

## INDIVIDUAL COURSE DETAILS

### ITEC Program on

### **Strengthening Technical and Vocational Education & Training (TVET) to meet The Sustainable Development Goals (SDGs) of United Nations**

#### Justification to conduct four weeks Program

The **Sustainable Development Goals(SDGs) of United Nations (UN)** are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 Goals are all interconnected, and in order to leave no one behind, it is important that we achieve them all by 2030.

**Sustainable Development Goal 4** is about **quality education** and is among the 17 Sustainable Development Goals established by the United Nations in September 2015. The full title of SDG 4 is "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". By achieving SDG 4, we will be able to achieve SDGs 1, 2 and 3.

**TVET (Technical and Vocational Education and Training)** refers to all forms and levels of education and training which provide knowledge and skills related to occupations in various sectors of economic and social life through formal, non-formal and informal learning methods in both school-based and work-based learning contexts. To achieve its aims and purposes, TVET focuses on the learning and mastery of specialized techniques and the scientific principles underlying those techniques, as well as general knowledge, skills and values. TVET serves multiple purposes. A key purpose is preparation of youth for work. This takes the form of learning and developing work related skills and mastery of underlying knowledge and scientific principles.

**Skill India Mission** is a Government of India scheme launched in 2015. It is an umbrella scheme that has many skilling schemes and programs under it. The chief objective is to empower the youth of the country with adequate skill sets that will enable their employment in relevant sectors and also improve productivity. There is a drastic need for academicians in different parts of the world to be competent in their teaching abilities, knowledge, and be encouraged to upgrade their skills.

Once the International participants develop the skills and values needed for TVET, they will be able to integrate the TVET skills in their country. In turn, the Trainees will train more officials/ faculty members/ students in their country. It is therefore, imperative to understand that training and development do not only enrich academic skills and performance of academics in their core disciplines, but these developmental programmes also motivate faculty to work towards reaching the set goal of the institution.

As part of this course, it is proposed to take the participants to Academic Institutes related to TVET and Training Institutes related to TVET, Industries developing the TVET Skills, Field visits/ Study visits and Cultural visits. It is planned to organize International Seminar(s) and develop skills of few participants to present during the Seminar.

This training program will be delivered in the cutting-edge technologies, imparting high pedagogical skills, capacitating and developing academic staff in terms of technical skills and providing internationally recognised teaching and learning methods/ techniques, which are critically needed to support the development of new curriculum and sustainability of teaching and learning within the institution. Our Institute four weeks programs made significant contributions to implement technological innovations by the International participants in their respective institutions through gained knowledge and equipped the human resources to deliver effective courses in their respective domains across different parts of the world.

In view of the above and to develop the adequate skills to the participants, it is requested to consider to have four weeks Program for this ITEC Program on “Strengthening Technical and Vocational Education & Training (TVET) to meet The Sustainable Development Goals of United Nations”.

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| <b>A. Name of the Institute</b>  | <b>NATIONAL INSTITUTE OF<br/>TECHNICAL TEACHERS TRAINING AND RESEARCH</b><br>[Ministry of Education, Government of India]<br>Taramani, Chennai – 600 113, INDIA.   |
| <b>B. Title of the Course</b>  | <b>Strengthening Technical and Vocational Education &amp;<br/>Training (TVET) Systems to meet the Sustainable<br/>Development Goals(SDGs) of United Nations</b>  |
| <b>C. Course Duration</b>  | Four weeks<br><br>22 <sup>nd</sup> January 2025 to 18 <sup>th</sup> February 2025<br><b>(Physical Mode)</b>  |
| <b>D. No. of days of Training</b>  | 28 days  |
| <b>E. Eligibility Criteria for Participants</b><br><br>1. Educational Qualification<br><br><br>2. Work Experience<br><br><br>3. Age Limit<br><br>4. Target Group | Graduate Degree/ Diploma in Science / Education /<br>Management / in Engineering / Technology/TVET and<br>good proficiency in spoken, written and comprehension<br>of English.<br><br>Working Experience related to Education / TVET /<br>Technical Education / Vocational education / Industrial<br>Education / Technical School / Polytechnic / University /<br>Engineering College /Management Institute<br><br>less than 55 years<br><br>Government Policy Makers/ Administrators / Officials<br>from the Ministry of Education / Higher Education /<br>Technical Education / Vocational Education/ Human<br>Resource Development / Labour Ministries / TVET<br>related Ministries / Academic Leaders / Executives /<br>Educational Administrators / Directors/ Heads / Senior<br>Faculty of Institutions like TVET Institutes/ Vocational<br>Colleges / Technical Schools / Polytechnics /<br>Engineering Colleges / University Departments |
| <b>F. Aims &amp; Objectives of the Course</b>  | Upon completion of the course, the participants would be<br>able to<br>i. Know the Sustainable Development Goals (SDGs):<br>"Transforming our World: the 2030 Agenda for<br>Sustainable Development."<br>ii. Plan to achieve the Sustainable Development Goals<br>related to TVET in their respective country<br>iii. Improve Image Building of TVET<br>iv. Aware of the Institutional Leadership and<br>Management<br>v. Gain knowledge of National Vocational Qualification<br>System (NVQS)<br>vi. Prepare guidelines for organizing technical education<br>institutions through public private participation.  |

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|   | <ul style="list-style-type: none"> <li>vii. Plan to improve the programmes through the participation of industries (Industry Institute Partnership).</li> <li>viii. Comprehend the technologies of Industry 4.0/5.0</li> <li>ix. Develop guidelines for selection of students, teachers and equipping the institutes.</li> <li>x. Improve Teaching and Learning Process</li> <li>xi. Outcome based Education (OBE)</li> <li>xii. Use Information and Communication Technologies (ICT) applications in education and training</li> <li>xiii. Know Recognition of Prior Learning(RPL)</li> <li>xiv. Know the Quality assurance mechanisms through National accreditation/ International accreditation</li> <li>xv. Generate process of creating a centre for excellence in technical and vocational education.</li> </ul>  |
| <b>G. Details of Content of the Course / Training Schedule</b> <i>(pl attach a simple thematic / day-wise schedule (topics covered)).</i> | <p><b>Skill India Mission</b> is a government scheme launched in 2015. It is an umbrella scheme that has many skilling schemes and programmes under it. The chief objective is to empower the youth of the country with adequate skill sets that will enable their employment in relevant sectors and also improve productivity.</p> <p>The <b>Sustainable Development Goals(SDGs) of United Nations (UN)</b> are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 Goals are all interconnected, and in order to leave no one behind, it is important that we achieve them all by 2030.</p> <p><b>Sustainable Development Goal 4</b> is about <b>quality education</b> and is among the 17 Sustainable Development Goals established by the United Nations in September 2015. The full title of SDG 4 is "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". By achieving SDG 4, we will be able to achieve SDGs 1, 2 and 3.</p> <p><b>TVET (Technical and Vocational Education and Training)</b> refers to all forms and levels of education and training which provide knowledge and skills related to occupations in various sectors of economic and social life through formal, non-formal and informal learning methods in both school-based and work-based learning contexts. To achieve its aims and purposes, TVET focuses on the learning and mastery of specialized techniques and the scientific principles underlying those techniques, as well as general knowledge, skills and values. TVET serves multiple purposes. A key purpose is preparation of youth for work. This takes the form of learning and developing work related skills and mastery of underlying knowledge and scientific principles.</p> |

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|  | <b>Topics to be covered:</b> <ol style="list-style-type: none"> <li>1. Process to achieve Sustainable Development Goals(SDGs) related to TVET</li> <li>2. New sectors for Skill Development</li> <li>3. Image Building of TVET</li> <li>4. Leadership and Management</li> <li>5. National Vocational Qualification System (NVQS)</li> <li>6. Guideline for organizing TVET Institutions through Public Private Participation</li> <li>7. Instructional Design and Delivery Systems</li> <li>8. Outcome Based Education (OBE)</li> <li>9. Information and Communication Technologies (ICT) applications in education and training</li> <li>10. Recognition of Prior Learning(RPL)</li> <li>11. Guidelines for evaluation of Quality in planning and implementing various programmes in technical and vocational education.</li> <li>12. Industry 4.0/5.0</li> <li>13. Process of conducting action research studies, tracer studies and impact studies in technical and vocational education.</li> <li>14. Quality Assurance through National / International accreditation like Asia Pacific Accreditation and Certification Commission (APACC).</li> <li>15. Process of creating centre for excellence in TVET education through the assistance of National/ International Development Agencies</li> <li>16. Industry Institute Partnership</li> </ol> |
| <b>H. Mode of Evaluation of Performance of the ITEC Participant</b>    | Preparation of country specific assignments, development proposals and detailed project proposals for getting approval from international development agencies; seminars based on the project works.  |
| <b>I. Platform for delivery of online course (wherever applicable)</b> | <b>Not applicable. Only Physical Mode</b>   |
| <b>J. Name of the Department</b>                                       | Centre for International Affairs, NITTTR, Chennai   |
| <b>K. Name of Coordinator</b>  | <p>Prof. Dr. G. Kulanthaivel</p> <p>Prof. Dr. G. Kulanthaivel, Professor of Electronics and Communication Engineering and Head, Centre for International Affairs, National Institute of Technical Teachers Training &amp; Research, Ministry of Education, Government of India, Chennai, India received his Ph.D. degree in Information and Communication Engineering from Anna University, Chennai. He completed his Master's degree in Microwave and Optical Engineering from Madurai Kamaraj University and Bachelor's Degree in Electronics and Communication Engineering from</p>  |

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|                            | <p>University of Madras. He has also obtained his Master's degree in Business Administration (M.B.A.) from TNOU, India. He is having experience of 30 years out of which more than 28 years in training of technical teachers in India and abroad. He has worked in Colombo Plan Staff College (CPSC), Manila, Philippines as Faculty Consultant &amp; Chairman of the Information and Communication Technology Division for nearly four years on Government of India deputation. He has also acted as Acting Director General of CPSC and Acting President of APACC for more than one year. He is an Accreditor for Asia-Pacific Accreditation and Certification Commission (APACC), Philippines from 2014.</p> <p>His area of interest includes Biomedical Engineering, Telemedicine, Computer Networking, Communication Engineering, IoT and Cyber Physical Systems, Virtual Instrumentation, ICT applications in Education and Training, TVET, Accreditation, Instructional Design and Delivery Systems. He has published/presented more than 100 papers in the National/International Journals/Conferences/Seminars. He has visited around 20 countries (Bangladesh, Bhutan, Brunei, China, Dubai, Fiji, Hong Kong, Indonesia, Laos PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, South Korea, Sri Lanka and Thailand) and conducted different Quality Improvement Programs. He has received many awards from different Organizations. He is member of many International/National Professional bodies including Institute of Electrical and Electronics Engineering {IEEE(USA)} and International Vocational Education and Training Association {IVETA – USA}. He is Fellow of the Institution of Electronics and Telecommunication Engineers - (FIETE), Fellow of the Institution of Engineers (India) - (FIE) and presently Chairman of IEEE Technology and Engineering Management Society (IEEE-TEMS Madras Chapter).</p> |
| <b>L. Resource persons</b> | <p>Faculty members of NITTTR<br/>Experts from Academic Institutes / Universities<br/>Industry experts</p>   |

**ITEC Program on  
Strengthening Technical and Vocational Education & Training (TVET) to meet  
the Sustainable Development Goals (SDGs) of United Nations**

**COURSE PROFILE**

The world has concluded the Millennium Development Goals in 2015 with much fanfare as there is much scrutiny. Despite being hailed as one of the most effective pieces of international engagement fostering the inclusive and holistic development of developing nations, its gaps are subsequently addressed in the next phase of the Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs), which has 17 Goals. As the product of a high-level political and social delegation, the SDGs provided a framework for future development agenda by setting targets that are relevant in addressing emerging challenges.

One of the most crucial goals of the SDG is Goal 4, which states the need to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. The role of TVET particularly in developing skills for lifelong learning takes center stage as the world sees its relevance. It was recognized by the UNESCO (2015), along with literacy and higher education, as “one of the three priority subsectors for UNESCO in our work to foster inclusive and equitable quality education and lifelong learning opportunities for all”. UNESCO also cited that unleashing the potential of improving TVET has significant economic implications, citing that it is a source of “skills, knowledge and technology needed to drive productivity in the knowledge-based and transition societies of the 21<sup>st</sup> century”. This premise is profoundly significant to most Asia-Pacific countries which are still striving to turn their social and economic situation from the one mired in a “vicious cycle” to a one enjoying the benefits of a “virtuous” cycle of full employment, sustained economic growth, economy geared towards innovation, high productivity and high inflows of foreign and domestic investment.

There is a growing demand for recognition of Technical and Vocational Education and Training (TVET) institutional qualification across borders due to a large number of emerging factors such as increasing economic globalization, significant migration flows, increasing international labor market opportunities for the highly skilled and the growth in the international trade and services. The twenty-first century presents a radically different economy and society, which is likely to have profound implications on TVET. Globalization generates new demands, structures and systems requiring totally new skills or re-oriented skills and knowledge that could make society fit, competitive and responsive. TVET and sustainable development are inevitably connected – a case of means-end relationship. TVET, the process, has an essential role to play in raising awareness, and providing skills and values considered necessary to put sustainable development into practice. As the goal, sustainable development lies at the heart of the TVET system, and become the platform among the society it serves.

A sustainable and inclusive TVET would mean a quality TVET delivery and implementation. This is the direction promoted by various educational institutions and organizations in ensuring TVET’s future in the field of education and training. It has been mentioned by UNESCO (2016)<sup>1</sup> in its recommendations to TVET that “member states should establish a system for quality assurance in TVET based on participation by all relevant stakeholders”. In order to address the growing expectations of industry, continuous enrichment of the quality of TVET is a key priority in the region. Quality enhancement is one of the main objectives of the TVET system. Other key objective includes increasing the attractiveness of education, training, and promoting mobility among technical and vocational students. With the increasing mobility of workforce in the region, demand for mutual recognition of qualification through a sound accreditation framework is expected to increase. With a view to achieve international competitiveness and sustainable development, quality TVET institutions with excellent programs should be created. It must be the goals of

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each country to maintain TVET institutions that have innovative programs that can influence the human capital and thus achieve international competitiveness.

In this 21<sup>st</sup> century there is a great need to supply needed technical human resource to fast growing industries. Most of the developing countries do not have experience in planning, developing and implementing appropriate human resource development programmes in technical education. India developed the above processes through various trial and error methods. Now India is the third largest technical education provider in this world. Many International Development Agencies like World Bank, UNESCO, UNDP and CIDA assisted India to organize and implement these spectacular developments in Technical Education. Many visiting ministers of education from Mauritius, Seychelles, Ethiopia, Sri Lanka, Nepal and Bhutan appreciated the process of developing technical education in India and desired a training and development programme for their officials. Since, 1970s this Institute played a lead role in planning and developing the technical education system. Hence, it is proposed for international audience.

In the 21<sup>st</sup> Century there is a need for well trained skilled workers, technicians, engineers, scientists, managers and technologists to meet the growing demands of industrialization. Many developing countries are not having appropriate technical institutions to meet the human resource demands. India, since 1947, has planned many five year plans to meet the human resource demands of the independent country. Now it is one of the largest human resource developers not only to meet the country's demands but also to meet the global needs. This is due to planning of educational policy, approving private public partnership, establishing national councils, commissions, accreditation bodies, technical teacher training institutes especially for technical education, direct central assistance, technical universities, National institutes of technologies, high end research based institutes in science, information technology and management. Indian technical education system slowly developed into one of the world's leading system. Hence, the programme is designed to meet demands of the developing countries in Asia, Africa, South America, Eastern Europe and the Oceania.

The models are developed to meet the planning needs of Government Policy Makers / Officials from Ministries / TVET education planners, administrators, heads, faculty and other officials. The programme would be of great use in planning developing appropriate National educational policy, TVET Institutes, industrial training institutes, polytechnics, engineering colleges, technical teacher training institutes and technical universities. The proven models will assist the education administrators who wish to plan and design appropriate TVET education system. The participants of this International Program will physically visit various TVET institutes and interact with the administrators, and faculty members to get the feedback on growth and management of TVET Institutions.