

Proposal for Phase-II of EICT Academies: Detailing of activities & Methodology

1. Introduction

For long, there has been a focus on ESDM & IT, metamorphizing into "Atm-Nirbhar Bharat (आत्म-निर्भर भारत)" and "Digital India" for ESDM/IT domains. Human resources development to serve these missions is a crucial requirement for taking ahead these objectives and mission.

In the current running phase, EICT Academies have successfully achieved several goals envisaged thereon.

For next phase, we believe that we can leverage the seven E&ICT Academies' joint efforts for the broader proliferation of FDPs and PAN-India coverage, including Faculty/ Teachers/ Mentors/ Professor of Practice in Higher Education Institutions (HEI).

Academies have gained the following **strengths** through their efforts during phase I.

- At each of the academies, we have identified a set of experts/speakers from IITs/NITs/IIITs/industries in respective areas; present academies can handhold tier-2/tier-3 institutions for further spreading the umbrella of FDPs, enabling them to host such programmes in their locality.
- Each of the academies has amassed many resources- recorded lectures, relations with experts, lab infrastructure, and reach to faculty who worked as coordinators or attended as participants. Academies have contacts with several faculty in other HEIs who were coordinators/participants;
- Our assessment/certification benchmarks have matured- Attendance, quizzes, assignments, hands-on; the process of assessment/certification is similar across all academies, especially it is uniform for jointly organized (global) FDPs. Our collaboration & efforts for joint programmes have matured.



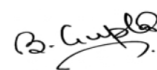
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- Of various FDPs, already conducted in emerging/niche areas, several were led by speakers from industries. Academies have also offered FDPs on technology support for teaching, learning attracting faculty from diverse disciplines.
- Until now, the offered FDPs have attracted participants with sincere intention, whereas the assessment/certification process has ensured that good performance is rewarded.
- With the ministry's help, we now have a reach to UGC/AICTE and state administration and affiliated colleges. Further, Academies efforts need to be endorsed by these bodies by approving FDPs for promotions and equivalent to pre-requisite courses for PhD.
- Self-paced programmes- we can leverage a repository of lectures delivered in live e-programmes
- IIT Kanpur has developed a platform for self-paced programmes to serve multiple purposes- content hosting, user management, assessment/progress tracking, and accounting.
- Other academies have gained experience conducting live online programmes through a professional version of video conferencing platform & utilizing an available version of open-source LMS- either multicasting to remote centres or an individual participant. Before this, we exploited video conferencing hardware setup at each of our institutes to connect through the NKN backbone and connecting successfully to many spoke-centre with massive participation.

Following **opportunities** exists for academies.

- The online mode of education would now co-exist with mainstream and would be there post-Covid-19 too.
- Outreach to faculty of tier-2/tier-3 institutions & HEIs
- Interaction with industries to understand the real-life problems
- The faculty of other HEIs may be the catalyst to spread the reach of FDPs, in the hub-n-spoke model
- Continuation with more stress on the pedagogy of technology and provide enhanced research orientation to faculty
- Continuation with FDPs on technology support for teaching, learning; conduct workshops on issues in emerging areas
- The Academies have arrived at a certain standard procedure for certification.
- Sharing of resources amongst academies



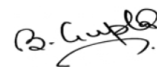
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- Synergy with efforts of programmes under GIAN, PMMMNMTT, NPTEL

The existing **challenges** as well as faced earlier by academies, are as follows.

- The target number for in-person mode programmes to be decided more realistically & rationalized
- The number of trained faculty in e-mode, whether synchronous or asynchronous, is usually much larger than the number for in-person mode vis a vis financial implication.
- With FDPs offered by other agencies- ATAL, PMMMNMTT, GIAN; we have difficulty attracting more extensive participation now.
- Insufficiency of finances/grants have to be supplemented by the respective academy's revenue.
- Academies need formal support/acknowledgement from the higher education commission, AICTE/UGC, for the benefit to be extended to participants in institutions under the aegis of these bodies (for faculty working in Electronics & IT/Items fields)

2. Need/Rationale for phase-II

- The country economic growth & defence needs are technology-driven; especially, support of electronics & computer technologies is crucial.
- Our country has a large number & vast base of engineering/technology institutes, students & faculty.
- Our country needs to reinforce software human resources capacity building and the continuation of the policy of motivating serious efforts for electronic and semiconductor manufacturing.

3. Goals/Major objectives for phase-II

- The more comprehensive and pan-India proliferation of FDPs with coordinating efforts from motivated faculty of tier-2/tier-3 institutes & HEIs and making them capable, innovative and research-oriented
- Preparedness of stakeholders for being technology ready- training in state of the art, emerging areas & industry-specific areas



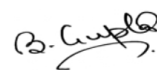
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- Conceptualize a cloud platform for content management, assessment & certification, participants record management, accounting/finances, CPS (cyber-physical systems enabled); also facilitate content creation by faculty & integration of other platforms, e.g. virtual labs. These would allow hosting online self-paced and online live programmes apart from enabling contents support to classroom programmes.
- Create and deploy a framework for self-assessment of activities by principal academies, based on measuring stated outcomes and on achieving benchmarks

4. Methodology/Action Plan to achieve goals

4.1 OVERALL ADMINISTRATIVE FRAMEWORK & GENERAL MODALITIES

It is envisaged that the second phase of the project envisages that more academies be established through a hub and spoke model, with a mix of centralizing/decentralizing the activities based on the strengths of both the old and new proposed academies.

We propose to prepare stakeholders for being technology ready especially in the fields of Electronics & IT as there is an increasing inclination toward online teaching/learning. This includes conceptualizing a common cloud platform for content management, assessment & certification, participants record management, accounting/finances, CPS (cyber-physical systems enabled); also facilitating content creation by faculty & integration of other platforms, e.g. virtual labs. These would allow hosting of online self-paced and online live programmes apart from enabling content support to classroom programmes.

EICTA's with their significant academic expertise and industry reach through their highly accomplished alumni can bring in a significant knowledge pool to rapid skilling of the human resource both at the teacher, student and professional level.

Proposed Governance Model

- 4.1.1 PSRG with JS, MeitY as Chairman, for overall guidance & monitoring-
We propose that the co-chairman of this committee could be ex-officio the Chairman of the below-mentioned advisory council.



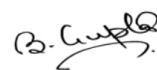
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- 4.1.2 Academic Advisory Council (AAC)- constituting of CI's from the 7 hub-academies under a Chairman cum Convener to be nominated from one of the 7 academies on a 2-year rotation basis with the JS Miti's nominee as the Co-Chair.
- 4.1.3 Any new academies in Phase II in this hub and spoke model may be invited as a special invitee in case of relevant agenda pertaining to the same when being taken up in the meetings
- 4.1.4 This academic advisory council will have the same role and responsibility of the existing academic council consisting additionally of nominees from various government and industry bodies.
- 4.1.5 A two-tier structure is proposed as below with both centralized and decentralized components. The AAC would take up the role of overall governance of Hubs and Spokes, both.

(A) Tier 1 (Hub)

- a. Academic & Governance: AAC
- b. Outreach, Registration & Delivery: publicity, reaching out to experts; and broad arrangements for the delivery, maybe on a cloud platform; revenue collection & payments; to be performed by a hub-academy (Centralized)
- c. Collection & Payments: to be performed by a hub-academy (Centralized)
- d. **Delivery: De-Centralized**

(B) Tier 2 (Spoke)

- a. Academic & Governance: AAC Council
- b. Outreach, Registration & Delivery: logistics for participants-offline/online; logistics for connectivity amongst spokes and participating institutes; interacting with participants for attendance, assessment etc; real-time support to speakers; to be performed by a spoke-academy (Centralized)
- c. Collection & Payments: disbursement of payments for logistics; to be performed by a spoke-academy
- d. **Delivery: De-Centralized**

- 4.1.6 Each of the hubs would have with them the spoke-academies attached, e.g. 4 to 8 spokes academies. Each of the hubs strives to enhance the



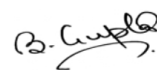
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research eco-system at these spoke institutes, while the spokes take up the skilling part. The details are presented at para .

4.1.8 We propose to create e-learning infrastructure at each of the spoke-academies.

4.1.9 Conceptualize a cloud platform for content management, assessment & certification, participants record management, accounting/finances, CPS (cyber-physical systems enabled); also facilitate content creation by faculty & integration of other platforms, e.g. virtual labs. These would allow hosting online self-paced and online live programmes apart from enabling contents support to classroom programmes.

4.1.10 Create and deploy a framework for self-assessment of activities by principal academies, based on measuring stated outcomes and on achieving benchmarks

4.2 TRAINING PROGRAMMES, AND RESEARCH ECO-SYSTEM

4.2.1 We propose to address audience/participants from all walks of life- faculty, working professionals- entry level and mid-career, students especially from final year undergraduate, casual learners, skill seekers etc.

4.2.2 Propose to conduct Targeted FDPs in niche/state-of-the-art technological areas, considering technology-roadmap and integration of industry-specific requirements in academics.

4.2.3 Also, propose to offer Skill development and entrepreneurship development programmes for recent graduates with cognizance of industry requirements

4.2.4 Engaging medium and small-scale industries for their training requirements, skill upgradation

4.2.5 The training modules would range from short term certification, and advanced certification to long-term PG level certification, diploma and even degrees, to be planned well. These programmes would be of a good blend of synchronous as well as asynchronous programmes- Synchronous programmes offer live lectures and hands-on whereas asynchronous programmes depend on on-demand videos and automatic tracking of participants.

4.2.6 **Working modalities** for degree/diploma offering currently require approval from Senate of individual Senate. It would be appropriate and highly appreciable if Ministry (MeitY) could grant mandate to academies to run Diploma/degree courses on their own. And



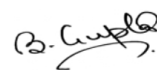
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academies seek better recognition of their efforts by AICTE/UGC/MoE, while these higher education bodies strongly recommend faculty/students to attend the academy programmes. We would invite support for our efforts from Industry associations of our country like NASSCOM/FICCI/CII and government Sector Skills Councils. Help from MeitY to approach AICTE/UGC as well as more for IIT-council / IIIT-council/ NIT-Council is much needed and highly appreciated. An indicative list is provided in Annexure-I.

- 4.2.7 Standardization of FDPs, including assessment/ certification etc., across the E&ICT Academies, including the spoke institutions.
- (i) Academies may engage with ISO, BIS and QCI like agencies and Sector Skills councils- Electronics (ESSC), Telecomm (TSSC) etc.
 - (ii) Other professional bodies endorsement may be an option- like from IEEE, IETE, IESA, IE(I) etc.

- 4.2.8 We depend on NEP 2020 vision, for effecting credit transfer and utilization so that a certain number of courses completed at different times would also lead to advance certification, diploma etc. Academic Bank of Credit could be realized through Digi-Locker facility. We contemplate that EICT Academy conducted programmes would get recognition like those for other MooC/online courses/NPTEL etc.

- 4.2.9 Nomenclature of programmes-

- (A) The unit of counting efforts by a candidate is CREDIT: 1 credit for 10-12 Hours; 2 credits for 20-24 Hours; 3 credits for 28-36 hours; 4 credits for 40 -48 hours etc. and so on. For example, for a typical 80 hours of effective engagement, it could be 8 credits.
- (B) All other certification/diploma/degree programmes or finishing schools (for final year undergraduates) could thus be spelled out in terms of credits covered.
- (C) **Programmes for Working Professionals/Students-** We propose programmes for working professionals from PSUs/defence/Govt Officials/Industries, leading to certificate, diploma, degree. This would include adhoc as well as regular-degree programmes. There will be two different types for programmes for working professionals.

- (i) Long Term Programmes
- (ii) Short Term Courses



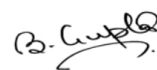
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Long Term Programmes would consist of a sequence of 4-5 different courses in a certain specialization. The duration of each of such courses would be 60-70 hours. These will be typically called. e.g.

“E&ICT Specialization in VLSI Design”

“E&ICT Specialization in AI and ML”

The participant earns total of 6 to 8 credits through various individual certificates by attending and completing those respective courses successfully. This could be offered as Advanced Certification programme. The further earning of credits could lead to diploma. A dedicated degree programmes are also proposed to be floated.

Short Term Courses would be of 1-week duration with 3-4 hours/day OR 2 weeks duration in the evening time, each day with not more than 1.5 to 2.00 hours. (Total duration of course: 15-20 hours, 2credits)

“E&ICT Course on VLSI Design”

“E&ICT Course on AI and ML”

Method of delivery will be mostly online with 1-2 days on-site hands-on or practice sessions if needed.

(D) Programme for academicians

In this case the long-term programmes and short-term programmes will be called

- (a) Refresher Courses (80-90 hours programmes, 8-credits)
- (b) Faculty Development Programmes (40 hours programmes, 4-credits)
- (c) Research Orientation Programmes (20 hours programmes, 2-credits)
- (d) Intensive Workshops (10 hours programmes, 1-credit)
- (e) Niche area initiation workshops (1-day/4-5 hours, 0.5 credit)

Method of delivery could be online/offline and blended. A candidate completing some definite numbers of credits say equivalent to advanced-certificate OR diploma, would be conferred alumnus status of the respective academy.

4.2.9 The programmes would be designed for casual learners and skill enhancement seekers for relevant topics and fields- like Android programming, Mobile handset, Python and libraries etc.



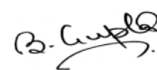
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4.2.10 Research Eco-systems: We propose that each hub strives to enhance the research eco-system at these spoke institutes.

- (i) Support to PhD research at other institutes- offering equivalent courses satisfying credit requirements (tailored FDPs, equivalent to 3 credits on relevant topics); Faculty at Academies may offer joint supervision, be part of research committees at spoke institutes. Academies may create an academic bank of credits to facilitate these faculty to complete postgraduate/PhD programmes.
- (ii). Motivated faculty at other institutes may be invited as doctoral and post-doctoral candidates at their respective institutions of Academies.

4.2.11 We propose to enable the creation of infrastructure at Hubs for R&D activities on focused themes as per the strength of the academy demonstrated in the current phase through the courses offered by them in specific areas: these will be utilized by the spokes and their partners' institutions.

4.3 FUNCTIONAL & FINANCIAL MODALITIES FOR - MENTOR ACADEMIES, AND FOR MENTEE INSTITUTES OF MENTOR ACADEMY

4.3.1 Models exist elsewhere- TiH, INUP, etc.

- a. A model for mentor & mentee institutes relation
- b. Financial disbursement from Hub to all its attached spoke academies
The financial model could be adopted from other schemes- like TiH, SMDP-C2SD, INUP and other schemes of MeitY. A one-time grant could be provided to hub as well as spoke to create e-infrastructure. Further, a block fund could be provided to Hub Academy to be disbursed to the attached Spokes on a requirement basis.

4.3.2 Skilling budget- The fund appropriation model could be based on *person-credit model*.

For example, a participant attending a 10-hours/1-credit course would constitute a 1-person-credit; a participant attending a 40-hours/4-credit programme would constitute 4 person-credits. Accordingly, a per person-credit allocation may be contemplated. This would facilitate and motivate to organized research-oriented short-term programmes also. The minimum quantum may be taken as 0.5 person-credit.



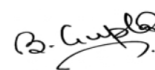
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- 4.3.3 Other associated expenditures need to be counted towards overall funding. The details are being worked out for hub and spokes both. For each of the academies, we contemplate a centre being setup with the required resources and manpower required for sustaining the Academy in the future.
- 4.3.4 Approach for broader proliferation of FDPs and inclusion of faculty from tier-2/tier-3 institutes
- Telescopic Mentor development/training: Training the trainers programmes in IEP (Instruction enhance programme) mode with the methodology of "How to teach" for faculty of HEIs; we could primarily focus on the University curriculum of the tier-2/tier-3 institute for specific basic/core subjects or topics
 - Offer workshops for mentee-coordinators on how to conduct a training programme effectively.
 - Continued engagement with faculty being mentored; Engaging them to have feedback from their own teaching experience
 - Giving her/him the opportunity to act as a speaker (who have proven their aptitude)
- 4.3.5 Academy at IIT Kanpur has developed a platform for hosting self-paced programmes. Their additional inputs are presented in Annexure-II. Other academies are making efforts to adopt one of the available LMS for hosting their programmes.
- 4.3.6 Considering that NEP 2020 provides freedom to faculty to design their own curricular and pedagogical approaches within the approved framework, including textbook and reading material selections, assignments, and assessments; the FDPs may also focus on empowering the faculty to conduct innovative teaching, research, and service as they see best, which will be a crucial motivator and enabler for them to do truly outstanding, creative work.
- Mode of programmes to be more on IEP – Instruction Enhancement Programme mode covering pedagogical aspects, i.e. training on "how to teach a course."
 - Encouraging and supporting the faculty to offer the programmes in vernacular languages; programmes on an amalgamation of specializations- Arts & computers, Law & Engineering, commerce & blockchain.
- 4.3.7 Considering that Covid-19 has caused disruptions for colleges/ universities and courses are being delivered online to maintain continuity in teaching, there may be a need for adequate training of

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Faculties in applying the use of technology to teaching, developing e-learning activities, etc.

- (i). Sensitizing them and helping them in developing infrastructure for online education
- (ii). Academies would continue offering FDPs on ICT for teaching, learning, and like courses more frequently.
- (iii). Increased focus on Hands-on; stress on the usage of open source tools, e-labs.

4.3.8 Sharing of Online infrastructure facilities across academies for maximum utilization of resources, including recorded videos, smart classrooms, and virtual Labs.

- (i). Sharing amongst Academies is always desired to optimize the usage of facilities; Academies have developed various diverse facilities; IIT Kanpur has developed a platform that is more than a content management platform.
- (ii). Envisioning & developing a national platform for hosting Open Educational Resources (OER) in the domain of Electronics & ICT
- (iii). Handholding with existing companies offering e-platforms like EDX, Coursera, NPTEL and SWAYAM

4.3.9 Synergizing joint efforts with other FDP programmes by Central & State level agencies, such as ARPIT, NITTTR, NMEICT, RUSA, PMMMNMTT, DIKSHA etc.

- (i). A consortium of Educational Communication (CEC), GIAN, NPTEL, e-Yantra, Virtual Labs, Spoken Tutorials (IITB), etc and should leverage their resources.
- (ii). Academies may focus on relevant areas which are supplemental to areas covered by other programmes like PMMMNMTT, ARPIT, NPTEL.

5. Outcomes/Deliverables

We propose to define clear-cut benchmarks, including the yardsticks and benchmarks to measure these outcomes. These benchmarks could help in the evaluation of outcomes in the short term or long term.

- Capable faculty in other HEIs (long term)
- Frequency of Curriculum revision & updated schemes in institution of mentees



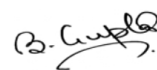
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- Quality and number of internships & Placement of students of mentee-teachers in the specific areas
- Enhanced activities of mentee faculty for outreach- offering Training programmes in the specific fields, publications, patents, technology transfer and innovation in teaching/learning/lab-development
- Efforts for higher studies, entrepreneurship by students of mentee-faculty

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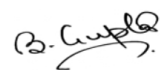
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Annexure-I

Emerging areas/Industry-specific areas

Emerging areas covered so far by Academies while offering FDPs-

- Intelligent Embedded Systems, Internet of Things (IoT)
- Machine Learning (ML), Artificial Intelligence (AI), Data Science
- 3D Printing
- Robotics, Autonomous vehicles, Smart Grids
- Quantum Computing, cyber security
- Chip design, fabless design flows; Processor (RISC/CISC) design; Chips for 5G/6G wireless, SoC design & verification
- Wireless communication – 5G/6G

Areas that could additionally be focussed on (not limited to)-

- Augmented Reality (AR)/Virtual Reality (VR)
- Medical Electronics & intelligent systems support
- Drone- Unmanned Aerial Systems (UAS) or remotely piloted aircraft systems (RPAS)
- AutoCAD, Smart Buildings, Geographical Information Systems
- Exascale computing



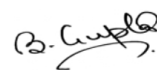
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Annexure-II

Replies to some general queries

Following are replies to general queries explaining/justifying the activities/methodology in the forthcoming Phase-II.

Q1. Internal policies and guidelines on faculty training (if any) are being followed in IITs, IIITs, NITs (including Central/ State Universities/ HEI) for career promotions and knowledge upgradation. (a). the frequency of training/ refresher training that is normally attended by faculties; (b). time gaps between two different training (if any); (c) training undertaken under institutional policy framework or based on individual aspirations; etc.

A1. The faculty at IITs/NITs/IIITs have their own motivation to attend training programmes in areas of their interest. Faculty at tier-2/tier-3 are required to go through certain numbers/duration of training programmes according to AICTE/UGC guidelines for promotion and development of faculty competence.

We may refer to (i) AICTE/UGC gazette notification on guidelines for faculty promotion, (ii) NIT Statues and Recruitment Rules (RR) for faculty, and (iii) IITs call for the faculty recruitment & screening guidelines to observe the emphasis those institutes put on faculty to pursue training programmes.

Q2. How would E&ICT Phase II be different when compared with ATAL Academy (AICTE) or other similar Govt. funded projects, and what provisions can be considered under E&ICT Phase II to establish its USP/ uniqueness?

A2. EICT Academies programmes have been initiated under the purview of the Academic Council, much before such an idea was explored by any other agencies. Utilization of NKN for the wider spread was the first one proposed by the Academic council /PRSG and implemented by Academies much before the onset of COVID-19. Academies are now endowed well with resources for the same.

In phase II, we contemplate handholding of tier-2/tier-3 institutes, to have a much wider spread to reach out to beneficiaries (faculty/students)

Gaurav Trivedi

Gaurav Trivedi, IITG

Sanjeev Manhas, IITR

Aojha

Aparajita Ojha, IIITDMJ

B. V. Phani, IITK

B. V. Phani, IITK

B. Gupta

Bharat Gupta, NITP

Vineet Sahula, MNITJ

Vineet Sahula, MNITJ

R. B. V. Subramanyam, NITW

Convener cum Member Secretary

Members & CIs, Sub-committee of Academic Council

Annexure-III

Inputs from Academy at IIT Kanpur

Gaurav Trivedi

Gaurav Trivedi, IITG



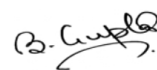
Sanjeev Manhas, IITR

Aojha

Aparajita Ojha, IIITDMJ



B. V. Phani, IITK



Bharat Gupta, NITP



Vineet Sahula, MNITJ

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Draft Notes on Concept Paper to explore the conceptualization of Phase – II of the E&ICTA Scheme

- Leverage the 7 E&ICT Academies for wider proliferation of FDPs, especially in tier-2/ tier-3 colleges in the country
 - PAAS Implementation for all interested colleges, with content mirrored on the local servers customised to their need, regular augmentation and updation of content with changes in tech space
 - Identifying and permitting good Faculty to develop and share courses on the platform in modular form with a royalty based system.
 - Allowing selected Faculty locally to run training workshops within their region with support from the hub academy in terms of resources, platform access etc.
- Targeted FDPs in niche/ state-of-the art (SOTA) technological areas, considering future-of-work and integration of industry specific requirements in academics.
 - Small Modules to be designed with access to cyber physical systems to augment the learning in SOTA technological areas
 - Guiding and handholding faculty in these institutions for joint projects and research in these advanced areas
- PAN-India coverage in hub-n-spoke mode for deeper proliferation, including inclusion of Faculty/ Teachers/ Mentors/ Professor of Practice, etc. in Higher Education Institutions (HEI).
 - Each EICT academy should replicate their delivery platforms and augment delivery through a PAN global faculty identified and onboarded.
 - These faculty may be requested to design and/or share their existing course modules including ppt's /videos/MOOC's, which can be shared with targeted faculty members
 - Regional Language delivery capacity may also be augmented for the benefit of both faculty and students in this institutes
 - Faculty leaders in these institutions identified and all support to be provided by the nodal academy to facilitate their delivery with a continuous and dynamis engagement model
 - Resources include but not limited to, software, cloud access, virtual class rooms, pedagogy, audio/video clips, ppt's, open source resources etc
 - Faculty may be provided some subsidization in registering for eMasters programs of the nodal academy's parent institute
- Emphasis on Motivated, Energized, and Capable Faculty to ensure that teaching, research, and service in Universities/ HEIs remains at the desired level.
 - Faculty may be invited to join as Post Doctoral Fellows and PhD programs of the nodal academies both in regular and distant mode
 - Faculty may be invited to collaborate on Short Term Industry Assignments
- Considering that NEP, 2020 provides freedom to Faculty to design their own curricular and pedagogical approaches within the approved framework, including textbook and reading material selections, assignments, and assessments, therefore FDPs may also focus on empowering the faculty to conduct

innovative teaching, research, and service as they see best, which will be a key motivator and enabler for them to do truly outstanding, creative work.

- Regular modules on Innovations in Teaching should be designed and delivered
- Workshops/Colloquia/Seminars/Conferences where faculty can share their teaching innovations on a regular basis and compare notes with their colleagues
- Repository of teaching innovations and delivery should be created
- Develop courses of “How to teach X” instead of a course on “X” itself.
- Help the faculty motivate a topic, create assignments, hands-on and share
- Collate them into a resource bank for access to all faculty
- Development of DIY kits for experiments
- Considering that Covid-19 has caused disruptions for colleges/ universities and courses are being delivered in online mode to maintain continuity in teaching, there may be a need for adequate training of Faculties in applying the use of technology to teaching, developing e-learning activities, etc.
 - COVID-19 can not be on the long term agenda, however development of infrastructure is necessary as it provides flexibility for participants to attend the courses from their hometown.
 - Classroom (offline) for hands-on lab courses.
 - Creation of Cyber Physical systems for real life experience
 - Create study centres at major locations.
 - Subsidised access to eMasters and other short-term courses
- Standardization of FDPs including assessment/ certification etc across the E&ICT Academies, including the spoke institutions.
 - Best practices in this regard from all academies may be collated and shared
 - A discussion in this regard by all academies to arrive at a assessment/certification framework should be facilitated
- Defining clear-cut outcomes, including the yardsticks and benchmarks to measure these outcomes.
 - Develop a detailed weekly schedule.
 - Continuous evaluation using quizzes
 - End of course exam
 - Completion Certificate only for successful candidates, participation for others (Or graded evaluation excellent, good, satisfactory, *no certificate*)
- Sharing of Online infrastructure facilities across academies for maximum utilization of resources, including recorded videos, smart classrooms, virtual Labs etc.
 - Developing virtual labs is needed. Also, create videos to explain installation, usage etc. Intelligent systems for automated evaluation, feedback, and grading.
- Synergizing common efforts with other FDP programmes by Central & State level agencies, such as ARPIT, NITTTR, NMEICT, RUSA, PMMMNMTT, DIKSHA etc.
 - Development of a dedicated Faculty Engagement portal on the lines of WikiPedia
 - FDP's
 - Workshops
 - Resource Sharing etc
 - All academies video content from their delivery may be edited, augmented and uploaded on a portal similar to edx platform.
 - Faculty should be allowed to upload their content on the portal under the CC license
 - Revenue sharing model to be put in place if the content is used for paid courses