Quantity Education</td>
<td>Quality Education</td>
</tr>
<tr>
<td>Funding: Focus on ODA</td>
<td>Broader set of financial sources</td>
</tr>
</tbody>
</table>

Official Development Assistance ODA
1. MDGs & SDGs/Comparison

Five Elements of SDG

Sustainable Development Goals

SDG – Sustainable Development Goals

Goal 1: End poverty in all its forms everywhere

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3: Ensure healthy lives and promote well-being for all at all ages

Goal 4: Ensure inclusive and quality education for all and promote lifelong learning

Goal 5: Achieve gender equality and empower all women and girls

Goal 6: Ensure access to water and sanitation for all

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all
Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation

Goal 10: Reduce inequality within and among countries

Goal 11: Make cities inclusive, safe, resilient and sustainable

Goal 12: Ensure sustainable consumption and production patterns

Goal 13: Take urgent action to combat climate change and its impacts

Goal 14: Conserve and sustainably use the oceans, seas and marine resources
Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Goal 16: Promote just, peaceful and inclusive societies

Goal 17: Revitalize the global partnership for sustainable development

Make in India

Mission
“Manufacture in India and sell the products worldwide.”

Objective
- Ultimate objective is to make India a renowned manufacturing hub for key sectors. Companies across the globe would be invited to make investment and set up factories and expand their facilities in India.

- The purpose of Make in India Campaign:
  1. Job Creation
  2. Economic Development
  3. Global Recognition

Why make in India?
- Local First
  - “Minimize the GAP between producer and consumer!”

Why Make In India?
- Low inflation: regime policies Predictable and consistent.
- High inflation: reduces two ingredients of a successful make in India campaign.
  1. Capital accumulation
  2. The rate of change in productivity.
- Beyond inflation: make in India investors for policy stability with respect to trade, duties i.e both import and export, taxation.
How this would be achieved?

- **Skill Development** for people from rural and poor areas from urban cities.
- **25 key sectors**: telecommunications, power, automobiles, tourism, pharmaceuticals and others.
- **Individuals aged 15-35 years** high quality training in the key areas: welding, masonry, painting, nursing to help older people.
- **Skill certifications** to make training process standard.

Currently manufacturing in India suffers due to low productivity, rigid laws, and poor infrastructure resulting in low quality products getting manufactured.

- Over 1000 training centers across India in the next 2 years.

The vision of Digital India aims to transform the country into a digitally empowered society and knowledge economy.

Digital India aims to provide the much needed thrust to the nine pillars of growth areas, namely:

1. Broadband Highways
2. Universal Access to Mobile Connectivity
3. Public Internet Access Programme
4. e-Governance: Reforming Government through Technology
5. e-Kranti - Electronic Delivery of Services
6. Information for All
7. Electronics Manufacturing
8. IT for Jobs
9. Early Harvest Programmes

Digital India aims to provide the much needed thrust to the nine pillars of growth areas given above.

“Full World” Vision of the Whole System

Materially closed earth system

Society 5.0 for SDGs

Dealing with Large Scale Complex system

It’s a Fan!

It’s a Spear!

It’s a Snake!

It’s a Wall!

It’s a Tree!

More Emphasis on mainstreaming synergies or nexus of Environment Societal Economics Pillars of Development
**Need of the Hour**

• Strong STI capabilities, human capital and innovation systems, and easy access to foreign technologies, are important for growth and development, social welfare and facing environmental challenges.

• National policy action critical to support each of them for optimal growth and development impact.

• STI policies should ideally be a coherent part of a country’s national development policy and strategy.

• There are many challenges; Use STI to solve them

---

**How to start Research?**

• Your area of interest

• Relevant to social benefit

• Align with SDG using STI

• Moral and ethics to be followed

---

**Next steps**

• Fix the research focus

• Literature Survey

• DO IT YOURSELF

• Verify the solution for Benchmark Problems

• Patent/Publication

• Product

---

**Literature review**

(Boote and Beille 2005)

It allows the researcher to

• demonstrate that the author is knowledgeable about the field

• prepare a legitimate and publishable scholarly document

• find out the influential researchers and research groups in the field

---

**Scientific reasons (Gall, Borg, and Gall, 1996)**

• Delimiting the research problem.

• Seeking new lines of inquiry.

• Avoiding fruitless approaches.

• Gaining methodological insights.

• Identifying recommendations for further research.

• Seeking support for grounded theory
Hart, 1999
• distinguishing what has been done from what needs to be done;
• discovering important variables relevant to the topic;
• synthesizing and gaining a new perspective;
• identifying relationships between ideas and practices;
• establishing the context of the topic or problem;
• rationalizing the significance of the problem;

Hart, 1999 contd...
• enhancing and acquiring the subject vocabulary;
• understanding the structure of the subject;
• relating ideas and theory to applications;
• identifying the main methodologies and research techniques that have been used; and
• placing the research in a historical context to show familiarity with state-of-the-art developments

Structured Literature Review
• Follow the structured Literature Review
• Three Phases

Phase I – Planning the review
1. Identification of the need for a review
2. Commissioning a review
3. Specifying the research question(s)
4. Developing a review protocol
5. Evaluating the review protocol

Phase II Review of Literature
• Identification of research
• Selection of primary studies
• Study quality assessment
• Data extraction and monitoring
• Data synthesis

Phase III Dissemination of acquired knowledge
• Specifying dissemination strategy
• Formatting the main report
• Evaluating the report
Research

- Discover something - **RE SEARCH**
- Feel / Experience Research
- Feasibility and **economic** viability
- **Impact** of Research
- Align with **SDG using STI**

Proposal for Research

- Choose the topic useful for the society
- Follow the format of any proposal
  - Objective
  - Methodology
  - Implementation
  - Verification and Validation
  - Deliverables

Research Proposal

- Funding Agency
- Scope/ Theme
- Practical oriented Deliverables/ Product
- Patent/Publications
- Commercial viability

Research Proposal Contd...

- Motivation
- Your Strength in that field
- Literature Survey
- Problem Statement
- Innovative Methodology
- Comparative study
- Expected outcome
- Economic and social viability
Our Research Focus: DRONE

- Dynamic Remotely Operated Navigation Equipment (or)
- Unmanned Aerial Vehicle (UAV)

Our Dhaksha Products

- Multirotor UAV (Electrical & Gasoline) & Tethered UAV
- Fixed Wing UAV (Electrical & Gasoline) & Vertical Take-off and Horizontal Transition (VTHT)
- Multirotor UAV & DRONE Taxi

Dhaksha UAV Products

- Fixed-wing UAV
- Multirotor UAV
- Hybrid UAV
- Agriculture UAV
- Tethered UAV

DH-XX COPTER SERIES - OPTIONAL PAYLOADS

- Multi spectral Camera
- IR Python
- UV Optical Zoom Camera
- Search Light
- Spray Mechanism

Served in Many Disaster and Rescue Operations in India

2013: Himalayan Tsunami - Uttrakhand
2015: Chennai flood
2017: Jindore Oil Spill - Chennai
2014: Mulshi dam building collapse
2016: Vadalba cyclone - Chennai
2018: Kurangani forest fire

WON SECOND BEST TABLEAU PRIZE IN REPUBLIC DAY PARADE

14-12-2018
World Record Initiative

- Our IC engine based multi-rotor UAV made the world record for the long endurance of flight time 6 hours 7 mints 45 seconds recently.
NEXT FOCUS OF DHAKSHA PRODUCTS

UAV applications

1. Defense Applications
   - Disaster Management
   - Border Security
   - Counter Terrorism
   - Internal Security
   - Emergency Response
   - Coast Guard Security
   - Environment Assessment

2. Civil Applications
   - Agriculture Applications
   - Surveillance Applications
   - Disaster Management
   - Infrastructure Management
   - Mining Applications
   - Transportation Applications
   - Telecommunication Applications
   - Entertainment and Media
   - Nuclear Plant Applications

Bridging the Generation Gaps

Remember the **Golden Rule**?
“Treat others as you would like to be treated.”

Change it to the **Platinum Rule**
“Treat others as they would like to be treated”
Life is to Live

- What is the purpose of human life?
- LIFE IS TO LIVE FOR YOU FIRST AND THEN FOR OTHERS ALSO
- How can you achieve a successful life?
- How is technology related to your life?

Life intelligence

- IQ?
- EQ?
- Any idea about LQ(LIFE INTELLIGENCE)?

<table>
<thead>
<tr>
<th>Intelligence Quotient (IQ)</th>
<th>Measure of Intelligence that is genetically induced in human</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IQ makes you book smart</td>
</tr>
<tr>
<td></td>
<td>IQ helps you to enter in to a good profession</td>
</tr>
<tr>
<td></td>
<td>IQ may not be easily changed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emotional Quotient (EQ)</th>
<th>Measure of Emotional intelligence that is about how to perceive, assess and manage emotions of self and others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EQ helps you to succeed in your life</td>
</tr>
<tr>
<td></td>
<td>EQ makes you heart smart</td>
</tr>
<tr>
<td></td>
<td>EQ may be improved easily by practice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Life Intelligence (LQ)</th>
<th>Courageous to be right, Self awareness of strength and weakness, Empathy and intelligent way of solving problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LQ is empowered by both IQ and EQ</td>
</tr>
<tr>
<td></td>
<td>LQ is embraced by IQ and EQ</td>
</tr>
</tbody>
</table>

What skills will we need?

<table>
<thead>
<tr>
<th>in 2015</th>
<th>in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complex Problem Solving</td>
<td>1. Complex Problem Solving</td>
</tr>
<tr>
<td>2. Critical Thinking</td>
<td>2. Critical Thinking</td>
</tr>
<tr>
<td>3. Creativity</td>
<td>3. Creativity</td>
</tr>
<tr>
<td>5. Coordinating with Others</td>
<td>5. Coordinating with Others</td>
</tr>
<tr>
<td>6. Emotional Intelligence</td>
<td>6. Emotional Intelligence</td>
</tr>
<tr>
<td>8. Service Orientation</td>
<td>8. Service Orientation</td>
</tr>
</tbody>
</table>

The Future...

- 1989: ‘The future is multi-media’
- 1999: ‘The future is the Web’
- 2009: ‘The future is smart mobile’
- 2014: ‘The future is smart data’
- 2020: ‘The future is smart planet’
"When it comes to the future, there are three kinds of people: those who let it happen, those who make it happen, and those who wonder what happened."
— John M. Richardson, Jr.

“All too often we are giving young people cut flowers when we should be teaching them to grow their own plants.”
- John W. Gardner

Arise, Awake and Stop Not till the Goal is reached
By
Swami Vivekananda

All powers are within you; you can do anything and everything
by
Swami Vivekananda

Conclusion

- Need of the hour
- Society 5.0
- MDG and SDG
- Research Focus

Suggestions and Clarifications
My Queries

- Can technology change cruel mind?
- Can it give human peace of mind?
- Can it bring unity across globe?
- Can you achieve wisdom using technology?
- The **Malthusian trap** or **population trap** is a condition whereby excess population would stop growing due to shortage of food supply leading to starvation. It is named for [Thomas Robert Malthus](https://en.wikipedia.org/wiki/Thomas_Robert_Malthus).

Queries

- What is the purpose of science: Conquer nature? Help mankind?
- Is technology always good?
- Is innovation always good?
- Do all countries innovate?
- Can STI prevent a Malthusian trap?
- Do we have the wisdom to manage technologies?
INTRODUCTION to NAAC ACCREDITATION PROCESS

Dr. T. THYAGARAJAN,
Professor, E & I
Director- CUIC & Director- IQAC,
Anna University
thyagu_vel@yahoo.co.in

CONTENTS OF PRESENTATION

• What is NAAC?
• Benefits of NAAC
• Keywords
• NAAC Process
• Docs to be submitted (IIQA)

What is NAAC?

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
– Established in 1994
– Autonomous body
– Headquarters in Bangalore
– Meant for A& Aof HEIs

• Aspects focused during the A&A process
  – Quality Initiative
  – Quality Sustenance
  – Quality Enhancement

Benefits of NAAC

Accreditation facilitates institutions to...

• Know its SWOC
• Identify internal areas of planning and resource allocation
• Initiate innovative and modern methods of pedagogy.
• Obtain a new sense of direction and identity

Accreditation also facilitates...

• Funding agencies to look for NAAC performance for funding.
• Society to look for reliable information on quality education offered.
• Employers to look for reliable information on the quality of education offered to the prospective recruits

NAAC – Keywords at a glance

• LOI - Letter of Intent
• IIQA - Institutional Information Quality Assessment
• NAAC - National Assessment & Accreditation Council
• AQA - Assessment & Accreditation
• QI, QS & QE - Quality Initiative, Quality Sustenance & Quality Enhancement
• HEI - Higher Education institution
• QA - Quality Assurance
• SSR - Self Study Report
• RAR - Re Accreditation Report
• AQAR - Annual Quality Assurance Report
• IQAC - Internal Quality Assurance Cell
• PTM - Peer Team Members
• P.T.R - Peer Team Report

Indira Noyi.mp4
**NAAC – Keywords at a glance (Contd.)**
- CBCS - Choice Based Credit System
- CBSS - Credit Based Semester System
- SWOT(C) - Strength, Weakness, Opportunity, Threat (Challenge)
- QIF - Quality Indicator Framework
- SSR COMPONENTS - Executive Summary, Profile, Evaluative report (Dept wise), Quality Indicator Framework, Data templates/Documents
- CRITERIA - (CA, TLE, RIE, I&LR, GLM, I&BP)
- GRADES / CGPA / SGS - System Generated Score

**IIQA APPLICATION PROCESS**
- IIQA Application Process
  - A web-based system for submission of IIQA
  - Each institution can send the data for a duration of 2 months

**PRE- QUALIFIER TEST**
- From the data filled by Institution (IIQA) a score and Institution SSR will be generated.
- Pre-qualifiers for peer team visit will be based on Institution score in each criterion.
- Institution needs to score at least 30% of the quantitative (System Generated) score in each criterion to proceed with peer team visit.
- Institution failing this can apply afresh on.

**List of docs required to be uploaded in pdf format (not exceeding 1MB)**
- Latest Affiliation letter from the Affiliating University.
- Latest Recognition/approval letter from Statutory Regulatory Authority like (SRA) AICTE
- UGC 2f and 12(B) recognition certificate along with latest Plan General Development Grant release letter from UGC.

**List of docs required to be uploaded in pdf format (not exceeding 1MB)**
- Letter from UGC regarding award of CPE/UEP.
- For Autonomous colleges, UGC letter conferring Autonomous Status.
- Proof of uploading All India Survey on Higher Education (AISHE) certificate.
- If change in name, submit approvals of relevant authorities/ University/MHRD/UGC.
List of docs required to be uploaded in pdf format (not exceeding 1MB)-3

- Approval of UGC/MHRD/State government for establishment of university.
- Upload AQAR's in the website so as to provide URL details.
- Self declaration by the HEIs complying with rules and regulations of Central Government, State Government, UGC, Affiliating University and other applicable SPA's in the format provided by NAAC.
- Self declaration with respect to Affiliation status in the format provided by NAAC.

Self Study Report (SSR)

- Presented in one document of Max. 200 pages (Excluding department-wise inputs)
- Contents: Q-DEEP
  - Executive Summary & SMOC analysis
  - Profile of the Institution
  - Quality Indicator Framework (QIF)
  - Evaluative Report: Department-wise
  - Data Templates/Documents (Qualitative & Quantitative Metrics)

FEE (with effect from 15.8.2017)

- Registration fee: Rs25,000/- + 18% GST
- For assessment and accreditation of Professional Institutions
  - 1 to 10 departments: Rs3,75,000/- + 18% GST
  - >10 departments: Rs7,50,000/- + 18% GST
- Note: 50% + 18% GST at the time of submission of SSR
  - 50% + 18% GST 15 days before the PTM visit
- Rs 3,00,000/- + GST 15% towards TA/LoP, prior to the arrangement of Peer Team Visit, after clearing Pre-qualifier stage for peer team Visit.
- Mode of Payment: DD in favour of "The Director, NAAC", payable at Bangalore.

What are the Criteria for Assessment?

- Curricular Aspects
- Teaching-Learning and Evaluation
- Research, Innovation and Extension
- Infrastructure and Learning Resources
- Student Support and Progression
- Governance, Leadership and Management
- Institutional values and Best Practices
- (CQRIS - Gold)

How NAAC-PTM will Assess & Accredit?

- Visit the Depts & facilities
- Interact with all stakeholders
- Verify documentary evidence thoroughly to validate the SSR

WEIGHTAGES

<table>
<thead>
<tr>
<th></th>
<th>150 (U)</th>
<th>150 (Au)</th>
<th>100 (Aff)</th>
</tr>
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<tbody>
<tr>
<td>Curricular Aspects</td>
<td></td>
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<tr>
<td>Teaching-Learning &amp; Eval</td>
<td>200 (U)</td>
<td>300 (Au)</td>
<td>350 (Aff)</td>
</tr>
<tr>
<td>Research, Innovation &amp; E</td>
<td>250 (U)</td>
<td>150 (Au)</td>
<td>120 (Aff)</td>
</tr>
<tr>
<td>Infrastructure &amp; Learning Resources</td>
<td>100 (U)</td>
<td>100 (Au)</td>
<td>100 (Aff)</td>
</tr>
<tr>
<td>Student Support &amp; Progression</td>
<td>100 (U)</td>
<td>100 (Au)</td>
<td>130 (Aff)</td>
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<tr>
<td>Governance, Leadership &amp; Management</td>
<td>100 (U)</td>
<td>100 (Au)</td>
<td>100 (Aff)</td>
</tr>
<tr>
<td>Institutional Values &amp; Best Practices</td>
<td>100 (U)</td>
<td>100 (Au)</td>
<td>100 (Aff)</td>
</tr>
</tbody>
</table>
Curricular Aspects
CA (150)
• Design and Development (50)
• Academic Flexibility (50)
• Curriculum enrichment (30)
• Feedback System (20)

Research, Innovation and Extension
RIE (250)
• Promotion of research (20)
• Resource Mobilization for Research (20)
• Innovation Eco system (30)
• Research publications & Awards (100)
• Consultancy (20)
• Extension activities & Institutional social responsibilities (40)
• Collaborations (20)

Student Support and Progression
SSP (100)
• Student support (30)
• Student progression (40)
• Student Participation and activities (20)
• Alumni Engagement (10)

Teaching Learning and Evaluation
TLE (200)
• Student Enrolment and Profile (10)
• Catering to student diversity (20)
• Teaching Learning Process (20)
• Teacher Profile & Quality (50)
• Evaluation Process and reforms (40)
• Student Performance Learning Outcomes (30)
• Student Satisfaction Survey (30)

Infrastructure and learning resources
I & LR (100)
• Physical facilities (30)
• Library as learning resource (20)
• IT Infrastructure (30)
• Maintenance of campus facilities (20)

Governance, Leadership and Management
GLM (100)
• Institutional vision and leadership (10)
• Strategy development and deployment (10)
• Faculty Empowerment Strategies (30)
• Financial management and resource mobilization (20)
• Internal Quality Assurance System (30)
Institutional values and Best Practices, I & BP (100)

- Institutional Values and Social Responsibilities (50)
- Best Practices (30)
- Institutional distinctiveness (20)

ASSESSMENT OUTCOME-1

- PART I (Peer Team Report)
  - Section 1: Gives the General Information of the institution and its context.
  - Section 2: Gives Criterion wise analysis based on peer evaluation of qualitative indicators, descriptive assessment report based on the Peer Team's critical analysis presenting strengths and weaknesses of HEI under each Criterion.

ASSESSMENT OUTCOME-2

- PART I (Contd/-)
  - Section 3: Presents an Overall Analysis which includes Institutional Strengths, Weaknesses, Opportunities and Challenges.
  - Section 4: Records Recommendations for Quality Enhancement of the Institution (not more than 10 major ones)

ASSESSMENT OUTCOME-3

- PART II
  - This part will be a System Generated Quality Profile of the HEI based on statistical analysis of quantitative indicators in the NAAC's QIF (quality indicator framework).
- PART III
  - Contains the Institutional Grade Sheet which is based on qualitative indicators, quantitative indicators and student satisfaction survey.

GRADING & ACCREDITATION

<table>
<thead>
<tr>
<th>CGPA</th>
<th>Letter Grade</th>
<th>Status</th>
</tr>
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<tr>
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Grade Qualifiers for University

- Minimum GPA of 3.01 in Criterion 1, 2 and 3 respectively (For A, A+, A++ Grade)

- Minimum GPA of 2.01 in Criterion 1, 2 and 3 respectively (For B, B+, B++ Grade)

- Minimum GPA of 1.51 in Criterion 1, 2 and 3 respectively (For C Grade)
Internal Quality Assurance Cell

Towards Quality in Education - The Teaching Perspective

Dr. T.V. Geetha
Dean, College of Engineering, Guindy & Senior Professor, Dept of Computer Science and Engineering
College of Engineering, Guindy
Anna University Chennai
27th November 2018

Challenges for The Teachers of Today

• Teaching for the Future
• Teaching based on Education Paradigms
• Innovation and Creativity in Classroom Teaching
• Outcome Based Education – towards Accreditation

Motivate, Instill Confidence, Create Passion!!

“If a doctor, lawyer, or dentist had 40 (or 400) people in his office at one time, all of whom had different needs, and some of whom didn’t want to be there and were causing trouble, and the doctor, lawyer, or dentist, without assistance, had to treat them all with professional excellence for nine months, then he might have some conception of the classroom teacher’s job.”
- Donald D. Quinn

“The best learners... often make the worst teachers. They are, in a very real sense, perceptually challenged. They cannot imagine what it must be like to struggle to learn something that comes so naturally to them.”
- Steven Brookfield

Teaching for the Future

Without teachers, life would have no class.
Students need more than theoretical knowledge to succeed: teamwork, communication, customer-awareness, project management, leadership, ethics, professionalism.

Universities will be engaged in their communities and in the world.

Mutual Needs

Education will be central to addressing global grand challenges.

Both local and global communities need access to technical expertise that is normally prohibitively expensive: improved, enhanced, new capabilities.

20th Century towards 21st Century

• The last half of the twentieth century was dominated by
  – physics, electronics, high-speed communications, and high-speed long-distance transportation.
  – It was an age of speed and power.
• The twenty-first century appears to be quite different, dominated by
  – biology and information, but also by macro-scale issues like energy, water, and sustainability.

Professionals in 2020

• Analytical skills
• Practical ingenuity
• Design creativity
• Communication skills
• Business and management skills
• Leadership skills
• High ethical standards
• Strong sense of professionalism
• Lifelong learning skills
• Agility & flexibility

The Reality?

Employer Perceptions of Weaknesses in Today’s Graduates (Todd et al.)

• Technical arrogance
• No understanding of manufacturing processes
• Lack of design capability or creativity
• Lack of appreciation for considering alternatives
• All want to be analysts
• Narrow view of engineering and related disciplines
• No understanding of the quality process
• Weak communication skills
• Little skill or experience in working in teams

Imperative for Reform: Challenges to 21st Century

• Major driver for engineering employment to global competition; focus on time-to-market, cost, quality, customer orientation.
• Intelligent technologies offer opportunities to be more creative, “work smarter;” can revolutionize learning.
• Constantly-changing work environment calls for astute interpersonal skills; employment opportunities shifting to smaller firms, non-traditional areas.
• Massively integrated populations, place environment, health, and safety at the front end of design; zero discharge, life-cycle costs, social and political concerns change the classical economic balance.

Bill Gates - American programmer, inventor, business magnate, and philanthropist. Gates is the former chief executive and current chairman of Microsoft, the world's largest personal computer software company, which he co-founded with Paul Allen. He pursued a number of philanthropic endeavors, donating large amounts of money to various research programs.

Dr. T.V. Geetha, Anna University

Gordon Earle Moore

Albert Einstein

Martin Luther King, Jr.

Dr. T.V. Geetha, Anna University

Pablo Ruiz y Picasso

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SWOT Analysis (Pair-wise Activity)

- **Teaching for the Engineers of the Future – Our System**: List 2 of each – Strengths, Weaknesses, Opportunities and Threats

---

**Levels of Learning - Bloom’s Taxonomy**

1. **Knowing**
   - Fact recall with no real understanding behind the meaning of the fact. Define, describe, list, reproduce, enumerate.

2. **Comprehending**
   - The ability to break the meaning of the material. Classify, explain, discuss, give examples, summarize.

3. **Applying**
   - The ability to use learned material in new and concrete situations. Determine, develop, compute, utilize, conduct.

4. **Analyzing**
   - Correlate, diagram, distinguish, outline, infer.

5. **Synthesizing**
   - Adapt, combine, compare, contrast, design, generate.

6. **Evaluating**
   - Compare & contrast, critique, justify.

---

**Teacher’s Role - Kolbe Learning for Engineering Education**

- **FACILITATOR**
  - WHAT?
  - HOW?
  - CONCRETE EXPERIENCE

- **MOTIVATOR**
  - WHY?

- **ENABLER**
  - WHAT IF?

- **KNOWLEDGE PROVIDER**
  - THINKING: ABSTRACT CONCEPTUALIZATION
  - WATCHING: REFLECTIVE OBSERVATION
  - DOING: ACTIVE EXPERIMENTATION

---

**Characteristics of Next Generation Graduates**

Taken from a presentation by Joseph Bordogna, NSF

- **Understand the functional core** of the engineering process.
- **Analyze and synthesize**: formulate problems and solve them; become adept at group problem-solving strategies.
- **Think** across disciplines (laterally) as well as in disciplinary depth (vertically).
- **Communicate ideas effectively** to influence diverse groups, including non-engineers; act both independently and as a team member.
- **Recognize the relationship** of the engineering enterprise to the social/economic/political context of engineering practice and the key role of this context in engineering decisions.
- **Develop the motivation**, knowledge base, and intellectual capacity for career-long learning.
What Is Outcome Based Engineering Education?

IT’S NOT WHAT WE TEACH, IT’S WHAT YOU LEARN

In a nutshell, learner-centric approach to tertiary education

Understanding Just Content Coverage?

“The greatest enemy of understanding is coverage – I can’t repeat that often enough. If you’re determined to cover a lot of things, you are guaranteeing that most kids will not understand, because they haven’t had time enough to go into things in depth, to figure out what the requisite understanding is, and be able to perform that understanding in different situations.”

(Gardner 1993: 24)

Let the students learn to uncover the syllabus

The ‘logic’ of OBE

‘The logic is stunningly obvious: Say what you want students to be able to do, teach them to do it and then see if they can, in fact, do it.’

[J. Biggs & C. Tang, Teaching for Quality learning at University, 3rd Ed, p.177, Open University, 2007.]

What is OBE?

- It is a method of curriculum design and teaching that focuses on what students can actually do after they are taught.
- These questions are asked:
  - What do you want the students to learn?
  - Why do you want them to learn it?
  - How can you best help students to learn it?
  - How will you know what they have learnt?

A Comparison between the Traditional Teaching Approach and the Outcome-based Approach

<table>
<thead>
<tr>
<th>Traditional Teaching Approach</th>
<th>Outcome-based Approach</th>
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<tbody>
<tr>
<td>Teacher-centered</td>
<td>Learner-centered</td>
</tr>
<tr>
<td>Teacher as Instructor</td>
<td>Teacher as Partner / Facilitator</td>
</tr>
<tr>
<td>Focus on teacher’s input</td>
<td>Focus on learner’s output</td>
</tr>
<tr>
<td>Rigid and controlling</td>
<td>Flexible and empowering</td>
</tr>
<tr>
<td>Emphasis on products</td>
<td>Emphasis on progress / overall learning</td>
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<tr>
<td>Course objectives</td>
<td>Course Intended Learning Outcomes (CILOs)</td>
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<tr>
<td>Norm-referenced assessment</td>
<td>Criterion-referenced assessment</td>
</tr>
<tr>
<td>Content-based &amp; content delivery</td>
<td>Ability-based &amp; ability building</td>
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</tbody>
</table>

INNOVATION & CREATIVITY IN CLASSROOM TEACHING

To achieve this ......
Encouraging Independent Thinking !!!

"I expect you all to be independent, innovative, critical thinkers who will do exactly as I say!"

The educational role of faculty members is not to impart knowledge; it is to design learning environments that support the process of knowledge acquisition.

Dr. T.V. Geetha, Anna University

The empires of the future are the empires of the mind.

- Winston Churchill

Innovative Methods of Teaching

I hear and I forget.
I see and I believe.
I do and I understand.

- Confucius

What is “Active Learning”? 

- Engaging students in a learning experience that requires them to think about the subject matter.

McKeachie, 1999

It is a process whereby learners are actively engaged in the learning process, rather than "passively" absorbing lectures. Active learning involves reading, writing, discussion, and engagement in solving problems, analysis, synthesis, and evaluation.

Dr. T.V. Geetha, Anna University
How does Active Learning work?

Active Learning involves input from multiple sources through multiple senses (hearing, seeing, feeling, etc.).

Active Learning involves process, interacting with other people and materials, accessing related schemata in the brain, stimulating multiple areas of the brain to act.

Active Learning involves output, requiring students to produce a response or a solution or some evidence of the interactive Learning that is taking place.

TOOLS FOR ENHANCING INNOVATION & CREATIVITY IN TEACHING

- ROLE PLAY
- RADIOSHOW
- DEMONSTRATIONS
- MIND MAPPING/CONCEPT MAPPING
- STORYTELLING
- FIELD TRIPS
- GAMES
- BROCHURE MAKING
- USE OF GOOD SENSE OF HUMOUR
- CREATIVE & INNOVATIVE EVALUATION
- BE SIMPLE
- UPDATE

MIND MAP FOR SCALAR QUANTITIES

Examples of Mind Maps

Ten Methods to Get Participation

1. **Open Discussion** – not simply "Are there any questions?"
2. **Response Cards** – answers to posed questions on submitted index cards (more anonymity)
3. **Polling** – a short survey that is passed out and tallied to focus discussion
4. **Subgroup Discussions** – share and record information; develop questions and promote further consideration
5. **Learning Partners** – work on tasks or discuss key questions with the student next to them
6. **Whips** – go around group and obtain short answers to key questions
7. **Panels** – small group of students may present views in front of entire class
8. **Fishbowl** – discussion circle with remainder of class listening in.
9. **Games** – Family Feud, Jeopardy, Millionaire
10. **Calling on the Next Speaker** – student view sharing and calling on next student

Teaching using Individual Student Activity

Ask Students to...

- Restate information
- Give examples
- Recognize instances
- Make connections
- Apply concepts
- Predict consequences
- State converse
Teaching using Pair wise-Activity
Learning Partners

- Compare class notes
- Discuss an example
- Solve a problem
- Critique each other’s writing
- Question partner about reading
- Recap lecture
- Develop questions for teacher
- Test each other
- Checklisting

Check listing

- Developing checklist criteria and/or applying checklist criteria in the assessment of an article, evidence, presentation, performance, etc.

Outline the criteria to be considered in deciding a manufacturing process

Compare and Contrast

- Teacher and/or learners
  - identifying similarities and differences between two cases, studies, problems, processes, etc.
  - to help learners discover when specific instances apply and when they don’t
  - and to increase their ability to generalize and transfer information

Teaching for Group Activity
Small Group Work

- One-time or long-term group of learners charged with performing assigned tasks, such as
  - discussing a question,
  - evaluating an issue,
  - solving a problem,
  - brainstorming,
  - Making recommendations,
  - developing a project,
  - making a presentation, etc.

To find out similarities and differences between any two Building Materials
A2 Improving Engineering Education (Individual)

• List any three ways in which you will change your teaching
ROLE OF IQAC IN QUALITY ASSESSMENT

Dr. Sabitha Ramakrishnan
Deputy Director, IQAC
Anna University
rsabitha@annauniv.edu

Overview
1. IQAC - Need
2. Objective
3. Strategies
4. Functions
5. Benefits
6. Composition of the IQAC
7. The role of coordinator
8. Operational Features of the IQAC
9. Revised Accreditation Framework
10. Mandatory Submission of AQAR by IQAC
11. The Annual Quality Assurance Report (AQAR)
12. IQAC Activities – Anna University

IQAC - Need
• A fully functional IQAC is mandatory for all NAAC accredited institutions
• NAAC gives guidelines for IQAC in University / Autonomous institute / Affiliated College
• Quality initiatives, enhancement and sustenance are the main objectives
• First step towards internalization and institutionalization of quality culture
• NOT intended for just record-keeping, but meant to be a facilitative and participative voluntary unit of the institution.
• Provides interventionist strategies to remove deficiencies and enhance quality, similar to quality circle in industries

Objectives
• To develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.
• To promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.

IQAC Strategies
a) Ensuring timely, efficient and progressive performance of academic, administrative and financial tasks;
b) Ensuring Relevance of academic/ research programmes;
c) Ensuring Equitable access to and affordability of academic programmes for various sections of society;
d) Ensuring Optimization and integration of modern methods of teaching and learning;
e) Ensuring credibility of assessment and evaluation process;
f) Ensuring the adequacy, maintenance and proper allocation of support structure and services;
g) Sharing of research findings and networking with other institutions in India and abroad.

Functions
a) Development and application of quality benchmarks
b) Defining Parameters for various academic and administrative activities of the institution;
c) Facilitating the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process;
d) Collection and analysis of feedback from all stakeholders on quality-related institutional processes;
e) Dissemination of information on various quality parameters to all stakeholders;
f) Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles;
g) Documentation of the various programmes/activities leading to quality improvement;
h) Acting as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices;
i) Development and maintenance of institutional database for the purpose of maintaining/enhancing the institutional quality;
j) Periodical conduct of Academic and Administrative Audit and its follow-up
k) Preparation and submission of the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC.
Benefits

• **IQAC facilitates / contributes to**
  a) Ensure clarity and focus in institutional functioning towards quality enhancement;
  b) Ensure internalization of the quality culture;
  c) Ensure enhancement and coordination among various activities of the institution and institutionalize all good practices;
  d) Provide a sound basis for decision-making to improve institutional functioning;
  e) Act as a dynamic system for quality changes in HEIs;
  f) Build an organised methodology of documentation and internal communication.

Composition of IQAC

1. Chairperson: Head of the Institution
2. Teachers to represent all level (Three to eight)
3. One member from the Management
4. Few Senior administrative officers
5. One nominee each from local society, Students and Alumni
6. One nominee each from Employers / Industrialists/ Stakeholders
7. One of the senior teachers as the coordinator/ Director of the IQAC

IQAC Activities

• Define objectives of the institution
• Devise work plan to achieve the objectives
• Ensure that the institution maintains High standard in education
• Establish procedures and modalities to collect data and information on various aspects of the institutional functioning
• Facilitate the institution towards academic excellence

Annual Quality Assurance Report (AQAR)

• Submission of **AQAR** is mandatory for all accredited institutions. AQAR should be submitted to NAAC by the end of September every year
  — This is a minimum institutional requirement (MIR) for subsequent accreditations
• AQAR may be the part of the Annual Report. The AQAR shall be approved by the statutory bodies of the HEIs (such as Syndicate, Governing Council/Executive Council/Board of Management) for the follow up action for necessary quality enhancement measures.

Revised Accreditation Framework

• AQAR Format has been revised in July 2017
• Quality enhancement measures are included in the new format for all activities
  — Teaching, Learning, Extension & Support activities
• Online submission of AQAR in NAAC portal
  (Currently, AQAR has to be maintained in the University website open for public viewing)

Pre-requisites for subsequent accreditations

The following are the pre-requisites for submission of Institutional Information for Quality Assessment (IIQA) for all Higher Education Institutions (HEIs) opting for 2nd and subsequent cycles of A& A:

• Having a functional IQAC.
• The minutes of IQAC meeting and compliance to the decisions should be uploaded on the institutional website.
• Mandatory submission of AQARs on a regular basis for institutions undergoing the second and subsequent cycles of Assessment and Accreditation by NAAC.
• Upload the AQAR on institutional website for access to all stakeholders.
**Guidelines for IQAC Website**

- The IQACs may create its exclusive window tab on its institutional website for keeping the records/files of NAAC, Peer Team Reports, AQAR, and Certificate of Accreditation Outcomes and regularly upload/report on its activities, as well as for hosting the AQAR.

---

**IQAC Activities – Anna University**

- Facilitating Academic Audit
- Facilitating publication of research journal
- Initiatives for securing R&D funding
- Coordination for NIRF ranking
- Coordination for NBA accreditation
- Coordination for submission of IOE proposal
- Data submission for ranking by various agencies (QS / Times / Etc...)

---

**IQAC Activities – Anna University (contd.)**

- Enhancement of IQAC Team
- Preparation of Ready Reckoner
- Creation of website
- Setting up of IQAC office
- Creation of Benchmarks
- Conduct of Training Programmes
- Preparation and Submission of AQAR
- Conduct of monthly internal meetings and annual Council meetings

---

**ORGANIZATIONAL STRUCTURE OF IQAC**

**MAJOR FUNCTIONS**

1. Dissemination of Quality Information
2. Internaionalization of Quality Culture
3. Organization of inter & intra institutional workshops, seminars & training programmes
4. Acting as nodal agency for the institution for quality related activities
5. Developing and maintenance of institutional database to maintain enhance quality and preparation of AQAR
6. Creation of quality benchmarks

---

**IQAC Team**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Director</td>
<td>Dr. T. Thyagarajan</td>
</tr>
<tr>
<td>Deputy Director</td>
<td>Dr. Sabitha Ramakrishnan</td>
</tr>
<tr>
<td>MIT Campus Coordinator</td>
<td>Dr. Sabitha Ramakrishnan</td>
</tr>
<tr>
<td>CGE Campus Coordinator</td>
<td>Dr. S. Meena Kumari</td>
</tr>
<tr>
<td>A.C. Tech Campus Coordinator</td>
<td>Dr. K. V. Radha</td>
</tr>
<tr>
<td>SAP Campus Coordinator</td>
<td>Mrs. R. Rajawati</td>
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<tr>
<td>Department Coordinators</td>
<td>Professors from each department in all the four campuses</td>
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<td>Admin Staff - Professional Assistant</td>
<td>Mrs. Nivasha</td>
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DISSEMINATION OF QUALITY INFORMATION

PREPARATION OF READY RECKONER

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<td>11. Objectives</td>
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<td>14. Results</td>
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<td>15. Conclusion</td>
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CREATION OF WEBSITE

ABOUT:
- ABOUT
- Objectives
- Functions
- Benefits
- Monitoring Mechanism
- Council Members

RECORD
- RECORD
- CERTIFICATION
- REPORTS
  - IQASA Report
  - AQAR 2016 – 2017
  - AQAR 2015 – 2016
  - AQAR 2014 – 2015
  - NAAC RAR
  - AQAR FORMAT

ACTIVITIES:
- Ongoing
- Past
- Future

GALLERY
- GALLERY

CONTACT
- CONTACT

Launching of IQAC Website in Sep 2016

Conduct of Training Programmes

ORGANIZATION OF INTER & INTRA INSTITUTIONAL SEMINARS, WORKSHOPS AND TRAINING PROGRAMMES

NAAC AWARENESS SEMINAR/ TRAINING PROGRAMME ON QUALITY SYSTEM IN HEI

SPEAKERS:
- FACULTY MEMBERS OF HIGHER EDUCATION INSTITUTIONS

DATE:
- 29Th and 30Th September, 2016

NO. OF PARTICIPANTS: 144

TOPICS COVERED:
- CHANGE MANAGEMENT
- ACADEMIC EXCELLENCE
- EFFECTIVE DOCUMENTATION & PRESENTATION
- ASSESSMENT & EVALUATION METHODOLOGY
- QUALITY SUSTAINABILITY
- QUALITY ENHANCEMENT THROUGH INTERNALIZATION OF QUALITY CULTURE
- INSTITUTIONALIZATION OF BEST PRACTICE

FEEDBACK:
- GOOD FEEDBACK ABOUT TOPICS, RESOURCE PERSONS, COURSE MATERIAL AND OVERALL ARRANGEMENTS

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- INSTITUTIONALIZATION OF BEST PRACTICE

FEEDBACK:
- GOOD FEEDBACK ABOUT TOPICS, RESOURCE PERSONS, COURSE MATERIAL AND OVERALL ARRANGEMENTS
"MODERN OFFICE MANAGEMENT" TRAINING PROGRAMME

BENEFICIARIES:
NON-TEACHING (TECHNICAL & ADMINISTRATIVE) STAFF MEMBERS, ANNA UNIVERSITY

DATE:
02ND TO 11TH NOVEMBER, 2016, 2 SESSIONS OF 1.5HRS PER DAY

NO. OF PARTICIPANTS: 91

TOPICS COVERED:
• EFFECTIVE COMMUNICATION SKILLS FOR ADMINISTRATORS
• PRESENTATION SKILLS AND ITS IMPORTANCE
• LEADERSHIP SKILLS
• EMAIL ETIQUETTE
• RECORD AND FILE MANAGEMENT
• PROBLEM SOLVING AND DECISION MAKING
• THE CONCEPT OF TEAM AND CONFLICT MANAGEMENT

FEEDBACK:
GOOD FEEDBACK ABOUT TOPICS, RESOURCE PERSONS, COURSE MATERIAL AND OVERALL ARRANGEMENTS
EXPANSION OF CORE TEAM

1. CREATION OF DEPUTY DIRECTOR POST – 21ST DECEMBER, 2015
2. IDENTIFYING CAMPUS COORDINATORS FOR EACH OF THE FOUR CAMPUSES.
3. IDENTIFYING DEPARTMENT COORDINATORS

AS NODAL AGENCY FOR QUALITY RELATED ACTIVITIES

FORMATION OF CORE COMMITTEE FOR DATA COLLECTION:

- CHAIRMAN: REGISTRAR
- AU-NIRF NODAL OFFICER: PROF. DR. J. PRAKASH
- MEMBERS: ADDITIONAL REGISTRAR, DEANS, CONTROLLER OF EXAMINATION, AOE (UD), DIRECTORS, DEPARTMENT HEADS
- CEG CAMPUS COORDINATORS: DR. H. THANGARAJ, AP
- MIT CAMPUS COORDINATOR: DR. S. KUILLAMERSH, AP
- ACT CAMPUS COORDINATOR: PROF. DR. MALAKESAN
- SAP CAMPUS COORDINATOR: DR. P. MEENAKSHI
- ADMIN. COORDINATOR: TL. E. PARANTHASAVATHI
- MEMBER SECRETARY: DEPUTY DIRECTOR, IQAC
- CONVENOR: DEPUTY DIRECTOR, IQAC & DVC

ANNA UNIVERSITY NIRF RANKING:

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ORGANIZATION OF INTER & INTRA INSTITUTIONAL TRAINING PROGRAMMES

ERASMUS + EQASA - 2ND TRAINING SEMINAR/ WORKSHOP on QUALITY ASSURANCE

ORGANIZATION OF AWARENESS PROGRAMMES

"QUALITY ASSURANCE IN HIGHER EDUCATION INSTITUTIONS" for Department Coordinators

BENEFICIARIES:
- PRO. DEPARTMENT COORDINATOR, ANNA UNIVERSITY

DATE: 13TH MARCH, 2018, 5 SESSIONS OF 3 HR DURATION EACH

NO. OF PARTICIPANTS: 37

TOPICS COVERED:

- QUALITY ASSURANCE IN HEIs – NAAC/NIRF PERSPECTIVES,
- ASSESSMENT AND ACCREDITATION – NBA PERSPECTIVE,
- BEST PRACTICES FOR QUALITY ASSURANCE IN HEIs,
- QUALITY ASSURANCE IN BUDGETING AND FINANCIAL MANAGEMENT,
- TEAMBUILDING FOR INSTITUTIONAL EXCELLENCE

FEEDBACK: GOOD FEEDBACK ABOUT TOPICS, RESOURCE PERSONS, COURSE MATERIAL AND OVERALL ARRANGEMENTS

ORGANIZATION OF INTER & INTRA INSTITUTIONAL WORKSHOPS

INTERNATIONAL WORKSHOP ON ‘QA IN HE’ (19.2.2018)

ORGANIZATION OF AWARENESS PROGRAMMES

AS NODAL AGENCY FOR QUALITY RELATED ACTIVITIES

NIRF 2017

NIRF 2018
NIRF CERTIFICATES: 2017

UNIVERSITY CATEGORY

ENGINEERING CATEGORY

OVERALL CATEGORY

NIRF CERTIFICATES: 2018

UNIVERSITY CATEGORY

ENGINEERING CATEGORY

OVERALL CATEGORY

Anna University receives NIRF Ranking from Minister of Human Resource Development, at New Delhi

QS RANKING 2018

QS World University Ranking: 651 - 700

Engineering and Technology Ranking: 388

Mechanical Engineering Ranking: 251 - 300

Chemical Engineering Ranking: 251 - 300

QS RANKING 2018

Electrical and Electronic Engineering Ranking: 301 - 350

Computer Science and Information Systems Ranking: 451 - 500

QS RANKING 2019

QS World University Ranking: 751 - 800

INSTITUTE OF EMINENCE

• COORDINATING THE SUBMISSION OF THE IOE PROPOSAL
• FORMATION OF CORE COMMITTEE:
  CONVENOR
  CO-CONVENOR
  NODAL OFFICER
  ADDITIONAL NODAL OFFICER
  DEPUTY NODAL OFFICER
  DEPUTY DEPUTY NODAL OFFICER
• SETTING UP OF TEMPORARY OFFICE FOR DATA COLLECTION
• COLLECTION OF DATA FOR 38 ANNEXURES
• COMPREHENSIVE ACTION PLAN WITH TIMELINES
• DELEGATION OF WORKS SUCH AS: VISION/ MISSION/ GOALS/ VALUES FORMATION
• COMPREHENSIVE 15 YEAR STRATEGIC PLAN
• R&D THRUST AREAS
• FORMATION OF SUB-COMMITTEE BY INVOLVING VARIOUS STAKEHOLDERS
• REVIEW MEETINGS TO MONITOR THE PROGRESS AS PER ACTION PLAN, ETC.
FACILITATING ACADEMIC AUDIT

• IQAC initiates process by sending circular to Director (Academic) through Registrar, to conduct academic audit for the academic year 2015-2016 and 2016-2017.
• According with the involvement of ACIE, faculty chairpersons and academic experts, the academic audits were carried out.
• The details were shared with the stakeholders, for taking necessary actions at their respective ends.

FACILITATING THE NBA VISIT

• Initiates accreditation process by sending circulars to the deans of various campuses
• Departments eligible for accreditation are identified. Concerned heads were requested to take immediate necessary steps to apply for NBA accreditation through dean's.
• Seminars were conducted to prepare the self-assessment report
• Inputs during the visit such as:
  - Hints to prepare PPTs
  - List of documents to be submitted
  - Arrangements to be made in the seminar hall/department labs/department library/display for various registers/files/certificates/awards etc.
  - Sharing scientist's photos
  - Conducting mock test for students/staff to create awareness
  - Coordinating with the chairman of NBA team etc.

FACILITATING THE PRINTING OF RESEARCH JOURNAL

• As suggested by NAA Peer Team, IQAC initiated the formation of core committee to explore the publication of Research Journal by our Anna University.
• Formation of core team: Director (Research), Director (P & D), Director (IQAC), Director (University Library), HOD (Instrumentation Engineering) and HOD (Printing Technology).
• Director (University Library) made arrangements for registration of the journal name as 'STEAM' (Science, Technology, Engineering, Architecture and Management).
• Director (Research) as chief editor took care of collection of research articles.
• Director (P & D) provided the necessary funding for the printing of the journal.
• HOD (Instrumentation Engg.) convened several meetings to collect the names of editorial board members, coordinate with printer for proof reading etc.
• Research Journal is in the advanced stage of release.

DEVELOPING AND MAINTENANCE OF INSTITUTIONAL DATABASE TO MAINTAIN/ ENHANCE QUALITY AND PREPARATION OF AQAR

• Cover page of AQAR 2014 - 2015
• Cover page of AQAR 2015 - 2016
• Cover page of AQAR 2016 - 2017
DEVELOPING AND MAINTENANCE OF INSTITUTIONAL DATABASE TO MAINTAIN/ ENHANCE QUALITY AND PREPARATION OF AQAR

BENCHMARKS: RESEARCH

• Number of on-going research projects per Department
• Percentage of Departments with UGC-SAP/ CAS and DST-FIST
• Number of Patents per year
• Number of Technology Transfers per year
• Average Ph.D. output per Department per year
• Average publication per faculty per year
• Number of Conferences per year per department
• Publication of Research Journal

BENCHMARKS: ACADEMIC

• Implementation of Choice Based Credit System (CBCS) for all the UG and PG programmes
• Average pass percentage of students
• Average placement of students (on-campus)
• Average drop-out percentage of students
• Declaration of results
• Number of books per students in the library
• Faculty/student ratio
• Student/Computer ratio
• Percentage of teachers with Ph.D qualification
• Percentage of teachers with post Doc qualifications
• Academic audit periodicity

DISCUSSION

Creation of Benchmarks

• Open for discussion

DISCUSSION

BENCHMARKS: RESEARCH

• Number of on-going research projects per Department
• Percentage of Departments with UGC-SAP/ CAS and DST-FIST
• Number of Patents per year
• Number of Technology Transfers per year
• Average Ph.D. output per Department per year
• Average publication per faculty per year
• Number of Conferences per year per department
• Publication of Research Journal

BENCHMARKS: ACADEMIC

• Implementation of Choice Based Credit System (CBCS) for all the UG and PG programmes
• Average pass percentage of students
• Average placement of students (on-campus)
• Average drop-out percentage of students
• Declaration of results
• Number of books per students in the library
• Faculty/student ratio
• Student/Computer ratio
• Percentage of teachers with Ph.D qualification
• Percentage of teachers with post Doc qualifications
• Academic audit periodicity

DISCUSSION
DISCUSSION

BENCHMARKS: RECOGNITION
• NBA Accreditation:
• NIRF Rankings:
• QS World University Rankings:
• QS BRICS Countries Rankings:
• QS Asian Countries:
• NAAC Accreditation:
• UPE (UGC) Recognition:
• IOE (Institution of Eminence):

BENCHMARKS: INFRASTRUCTURE
• ?
• ?
• ?

BENCHMARKS: RECOGNITION
• NBA Accreditation: For all the eligible UG/PG programs in a phased manner
• NIRF Rankings: Within Top 10 in all categories
• QS World University Rankings: Top 650
• QS BRICS Countries Rankings: 75
• QS Asian Countries: Top 300
• NAAC Accreditation: A++
• UPE (UGC) Recognition: 2nd phase
• IOE (Institution of Eminence): Recognition from UGC/MHRD

BENCHMARKS: INFRASTRUCTURE
• Individual block for every department
• Hostels for international students
• Staff quarters for Teaching, Non-Teaching and Administrative staff

THANK YOU!
Current Trends in Intellectual Property Rights & Innovation

Dr. M. Kantha Babu
Director,
Centre for Intellectual Property Rights,
College of Engineering Guindy,
Anna University,
Chennai 600 025, India.
Highlights of the year

- Examination increased by 72.2%
- Grant of patents increased by 55.3%
- Final disposal of applications increased by 37.7%
- Using the expedited examination route, patent granted within a record time of 113 days.

Applications filed by Indian Applicants.

Out of total 45,444 applications filed during 2016-17, the number of applications filed by Indian applicants was 13,310 which is 30% of the total applications filed and shows 1% increase over the previous year, wherein the corresponding number was 13,066. This is in tune with the increasing trend in domestic filing during past years. The number of applications filed by foreign applicants during the year (32,225) has shown a decrease of over 4.8% as compared to the number of applications (33,800) filed during 2015-16.

(b) Top 5 Indian applicants for patents

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of applicants</th>
<th>Applications filed</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>INDIAN INSTITUTE OF TECHNOLOGY (IIT)</td>
<td>400</td>
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<tr>
<td>2</td>
<td>WIPRO LIMITED</td>
<td>226</td>
</tr>
<tr>
<td>3</td>
<td>COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH</td>
<td>225</td>
</tr>
<tr>
<td>4</td>
<td>MAHINDRA &amp; MAHINDRA LIMITED</td>
<td>205</td>
</tr>
<tr>
<td>5</td>
<td>BHARAT HEAVY ELECTRICALS LTD.</td>
<td>174</td>
</tr>
</tbody>
</table>

(c) Top 5 Indian applicants for patents in the field of Information Technology

In the field of Information technology, WIPRO Limited occupied the top place in the reporting year while Tata Consultancy Services Limited was at the second place.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of applicants</th>
<th>Applications filed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WIPRO LIMITED</td>
<td>198</td>
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<tr>
<td>2</td>
<td>TATA CONSULTANCY SERVICES LIMITED</td>
<td>159</td>
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<tr>
<td>3</td>
<td>INDIAN INSTITUTE OF TECHNOLOGY (COLLECTIVE)</td>
<td>43</td>
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<tr>
<td>4</td>
<td>HCL TECHNOLOGIES LIMITED</td>
<td>35</td>
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<tr>
<td>5</td>
<td>HEGATI TECHNOLOGIES INDIA PVT LTD.</td>
<td>29</td>
</tr>
</tbody>
</table>
### About Centre for Intellectual Property Rights (CIPR)

- Anna University has a separate independent Intellectual Property Rights (IPR) cell namely Centre for Intellectual Property Rights (CIPR) to carry out all IPR activities.
- It was established in the year 2005.
- CIPR has to its credit a well-established Anna University Intellectual Property (IP) Policy.
- CIPR is facilitating IPR related issues to academicians, researchers, students of Anna University and also to Individuals, Entrepreneurs, Innovators, Industries, MSMEs, Educational, Research Institutions, Startups, etc.

### Objectives of Centre for Intellectual Property Rights (CIPR)

- To promote awareness on Intellectual Property Rights (IPRs) among Students, Research Scholars, Research & Development Establishments, Educational Institutions, MSMEs, Large Enterprises, etc.
- To organize Certificate Courses, Seminars, Workshops and Conferences on IPR and related activities to promote IPR.
- To protect intellectual creations of Students, Research Scholars, Faculties, Scientists, Entrepreneurs, Industries and others through a streamlined procedure by registering their IPR’s such as Patents, Industrial Designs, Trademarks, Copyrights and other Intellectual Property (IP) in an effective manner.

### Major Achievements of CIPR

- **Facilitator**: CIPR is glad to inform you that Intellectual Property Office of Government of India has recognized CIPR as one of the Facilitator for Startups.
- **Technology and Innovation Support Centre (TISC)**: CIPR is recognized as a Technology and Innovation Support Centre by the World Intellectual Property Organization (WIPO).
- **Trademark Registration**: The Logo of Anna University and CIPR has been registered as a Trademark at the Indian Trademark Registry.
- **MoU signed with Cell for IPR Promotion and Management (CIPAM), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India** for establishment of Technology and Innovation Support Center (TISC).
- **MoU signed with Confederation of Indian Industry (CII) of Tamil Nadu Technology Development and Promotion Centre (TNTDPC)** for the Conduct of IPR Certificate Courses and relevant activities.

### Details of Patents Filed & Granted of Anna University (upto 30th Sept 2018)

<table>
<thead>
<tr>
<th>Subject</th>
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<tr>
<td>1</td>
<td>Biochemistry</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>Biomedical Engineering</td>
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<tr>
<td>4</td>
<td>Chemistry</td>
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<tr>
<td>5</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>6</td>
<td>Computer &amp; IT Engineering</td>
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<tr>
<td>7</td>
<td>Electrical &amp; Electronic</td>
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<td>8</td>
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<td>12</td>
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</table>

### Anna University Patent Details - Year Wise upto 30th September 2018

- **Total Patents Applied**: 145, **Granted**: 34
Anna University Patent Details - Department Wise (upto 30th September 2018)

- No. of Patents Filed
- Patents Granted

- Dept. of Aerospace Eng
- Dept. of Applied Science Tech
- Centre for Biotechnology
- Dept. of Chemistry
- Dept. of Chemical Eng
- Dept. of Computer science & Eng
- Dept. of Computer Technology
- Centre for Crystal Growth
- Dept. of Civil
- Centre for Environment Studies
- Dept. of ECE
- Dept. of EEE
- Dept. of Industrial Eng
- Dept. of Information Science & Tech
- Dept. of Mechanical Engineering
- Dept. of Manufacturing Engg
- Centre for Medical Electronics
- Dept. of Production Technology
- Dept. of Textile Technology
- Dept. of Rubber and Plastics Technology
- KBC Research Foundation

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Anna University Patent Details - Year Wise 2015 to 2018

Total Patents Applied: 66, Granted: 14

Year Wise 2015 to 2018

- 2015: 11
- 2016: 18
- 2017: 15
- 2018: 22

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Centre for Intellectual Property Rights (CIPR), Anna University, Chennai, 600025.
Main Features of the Invention:

- Intelligent ECG detection Algorithm embedded in dsPIC for identifying the shockable signals.
- High Voltage Generation and shock Delivery Circuit.
- Enabling selection of Indian languages using Audio & Visual command assistance.
- Identification of Adult and Infant Patients.
- Optional pluggable physician screen for viewing the ECG variations and other conditions.

Analysis of the invention - Case Study

Defibrillation is a treatment for life-threatening cardiac dysrhythmias, specifically ventricular fibrillation (VF) and non-perfusing ventricular tachycardia (VT).

Drawbacks of existing prior art

1. No indigenous Fully automated compact AED is available in the market. Some semi-automated AEDs are available. However, Fully automated AED is 100% imported.
2. Vernacular language option for audio prompts is absent in the AED available in the market.
3. Location based automatic selection of vernacular language is also not available.
4. The details of Hardware and the embedded system used in the AED are not made available.
5. The market price is very high (more than Rs.1.00 Lakhs) for the AED.
6. Optional pluggable Physician screen is not provided in commercial AEDs.
7. Event recording in USB is not provided.

Feature of the present invention

7. Isolated H-bridge control by the DSP through opto-coupler: This enables a direct control over the pulse wave shapes by the DSP. Also, the failure rate of HV circuitry will be comparatively less than otherwise.
8. Logging of essential ECG data for the entire AED event for each patient: The algorithm is designed to store the vital information regarding each AED event with minimum memory usage. This is apart from the audio recording available in the currently existing AEDs.
9. Optional pluggable Physician's screen: A serial interface will be provided for plugging a monitor which can be used by a Physician for viewing more details graphically.
10. Event recording can be done in two ways: (i) Essential information can be transferred to a secondary USB storage (ii) Full information can be recorded when the physician screen is plugged.

Features of the present invention

1. Hybrid AGC circuitry and signal averaging – used to improve the ECG detection.
2. Unique equal pulse technique which will prove more efficient than that used in the existing AEDs.
3. Practical lookup table in tune with the RC circuits designed to meet the thorax impedance between 10 ohms and 2000 ohms, to improve the efficacy of defibrillation.
4. Low cost in terms of price, serviceability and maintenance: All AEDs used in India are currently imported at a high cost. This project proposes to develop an AED prototype so that it can be indigenously manufactured at an affordable cost of around Rs. 45,000/- without compromising on the quality. When produced in large quantities, the price will be less half the price of an imported AED with similar specifications.
5. Mains powering and charging to maximum energy when battery is disconnected or non-functional.
6. Geographical location based vernacular language assistance through selectable list of languages.
Block Diagram of Automated External Defibrillator

Patent References

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Patent No</th>
<th>Title of Patent</th>
<th>Application Date</th>
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<tr>
<td>4</td>
<td>WO200702289 A1</td>
<td>Philips Electronics</td>
<td>2007-08-20</td>
<td>2009-08-20</td>
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<td>WO200805850 A1</td>
<td>Philips Electronics</td>
<td>2008-10-20</td>
<td>2010-02-20</td>
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<td>WO201001258 A1</td>
<td>Philips Electronics</td>
<td>2010-03-20</td>
<td>2012-03-20</td>
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<td>2018-03-20</td>
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<td>Philips Electronics</td>
<td>2019-09-20</td>
<td>2021-09-20</td>
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<td>WO202102293 A1</td>
<td>Philips Electronics</td>
<td>2021-01-20</td>
<td>2023-01-20</td>
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Response to search documents

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<thead>
<tr>
<th>Sl.No</th>
<th>Patent No</th>
<th>Title of Patent</th>
<th>Existing Features</th>
<th>Difference between your &amp; Existing</th>
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<tr>
<td>1</td>
<td>WO200251570 A1</td>
<td>Philips Electronics</td>
<td>Multilingual external defibrillator</td>
<td>1. Two languages are used for the instructions 2. English &amp; Spanish are the languages used 3. Specific user control is used for language selection alone. 4. Specific user control used is button</td>
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<td>2</td>
<td>WO200513950 A1</td>
<td>Philips Electronics</td>
<td>Multilingual external defibrillator</td>
<td>1. Three Languages are used for the instructions 2. English, Hindi &amp; Tamil are the languages used 3. Specific user control is used for not only language selection but also for visual prompts and displaying waveforms. 4. Specific user control used is TFT based Touch display</td>
</tr>
<tr>
<td>Sl.No</td>
<td>Patient No</td>
<td>Title of Patent</td>
<td>Existing Features</td>
<td>Difference between yours &amp; Existing</td>
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<td>------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>WO2006163282.A1 Philips Electronics Application Date No: 2007-08-24</td>
<td>External defibrillator with multiple language prompting</td>
<td>1. Two languages are used for the instructions 2. English &amp; Spanish are the languages used 3. Speaker for English and wireless headphone for Spanish</td>
<td>1. Three Languages are used for the instructions 2. English, Hindi &amp; Tamil are the languages used 3. Speaker for all the three languages with visual display in English</td>
</tr>
<tr>
<td>5</td>
<td>US20140277228.A1 ZOLL MEDICAL Application Date No: 2014-09-18 (US)</td>
<td>Windowing for identifying shock outcome</td>
<td>1. ECG signal features extracted are: R/MV value, Peak to peak value, peak to trough, Average of peak to peak , Average of Peak to trough over a particular interval 2. ECG signal classification using frequency domain analysis (Amplitude spectrum area) 3. Only visual assistance</td>
<td>1. ECG signal features extracted are: Window-based Mean Absolute Value , RR Interval, R value and heart rate. 2. ECG classification using time domain analysis (Heart Rate and MAV) 3. Audio and visual assistance</td>
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<td>7</td>
<td>US6069192B1 CARDISAC SCIENCE Application Date No: 2003-12-23 (US)</td>
<td>Automated defibrillator with the ability to store rescuer information</td>
<td>1. AED is provided with a case with lid for data card 2. Memory of rescue information begins upon opening of lid &amp; insertion of data card (RAM memory card) 3. No internal storage 4. External storage in RAM memory card (14, 16, 16 MB-RAM)</td>
<td>1. AED is provided with internal storage (in SD card) and external storage (in USB flash drive) for recording vital information about AED performance 2. Internal storage is done automatically 3. External storage in USB flash memory drive by selection of save option from the touch-screen display (after the AED procedure is completed)</td>
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<td>8</td>
<td>WO201312180.A2 ZOLL MEDICAL Application Date No: 2013-05-16 (WO)</td>
<td>Determination for effective defibrillation</td>
<td>1. ECG signal classification by Amplitude spectrum area 2. Based on impedance, the shock success is verified 3. Graphical visual assistance</td>
<td>1. ECG signal classification by Amplitude spectrum area 2. Based on impedance, the shock success is verified 3. Graphical visual assistance</td>
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<td>9</td>
<td>US20030195617 A1 PHYSIO CONTROL Application Date No: 2003-10-16 (US)</td>
<td>Automated external defibrillator with user interface for adult and Pediatric applications</td>
<td>1. Patient information, weight, height, Link switch is taken from the user via speech recognition system. Energy level is calculated based on the inputs. 2. Two different electrode pads for Paediatric and adult</td>
<td>1. Thoracic impedance of the patient is measured and the energy level is decided by the algorithms automatically based on the impedance. 2. Single electrode pads used for all patients. Adult / paediatric patient is automatically identified by the algorithms from the thoracic impedance.</td>
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<tr>
<td>Sl.No</td>
<td>Patent No</td>
<td>Title of Patent</td>
<td>Existing Features</td>
<td>Difference between yours &amp; Existing</td>
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<tr>
<td>10</td>
<td>US2005070964A1</td>
<td>Philips Electronics Application Date: 2005-03-31</td>
<td>Automated external defibrillator with context sensitive help</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. The Adult/child selection is taken as an input from the user with the help of context sensitive help.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. CPR instruction is given but the duration is not mentioned.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. CPR instruction is given through speaker (audio).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Automatic Adult/Child selection on thoracic impedance measurement.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. CPR instruction is given for specified interval after every shock delivery.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. CPR instruction is given through speaker (audio) as well as through TFT display (visual)</td>
<td></td>
</tr>
</tbody>
</table>

**Table:**

| Sl.No | Patent No       | Title of Patent                                    | 1. Improved grow-black permit for the user to enter comfortably for CPR                                                                                                                                   |                                     |
|------|-----------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|                                     |
| 5-28 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. CPR prompt will be given as audio or visual messages. A user-friendly picture explaining CPR procedure will be displayed on the front panel of the AED cover. Audio prompt will be guiding the user to enter the data input.   |                                     |
| 6-17 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. Simple and multiple shock protocols are used. 2. Shock protocol selection button. 3. Automatic shock protocol selection.                                                                            |                                     |
| 5-29 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. Three Stage algorithm classification single analysis. 2. Shock algorithm is automated. 3. After each shock it gives CPR.                                                                             |                                     |
| 6-17 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. Automatic Adult/Child selection on thoracic impedance measurement. 2. CPR instruction is given for specified interval after every shock delivery.                                           |                                     |
| 5-29 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. The Adult/Child selection is taken as an input from the user with the help of context sensitive help.                                                                                                    |                                     |
| 6-17 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. Automatic Adult/Child selection on thoracic impedance measurement. 2. CPR instruction is given for specified interval after every shock delivery.                                           |                                     |
| 5-29 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. Automatic Adult/Child selection on thoracic impedance measurement. 2. CPR instruction is given for specified interval after every shock delivery.                                           |                                     |
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| 5-29 | US2005070964A1  | Philips Electronics Application Date: 2005-03-31 | 1. Automatic Adult/Child selection on thoracic impedance measurement. 2. CPR instruction is given for specified interval after every shock delivery.                                           |                                     |
Innovative Features

- Automated shock delivery based on feedback from the impedance measurement circuit (Identification of child & Infant).
- Internal storage of event (No. of shocks delivered and Heart Rate).
- Automatic selection of languages by GPS and manually by means of visual display.
- High voltage generation of upto 2.2kV from 9/12 V battery.
Overview

- Best Practices as an institutional index
  - From NAAC literature
- Best Practices at University level
  - Case studies from Anna University
- Best Practices at Department level
  - Case Studies from Department of Instrumentation Engineering

Best Practices as an Institutional Index
- Dr. V. S. Prasad, Director-NAAC (2003-2008)
- Commendable value addition to an institution and its stakeholders
- Serve as reliable benchmarks for quality enhancement and self-improvement
- Commonwealth Higher Education Management Service (CHEMS), a sub-system of the Association of Commonwealth Universities (ACU) launched an international "University Management Benchmarking Club" for universities from the Commonwealth (1996)
- CHEMS focuses on effectiveness of university-wide processes by which results are achieved and not merely on data-based scores

Best Practices

Purpose and Intent
- Development of an understanding of the fundamentals that lead to success
- Focus on continuous improvement efforts
- Helps to close the gap between an existing practice and that of best-in-class institutions

Description:
- depends on our own limited knowledge, perspectives, contexts, interests and values
- contingent, context dependent and defy generic description
- criteria of economy, efficiency and effectiveness

Guidelines for Best Practices
- Suggested by The International Network of Quality Assurance Agencies in Higher Education (INQAAHE). The Best Practices should be:
  - Dynamic and revisited periodically
  - Recognize the diversity in cultural and historical contexts
  - Not lead to dominance of one specific view or approach
  - Promote quality of performance.
Stages in the application of Best practices

Four I and D Model (4ID):
1. Identification of best practices
2. Implementation of best practices
3. Institutionalization of best practices
4. Internalization of best practices
5. Dissemination of best practices

1. Identification of Best Practices

Variables
- Pedagogic requirements
- Global concerns
- Competencies of staff
- Local contexts
- Institutional goals
- Infrastructure facilities
- Nature of learners
- Governance requirements

2. Implementation of Best Practices

Famous quotes:
- Virtue is an activity and not a capacity
  — Aristotle
- Be the Change
  — Gandhi
- Grasp by action not by contemplation
  — Jacob Bronowski

Implementation hints:
- Focus on performance rather than promise
- Move from Words of Wisdom to Actions of Wisdom
- Find solution in a problem and NOT problem in a solution

3. Institutionalization of Best Practices

- It is an effort to make Best Practices to be institution-centric instead of individual-centric
- Innovation by an individual, when institutionalized, becomes Best Practice of the institution
- Best Practice by an individual or a department needs extra efforts where sustenance is concerned. When institutionalized, it is eased.

4. Internalization of Best Practices

Famous Quotes:
- Excellence is not an act but a habit
  — Aristotle
- We are what we do repeatedly
  — Aristotle

Internalization of quality culture:
- Making excellence an integral part of one's habit and nature
- Attitude formation
- It brings about quality education even when there are resource constraints

5. Dissemination of Best Practices

- Many theoretically best practices are not attempted due to lack of information regarding feasibility and adaptability
- Best practices are mostly borrowed practices
- Dr. Kalam insisted in a speech advocated the recording of best practices of great institutions for wider dissemination
- One of the functions of IQAC is to record and disseminate best practices of the institution
Best Practices at University level
– Case studies from Anna University

Some of the Best Practices of Anna University

1. Website of the Center for Research
   - with facility for Online Status Checking
2. Students Examination Management System (SEMS)
   - For management of examination related activities
3. Knowledge Data Centre (KDC)
   - for sharing databases and for administrative and academic transactions.
   - AUPaG
   - ADaMS
   - FIS
   - AU Webcast

1. Website of the Center for Research with facility for Online Status Checking.

List of supervisors with Recognition No.

List of Recognized Research Centres
   - List is updated periodically with code number for each Centre
   - Provision for Online application

Information regarding admission
   - Test/interview schedule is announced in the Website
   - Selection intimation Fee particulars are also announced through the Website
   - Information regarding Research Fellowships are also announced
Regulations in downloadable form

- Ph.D
- M.S by Research
- Doctorate of Science (D.Sc)

Scholar login facility

- For submission of progress reports, synopsis, thesis, etc
- For other administrative communications

Announcements through website

- All announcements along with downloadable formats are available on the website and updated periodically

Journals list

- Refereed journals listed in the website for the reference of the scholars

Evidence of Success

- Research scholars need not visit the Centre frequently.
- Confidentiality of information is maintained
- Communication Delay is avoided
- Online payment of fees
- Online authorization of the progress report by the supervisor
- Drastic reduction in Turn-around time - 5 months on an average from the time of submitting the synopsis to receipt of final reports from examiners.
- Plagiarism checking facility is available

Proposed Enhancements

- A FAQ facility can be provided for research scholars
- Links can be provided for forthcoming conferences, scholarship announcements (UGC / DST / INSPIRE)
- Supervisors can be provided links regarding calls for projects and research collaboration at national/international level.
2. STUDENTS EXAMINATION MANAGEMENT SYSTEM (SEMS)

Objectives of the Practice
• Linking the student administration of the four campuses with the Academic Courses Section, Departments and Placement cell (CUIC).
• The System is the first of its kind – with time-based locking by the Controller office
• Turn-around time of one month (on average) for publishing the end semester results from the date of last examination.
• Quick dissemination of information to all stakeholders including Vice Chancellor, Registrar, Deans of Campuses, Head of Departments, Chairpersons of Class Committees, Officials at the Placement Cell, Faculty members, Students and Parents depending on the associated role-based security.

Context and Practice
• Anna University has four campuses and 12,500 students. Timely availability of internal assessment marks allows the students to improve their performance.
• The Class Committee Chairperson can review the progress and counsel the students.
• Head of the Department can undertake necessary follow up action.
• Students can view their progress by accessing the system.
• Confidentiality is maintained.

Information availability to all stakeholders
• The higher authorities such as Vice Chancellor and Registrar will be able to view details of all students across all the four campuses.
• The Deans of the Campuses can view details of all students in their respective campuses.
• The Head of the Department can view details of all students in his/her department.
• The Chairperson of the Class Committee can view details of all students in the associated class.
• The faculty members can view details of all students in the class for the courses he/she teaches.
• Parents can view the details of their wards
• Students can login and register for courses as well as view their results

Faculty Dashboard

Students Admission
• After admission, the system provides fees details for different courses
• Students list is generated based on fees paid.
• Automatic generation of Student register numbers
Processing of Students Academic Details – University level

- Generation of course codes for the subjects as per the curriculum.
- Generation of prevention list which the section authorizes.
- List of common course instructors from which a common course coordinator will be chosen by the Academic Courses Section.
- Handling of Break of Study Information of the students.

Processing for Conduct of Examinations

- Generation of dummy numbers for students writing arrear examinations.
- Generation of Hall Tickets with photos obtained from the student identity card section.
- Handling of common courses by incorporating the normalization suggested by the common course committee.
- Allocating grades according to grades fixed by the class committee. (including moderation)
- Provision for revaluation processing. Tamper proof process since the second evaluator is chosen from a list of examiners excluding first evaluator.
- Dummy numbers are generated automatically and marks entry is by the evaluator using user name and password.
- Automatic allocation of third evaluator in case the difference in the evaluation is high.
- Generation of cumulative grade sheet for every student along with arrear marks if any. This Grade sheet also comes with the photo ID.

Link with Placement Cell (CUIC)

- Lists of all students without arrears
- List of students with the Cumulative Grade Point Average (CGPA) greater than a specified limit etc.
- This readily available information helps the Placement Section to quickly identify the appropriate students as required by the companies.

Evidence of Success

- Easy availability of relevant and accurate information to all stakeholders.
- Speedy declaration of results 10 days, and availability of grade sheets one and a half months after the last date of examination.
- Prevents unnecessary data entry, necessitates only limited number of checkpoints and thus increases accuracy of data.
- An additional aspect is the availability of history data about the students.

Proposed Enhancements

- Extra-curricular and co-curricular activities such as sports, seminar presented / organized etc. do not form part of ARMS. These aspects can be included.
- Electives preferred by students can be added
- Extension to all affiliated colleges
- FAQS regarding academic matters, regulations, placements etc. can also be added

3. Knowledge Data Centre (KDC)
Knowledge Data Centre

- To facilitate the promotion and excellence in teaching, research and governance by providing software and technology resources to Students, Staff, Faculty and Administrators of Anna University

Services Provided

- Anna University Payment Gateway (AUPaG)
  - To enable students to pay their fee online
- Student Mail
  - Student Mail facility using open-source.
  - Email can be created for a student by using the downloadable form submitted through HOD.
- Student Smart Card
- Administrative Data Management System (ADaMS)
  - Employee details such as PF can be viewed.
  - Feedback can also be given by the employees
- Faculty Information System (FIS)
  - Providing a database regarding the general and professional details of all the faculty members
- Anna University Webcast (AU Webcast)

AUPaG

- Anna University payment Gateway (AUPaG)
  - To enable students to pay their fee online

Student Mail

- Student Mail facility using open-source.
- Email can be created for a student by using the downloadable form – submitted through HOD.

SmartCard

- Details
  - Consulates Colleges - Procedure for SmartCard Application
  - University Departments - Procedure for SmartCard Application
ADaMS

- Administrative Data Management System (ADaMS) for Employees

ADaMS (contd..)

- Employee details such as PF can be viewed.
- Feedback can also be given by the employees

FIS

- Faculty Information System
  - Providing a database regarding the general and professional details of all the faculty members

AU Webcast

- Anna University Webcast provides video lectures and power point presentations on the topics pertaining to the faculty of study:
  - Electrical Engg
  - Information & Communication Engg
  - Technology
  - Mechanical
  - Management
  - Science & Humanities
- It also provides videos and instructions for KDC related information for the faculty members and students

Best Practices – Case study

Dept. of Instrumentation Engg. MIT Campus, Anna University
Documentation

- Monthly reports
- Documentation pertaining to CTRISGI criteria
- Documentation of important events as booklets
- Dissemination & Distribution of responsibilities

Workshops, Seminars, Conferences

- International Conference "Trends in Industrial Measurements and Instrumentation"
  - Conducted once every two years on an average.
- National Conference on "Recent Trends in Instrumentation & Control"
  - Conducted once a year on an average.
- Research Forum
  - Conducted once a month with expert faculty members chairing the session on turns.
- Research Scholars Day
  - Conducted on 5th September every year
- Workshops for Faculty members
  - 2 to 3 workshops conducted every year on self-supporting mode.
- Workshops for technical staff members
  - Conducted during summer vacation with internal resource persons

Student Support

- Awards Initiated by the Department of Instrumentation Engineering
  - Academic Proficiency Awards
  - Overall Performance Awards
  - Distinguished Alumni Awards
  - Best Teacher Awards
- Conduct of LIVEBEAT – Intra college technical symposium
- Conduct of INTECHO – Intercollege technical symposium

Parents & Alumni Interactions

- Parent-teacher meetings
  - Announcement of the date of next meeting is done during the current meeting.
- Annual alumni meet on the second day of INTECHO
- Alumni initiated scholarships and internships
- Industrial visits and industrial trainings organized by alumni
- Career counseling and placement training by alumni

THANK YOU!
OUTCOME BASED EDUCATION (OBE)

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Chromepet, Chennai – 44
Email: prakajit@gmail.com
Mobile No.: 944860188

Benefits of Accreditation? – Washington Accord (WA) - ACCREDITATION ADDS VALUE

• Established in 1989, as of 2007, the following countries are full members of WA: Australia, Canada, the Republic of Ireland, Hong Kong, Japan, New Zealand, Singapore, South Africa, South Korea, Taiwan, the UK, the USA, Sri Lanka and India.

• Students
• Employers
• Institutions
• Parents
• Public
• Alumni
• Country
• Catalyst for International Accreditations

1. Ability to work in a team structure.
2. Ability to make decisions and solve problems.
3. Ability to communicate verbally with people inside and outside an organization.
4. Ability to plan, organize and prioritize work.
5. Ability to obtain and process information.
6. Ability to analyze quantitative data.
7. Technical knowledge related to the job.
8. Proficiency with computer software programs.
9. Ability to create and/or edit written reports.
10. Ability to sell and influence others.

What is Outcome Based Education?

• “Outcome-Based Education means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences” - Bill Spady.

• “IT’S NOT WHAT WE TEACH, IT’S WHAT THEY LEARN”

• Paradigm Shift in Higher Education from Teaching to Learning.
• Teacher Centered Approach versus Student Centered Approach to Learning

• “Tell me and I forget. Teach me and I remember. Involve me and I learn.” - Benjamin Franklin

• An educational institution exists to produce learning.
• Experiential learning.

NO OBE = NO ACCREDITATION

OBE addresses the following key questions:

• What do you want the students to be able to do?
• How can you best help students achieve it?
• How will you know what they have achieved it?
• How do you close the loop?

10 skills that employers seek from Graduates,

• Analyze
• Solve
• Compare
• Critique
• Respect
• Diagnose
• Evaluate

OBE Versus Traditional Education – Open Loop Approach

• Traditional education process focuses on the inputs.

- Faculty members
- Curriculum
- Laboratories
- Other Resources

• Assessment mainly via end-sem-exams, Internal assessments, assignments.
• Quality control from teaching evaluation.
Outcome-Based Education Versus Traditional Education – Closed Loop Approach

- OBE shifts from measuring input and process to include measuring the output (outcome)

Program Outcomes: what students are expected to know and be able to perform.

1. Engg. Knowledge
2. Analysis
3. Investigation on Complex Problems
4. Design & Development
5. Modern Tool Usage
6. Engineer & Society
7. Environment & Sustainability
8. Ethics
9. Individual/Team Member
10. Communication
11. Project Management & Finance
12. Self-Learning

Program outcomes address Knowledge (K), Skills (S) and Attitudes (A) to be attained by students.

Key Constituents of OBE - Vision, Mission of the Department, PEOs, POs, Curriculum of the Programme & COS

B.E. (E&I) – R 2015 (CBCS)

Electrical & Electronics

Computer & Communication

Process Control & Automation

Measurement

C2

M

E2

Weigntage of Each Domain (Professional Core /ES/BS/HS)

Weigntage of Each Domain (Professional Elective)

Measurement: 17%
- Control: 15%
- Electrical & Electronics: 17%
- Computer & Communication: 17%
- Mgt & Project: 17%

Measurement: 30%
- Control: 22%
- Electrical & Electronics: 33%
- Computer & Communication: 15%
Mapping

<table>
<thead>
<tr>
<th>PEO/PO</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
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When to Assess

- Program Educational Objectives (PEOs)
  - Few years after Graduation – 4 to 5 years
- Program Outcomes (POs)
  - Upon Graduation (at the end of 4 years)
- Course Outcomes (COs)
  - At the end of each course

Assessment methods and tools

- Direct Assessment Method:
  - Exams
  - Assignments
  - Projects
  - Tutorials
  - Labs
  - Presentations

- Indirect Assessment Method
  - Rubrics
  - Alumni survey
  - Employer survey
  - Course-end survey, etc...

CO Assessment tools for each course

- Assessment Tool
  - End-of-course surveys
  - Internal Assessment and assignments
  - Mini-projects
  - Semester end performance reports
  - Course performance history plots

PO Assessment tools for all courses

- Assessment Tool
  - End-of-course surveys
  - Instructor evaluation reports.
  - Student exit survey.
  - Alumni survey
  - Advisory Board

PEO Assessment tools

- Assessment Tool
  - Employer survey
  - Alumni survey
  - Placement records, higher education records
• Assessment of the attainment of Cs
• Assessment of the attainment of POs & PSOs
Assessment of the attainment of PEOs

Modes of Delivery
• Lecture
• Learning by doing/Demonstration
• Problem based Learning
• Peer Led discussion
• Self learning

Teaching / Learning method may have to be integrated to include different delivery methods to complement the traditional lecturing method.

Outcome-Based Education – Cascade Loop

Administrative support for OBE
• Quality Assurance cell
  – OBE assessment and evaluation at institutional level
  – Program wise assessment semester/year
  – Continuous improvement initiatives
• Industrial/alumni advisory body
  – Review of the attainment of PEO,PO and suggest improvements
• Program coordinator
  – Interacting with course coordinators towards attainment of POs and review/update the changes required for curriculum contents
• Course coordinator
  – Assess the attainment of COs and review/update the course delivery and assessment methods

SELF ASSESSMENT REPORT (SAR) FORMAT
(TIER-I) (FIRST TIME ACCREDITATION)
## PART-B Criteria Summary

1. Vision, Mission and Program Educational Objectives (50)

   1.1 Vision and Mission of the Department and Institute (5)
   1.2 Program Educational Objectives (PEOs) (5)
   1.3 Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)
   1.4 State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)
   1.5 Establish consistency of PEOs with Mission of the Department (10)

2. Program Curriculum and Teaching – Learning Processes (100)

   2.1 Program Curriculum (30)
   - 2.1.1 State the process for designing the program curriculum (10)
   - 2.1.2 Structure of the Curriculum (5)
   - 2.1.3 State the components of the curriculum (5)
   - 2.1.4 State the process used to identify extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I (10)

3. Course Outcomes and Program Outcomes (175)

   3.1. Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (25)
   3.2. Attainment of Course Outcomes (75)
   - 3.2.1 Describe the assessment tools and processes used to gather the data upon which the evaluation of Course Outcome is based (10)
   - 3.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels --(65)
     - Measuring Course Outcomes attained through Semester End Examinations (SEE)
     - Measuring CO attainment through Cumulative Internal Examinations (CIE)
   - 3.3. Attainment of Program Outcomes and Program Specific Outcomes (75)
     - 3.3.1 Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)
     - 3.3.2 Provide results of evaluation of each PO & PSO (65)

4. Students’ Performance (100)

   4.1. Enrolment Ratio (20)
   4.2. Success Rate in the stipulated period of the program (20)
     - 4.2.1 Success rate without backlogs in any semester/year of study (15)
     - 4.2.2 Success rate in stipulated period (5)
   4.3. Academic Performance in Second Year (10)
4.4. Placement, Higher Studies and Entrepreneurship (30)

4.5 Professional Activities (20)

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

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

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

5. Faculty Information and Contributions (200)

5.1 Student-Teacher Ratio (STR) (20)

5.2 Faculty Cadre Ratio (20)

5.3 Faculty Qualifications (20)

5.4 Faculty Retention (10)

5.5 Faculty Competencies correlation to Programme Specific Criteria (10)

5.6 Innovations by the Faculty in Teaching and Learning (10) (The work must be made available on Institute website)

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

5.8 Research and Development (75)

5.8.1 Academic Research (20)

5.8.2 Sponsored Research (20)

5.8.3 Development activities (15)

5.8.4 Consultancy (from Industry) (20)

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

5.10 Visiting/Adjunct Emeritus Faculty etc. (10)

6. Facilities and Technical Support (80)

6.1 Adequate and well equipped laboratories, and technical manpower (40)

6.2 Laboratories maintenance and overall ambiance (10)

6.3 Safety measures in laboratories (10)

6.4 Project laboratory (20)

7. Continuous Improvement (75)

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

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

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

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

8. First Year Academics (50)

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

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

8.3 First Year Academic Performance (10)
### 8.4 Attainment of Course Outcomes of first year courses

<table>
<thead>
<tr>
<th>8.4.1</th>
<th>Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4.2</td>
<td>Record the attainment of Course Outcomes of all first year courses</td>
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</tr>
<tr>
<td>8.5</td>
<td>Attainment of Program Outcomes from first year courses</td>
<td>20</td>
</tr>
<tr>
<td>8.5.1</td>
<td>Indicate results of evaluation of each relevant PO and/or PSO if applicable</td>
<td>10</td>
</tr>
<tr>
<td>8.5.2</td>
<td>Actions taken based on the results of evaluation of relevant POs and PSOs</td>
<td>10</td>
</tr>
</tbody>
</table>

### 9. Student Support Systems (50)

<table>
<thead>
<tr>
<th>9</th>
<th>Student Support Systems (50)</th>
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</thead>
<tbody>
<tr>
<td>9.1</td>
<td>Mentoring system to help at individual level</td>
<td>5</td>
</tr>
<tr>
<td>9.2</td>
<td>Feedback analysis and reward /corrective measures taken, if any</td>
<td>10</td>
</tr>
<tr>
<td>9.3</td>
<td>Feedback on facilities</td>
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<tr>
<td>9.4</td>
<td>Self-Learning</td>
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<tr>
<td>9.5</td>
<td>Career Guidance, Training, Placement</td>
<td>10</td>
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<tr>
<td>9.6</td>
<td>Entrepreneurship Cell</td>
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<tr>
<td>9.7</td>
<td>Co-curricular and Extra-curricular Activities</td>
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</table>

### 10. Governance, Institutional Support and Financial Resources (120)

<table>
<thead>
<tr>
<th>10</th>
<th>Organization, Governance and Transparency</th>
<th>55</th>
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<tbody>
<tr>
<td>10.1</td>
<td>State the Vision and Mission of the Institute</td>
<td>5</td>
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<tr>
<td>10.1.1</td>
<td>Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring</td>
<td>20</td>
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<tr>
<td>10.1.2</td>
<td>Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies</td>
<td>10</td>
</tr>
<tr>
<td>10.1.3</td>
<td>Decentralization in working and grievance redressal mechanism</td>
<td>5</td>
</tr>
<tr>
<td>10.1.4</td>
<td>Delegation of financial powers</td>
<td>5</td>
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<tr>
<td>10.1.5</td>
<td>Transparency and availability of correct/unambiguous information in public domain</td>
<td>5</td>
</tr>
<tr>
<td>10.2</td>
<td>Budget Allocation, Utilization, and Public Accounting at Institute level</td>
<td>15</td>
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<tr>
<td>10.2.1</td>
<td>Adequacy of budget allocation</td>
<td>5</td>
</tr>
<tr>
<td>10.2.2</td>
<td>Utilization of allocated funds</td>
<td>5</td>
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<tr>
<td>10.2.3</td>
<td>Availability of the audited statements on the institute’s website</td>
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<td>10.3</td>
<td>Program Specific Budget Allocation, Utilization</td>
<td>30</td>
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<tr>
<td>10.3.1</td>
<td>Adequacy of budget allocation</td>
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<td>10.3.2</td>
<td>Utilization of allocated funds</td>
<td>5</td>
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<tr>
<td>10.4</td>
<td>Library and Internet</td>
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<tr>
<td>10.4.1</td>
<td>Quality of learning resources (hard/soft)</td>
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</tr>
<tr>
<td>10.4.2</td>
<td>Internet</td>
<td>5</td>
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Thank YOU
AU-NIRF Ranking

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Category</th>
<th>Ranking-2017</th>
<th>Ranking-2018</th>
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<tbody>
<tr>
<td>1</td>
<td>Overall</td>
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<td>10</td>
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<tr>
<td>2</td>
<td>University</td>
<td>06</td>
<td>04</td>
</tr>
<tr>
<td>3</td>
<td>Architecture</td>
<td>-</td>
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<td>4</td>
<td>Engineering</td>
<td>08</td>
<td>08</td>
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<tr>
<td>5</td>
<td>Management</td>
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<td>28</td>
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</table>

AU-NIRF-2019: ACTION PLAN

- **17.09.2018**: Registration
- **26.09.2018**: Formation of Core Committee
- **22.10.2018**: Opening of DCS Portal
- **24.10.2018**: Reset Password
- **24.10.2018**: Preliminary Meeting
- **25.10.2018**: Distribution of 1st set of Circulars
- **29.10.2018**: Distribution of 2nd set of Circulars

ACTION PLAN Contd/-

- **02.11.2018**: Coordination Committee Meeting
- **02.11.2018**: Data Collection
- **06.11.2018 to 07.11.2018**: Data Consolidation
- **13.11.2018**: Core Committee Review
- **15.11.2018 - 19.11.2018**: Internal Review
- **20.11.2018**: Final Review
- **21.11.2018 - 25.11.2018**: Fine tuning
- **26.11.2018**: Uploading the DCS in NIRF Portal
- **LAST DATE**: 30.11.2018
LOGIN- IDS & PASSWORDS

The new password for all the categories are aunirf2019 and the id remains the same

ARCHITECTURE: IR-A-U-0439
ENGINEERING: IR-E-U-0439
MANAGEMENT: IR-M-U-0439
OVERALL: IR-O-U-0439

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the officer</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Registrar</td>
<td>Chairman</td>
</tr>
<tr>
<td>2</td>
<td>Director, IQAC</td>
<td>Convener</td>
</tr>
<tr>
<td>3</td>
<td>Dr. J. Prakash, Prof &amp; Head, Dept. of Instrumentation Engg, MIT Campus</td>
<td>Nodal officer</td>
</tr>
<tr>
<td>4</td>
<td>Deputy Director, IQAC</td>
<td>Member</td>
</tr>
<tr>
<td>5</td>
<td>Dean – CEG Campus</td>
<td>Member</td>
</tr>
<tr>
<td>6</td>
<td>Dean – MIT Campus</td>
<td>Member</td>
</tr>
<tr>
<td>7</td>
<td>Dean – ACT Campus</td>
<td>Member</td>
</tr>
<tr>
<td>8</td>
<td>Dean – SAP Campus</td>
<td>Member</td>
</tr>
<tr>
<td>9</td>
<td>Director – P&amp;D</td>
<td>Member</td>
</tr>
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</table>

FORMATION OF CORE COMMITTEE-1

FORMATION OF CORE COMMITTEE-2

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the officer</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Director – CTDT</td>
<td>Member</td>
</tr>
<tr>
<td>11</td>
<td>Director – Research</td>
<td>Member</td>
</tr>
<tr>
<td>12</td>
<td>Dr. N. Thangaraj, AP / IST</td>
<td>CEG Campus</td>
</tr>
<tr>
<td>13</td>
<td>Dr. K. Kulothungan, AP / IST</td>
<td>Ind Engg</td>
</tr>
<tr>
<td>14</td>
<td>Dr. K. Padmanabhan Panchu, AP / Ind Engg</td>
<td>Coordinators</td>
</tr>
<tr>
<td>15</td>
<td>Dr. S. Neelavathi Pari, AP / CT</td>
<td>MIT Campus</td>
</tr>
<tr>
<td>16</td>
<td>Dr. Kalaichelvan, Prof. &amp; Head, Dept of Ceramic Technology</td>
<td>ACT Campus</td>
</tr>
<tr>
<td>17</td>
<td>Dr. K.R. Sitalakshmi, Professor, Dept of Architecture</td>
<td>SAP Campus</td>
</tr>
<tr>
<td>18</td>
<td>Dr. Priya Sethuraman, DR – Finance</td>
<td>Admin</td>
</tr>
</tbody>
</table>

NIRF Parameters for Ranking of Institutes-1

NIRF Parameters for Ranking of Institutes-2
NIRF -2018 PARAMETERS-1

- Teaching, Learning & Resources (100)
- **Student Strength** including Doctoral Students (SS)-20
- Faculty-student ratio with emphasis on permanent faculty (FSR)-30
- Combined metric for Faculty with PhD (or equivalent) and Experience (FQE)-20
- Financial Resources and their Utilization (FRU)-30

14 December 2018

NIRF -2018 PARAMETERS-2

- Research and Professional Practice (100)
  - Combined metric for Publications (PU)-35/40/40
  - Combined metric for Quality of Publications (QP)-40/40/40
  - IPR and Patents: Filed, Published, Granted and Licensed (IPR)-15/15/0
  - Footprint of Projects and Professional Practice and Executive Development Programs (FPPP)-10/5/20

*University/ Engineering/ Management

14 December 2018

NIRF -2018 PARAMETERS-3

- Graduation Outcomes (100)
  - Combined % for Placement, Higher Studies, and Entrepreneurship (GPHE)-0/40/40
  - Metric for University Examinations (GUE)-60/15/30
  - Median Salary (GMS)-0/25/30
  - Metric for Number of Ph.D. Students Graduated (GPHD)-40/20/0

*University/ Engineering/ Management

14 December 2018

NIRF -2018 PARAMETERS-4

- Outreach and Inclusivity (100)
  - Percent Students from other states/countries (Region Diversity RD)-30/30/30
  - Percentage of Women (WF) + (WS) + (WA)-25/25/25
  - Economically and Socially Challenged Students (ESCS)-25/25/25
  - Facilities for Physically Challenged Students (PCS) Perception-20/20/20

*University/ Engineering/ Management

14 December 2018

NIRF -2018 PARAMETERS-5

- Peer Perception:
  - Employers and Research Investors (PREMP)-25/25/25
  - Peer Perception: Academics (PRACD)-50/50/50
  - Public Perception (PRPUB)-25/25/25

14 December 2018

NIRF -2018 WEIGHTAGES

- Teaching, Learning & Resources-0.3
- Research and Professional Practice-0.3
- Graduation Outcomes-0.2
- Outreach and Inclusivity-0.1
- Perception-0.1

14 December 2018
STUDENT DETAILS

- UG Sanctioned intake
- UG Actual strength
- PG Sanctioned intake
- PG Actual strength
- Ph. D students enrolled
- Ph. D students on roll
- Ph.D Students graduated

DEANS’ Office

OTHER DETAILS

- PLACEMENT DETAILS (CUIC)
  - Names of companies, number of students recruited by each, maximum, minimum, average and median salary, offered by each

- HIGHER STUDIES DETAILS (respective Depts)
  - Names of Institutions into which their students have been admitted (indicating the number of students in each).

- FACULTY DETAILS
  - (Student Staff Ratio, Qualification, Experience, DR-Personnel)

FINANCIAL RESOURCES (DR Finance)

- CAPITAL
  - Library
  - Equipment
  - Workshop
  - Studio

- OPERATIONAL
  - Salary
  - Maintenance
  - Seminar/
  - Workshop/
  - Conference

EARNINGS from R & D

- Sponsored Research (CTDT & Research Centres)
- Consultancy (CTDT)
- Grants (P & D)
- IPR (CIPR)

First Set of 9 Circulars
Deans, HODs, ACOE-UD, D-P & D, D-Research, D-CTDT, D-CIPR, D-CUIC, DR- Finance

SECOND SET OF 21 CIRCULARS ALL THE CENTRE DIRECTORS & HODs