



# Workforce-Ready Skills

How ITE Singapore Connects Training with Industry for  
Enhancing Skill-Job Matching



# Driving Forces affecting Economy, Jobs and Skills

## Driving Forces

- Disruptive Technologies – AI, Blockchain, Cybersecurity, Data
- Automation and Autonomous (unmanned)
- Climate Change and Net Zero Target
- Work Redesign  
*(higher skills and working with technologies)*
- Remote Work  
*(work done from other countries, work done for other countries)*
- Hybrid Jobs  
*(work requiring skillsets from different disciplines)*

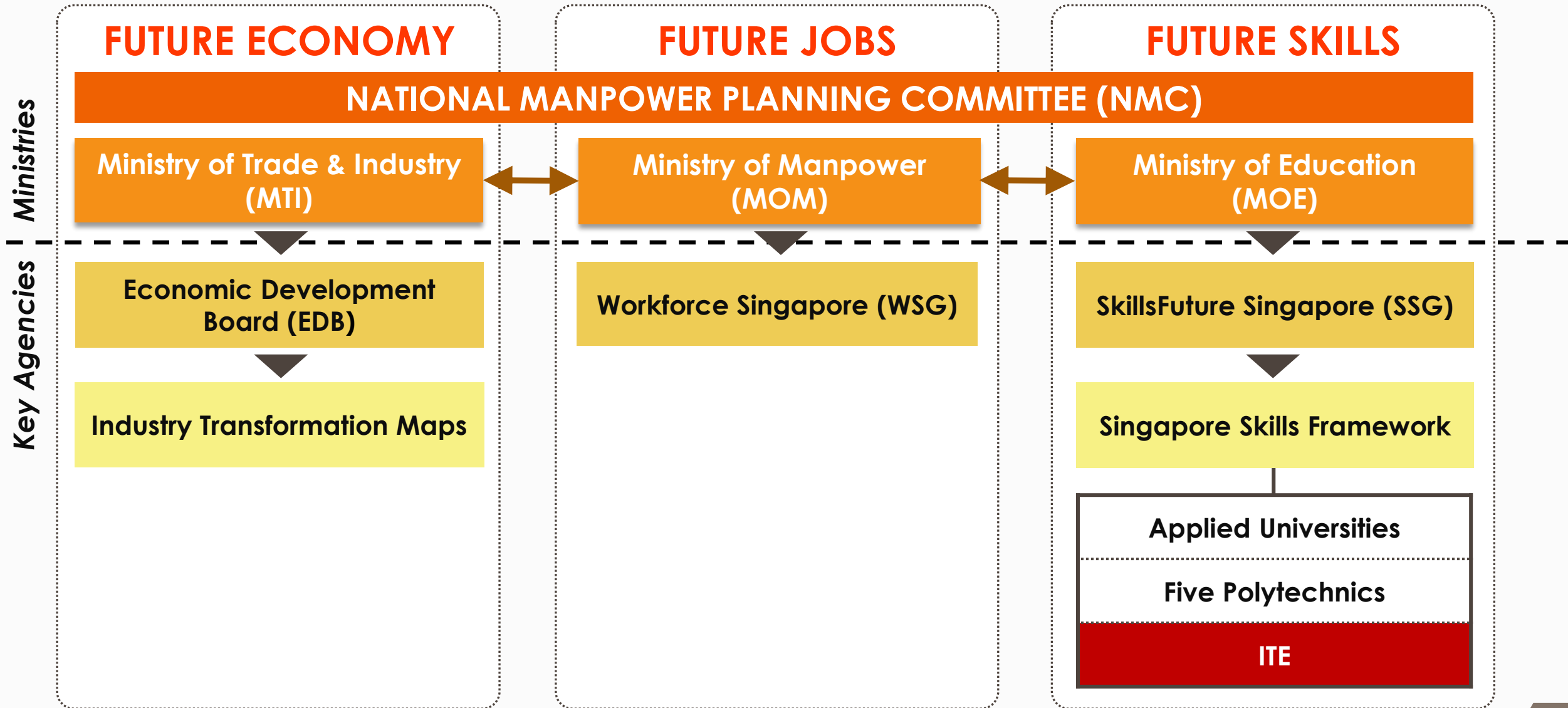
## Economy

- More Intense Global Economic Competition
- Speed, Cost, Quality (Faster, Cheaper, Better)
- Supply Chain Security
- Labour – Availability of Manpower and Relevant
- Emerging Green Economy and Industry
- New Business Models

## Jobs and Skills

- Disappearing Jobs  
*(replaced by automation, autonomous systems)*
- Re-Designed Jobs  
*(co-work with robots, RPA, AI, Gen-AI, data analytics)*
- Newly Created Jobs  
*(emerging sectors such as AI –Enabled Applications, Data Intelligence, Clean Energy Engineering, Cybersecurity)*
- Skills Obsolescence  
*(shorter half-life of skills)*
- Continuous Learning  
*(self-directed, employer-sponsored)*

# Whole-of-Government (WOG) Manpower Planning



# 23 Industry Transformation Maps (ITM)



- ITM1 developed in 2016-2018 – driven by automation, digitalization, big data
- ITM2 developed in 2021-2023 – driven by autonomous systems, AI, sustainability, decarbonisation
- Government (MTI), Industry, Trade Associations and Institutes of Higher learning coming together
- Roadmap for growth, innovation, jobs and skills
- Green Skills Committee (green skills cut across all industry sectors) chaired by MTI, industry leaders and members from govt agencies, industry reps and IHLs

# Three Types of Training

## ROLES OF ITE

- Provider of Career and Technical Education at post-secondary level
- Develops National Skills Certification and Standards
- Enables Employment, Employability and Further Upgrading

### Target Groups

**1** Post-Secondary Schools

**2** Adult Learners

**3** Employers as Co-Trainers

### Key Programmes

**Pre-Employment Training**  
(Before joining workforce)

**Continuing Education & Training**  
(While in the workforce)

**Workplace Training**  
(While in the workplace)

- **69 Certificate (Nitec & Higher Nitec) Courses** [Transiting all courses to 3-Year Higher Nitec by 2026]
- **8 Technical Diploma** (in partnership with overseas institutions)

- **Part-time Certificate Courses**
- **Short Courses**
- **Certificate of Competency courses**
- **Online Learning**
- **Joint-industry Certificate**
- **Career Transition Programmes**

- **45 Work-Study Diploma (WSDip)**  
(70% on-the-job training and 30% on-campus training)
- **Approved Training Centre**  
(Deliver ITE Certificate at the workplace)
- **Certified OJT Centre**  
(Support companies' in-house training)
- **Train-The-Trainer**  
(Develop companies' training capabilities)

# Holistic 'Hands-on, Minds-on, Hearts-on'<sup>TM</sup> Education Philosophy



# Authentic Learning Simulating Workplaces

Workplace@Campus, Campus@Workplace



Training Kitchens @ CW



Automotive Hub @ CW



Centre for Healthcare Simulation @ CE



Aerospace Hub @ CC



ITE-Sembcorp Centre for Sustainable Solutions @ CE



Horticulture Technology Hub @ CE

Augmented with 6-month internship for learning at the workplace

# Responsive Curricular and Training Approach

- Involvement of employers in curriculum development and delivery of training
- Curriculum provides foundational, specialization, cross-disciplinary modules, lifeskills and internship (workplace learning)

Diff

Module Category	No. of credits	% of credit units	Purpose
Industry Sector Foundation	24	25%	Core skills for the industry
Industry Specialisation	33	34%	Specialised skills for specific job roles
Cross-Disciplinary / Electives	17	18%	Ability to pivot to adjacent/different sector
Lifeskills / Sports/ Wellness	10	10%	Softskills for work and life
Internship	12	13%	Exposure to real world of work
<b>Total</b>	<b>96</b>	<b>100%</b>	

Three Self-Learning Modules for all Year 1 Students: Baseline AI; Baseline Sustainability; Prompt Engineering

# Upgrade Workforce: Work-Study Diploma Programmes

## Overview

ITE's WSDip delivers a seamless and structured learning journey, culminating in a nationally-recognised Diploma upon completion.

WSDip trainees are full-time employees of a WSDip partner company and can expect a stable income, employee benefits and full course fee sponsorship.

## Objectives

- ▶ Strengthen industry relevance through hands-on learning
- ▶ Enhance employability and professional growth
- ▶ Develop specialist talent to meet sector needs
- ▶ Promote lifelong learning and career progression

	Work-Study Diploma
Duration	30 months
Trainee Status	Full-time employee of sponsoring company
Curriculum	<ul style="list-style-type: none"><li>• Curriculum jointly developed by ITE and industry</li><li>• 70% to 80% on-the-job training at company</li><li>• 20% to 30% off-the-job training at ITE</li></ul>

# Upgrade Workforce : Work-Study Diploma Programmes

## Business & Services

- Accountancy
- Airport Operations
- Community Engagement & Development
- Culinary Arts & Management
- Customer Experience Management (Aviation Services)
- Customer Experience Management (Cabin Services) **(New)**
- Customer Experience Management (Lifestyle & Consumer)
- E-Commerce & Retail
- Event Management
- Fitness Management
- Hotel & Restaurant Management
- Human Resource Management **(New)**
- Lifestyle & Recreation Management
- Logistics & Supply Chain Management
- Patient Management & Services
- Security Operations
- Tourism Management

## Arts, Design & Media

- Media Communications & Digital Marketing

## Engineering

- Agriculture & Aquaculture Technology
- Aircraft Cabin Engineering
- Aircraft Engine Maintenance
- Aircraft Maintenance Engineering
- Arboriculture & Horticulture
- Architectural BIM & Design
- Automation Engineering
- Chemical Process Technology
- Electrical Engineering
- Facilities Management
- Land Transport Engineering (Operations Management) **(New)**
- Land Transport Engineering (Rail)
- Land Transport Engineering (Vehicle)
- Marine & Offshore Engineering (Engineering Design)
- Marine & Offshore Engineering – Production (Repair & Maintenance)
- Mechanical & Electrical Services Supervision
- Mechanical Systems Engineering
- Microelectronics (Equipment)
- Microelectronics (Process)
- Port Automation Technology
- Security Systems Engineering
- Vertical Transportation

## Infocomm & Media

- AI & Data Intelligence (AI)
- AI & Data Intelligence (Data Engineering)
- Cloud Management & Operations (Cloud Operations)
- Cloud Management & Operations (Infrastructure Support)
- Cyber Security & Forensics
- Data Centre Infrastructure & Operation
- Electronics & Computer Engineering (Applied Electronics & AI)
- IT System Integration

## Health Science

- Community Care Integration & Management **(New)**
- Nursing
- Opticianry
- Paramedicine **(New)**
- Rehabilitation Care

# Upgrade Workforce: Workplace Training Centre

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## Overview

A Workplace Training Centre (WTC) is an ITE-authorized centre that conducts workplace-based training and testing aligned to ITE's curriculum, enabling companies to certify their workers' skills through the Certificate of Competency (CoC).

As a WTC, the company gain access to ITE's training materials, can upskill the workforce directly at the workplace, and schedule training and assessments flexibly to meet industry demands, with competency tests conducted by approved independent testers.

## Benefits

- ▶ Train and upskill the workers leading to CoC
- ▶ Access to training and test materials developed by ITE
- ▶ Tests to be conducted by independent Testers approved by ITE

# Upgrade Workforce: Certified On-the-Job Training Centre

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## Overview

The Certified On-the-Job Training Centre (COJTC) scheme identifies and award companies that invest in employee development and upkeep a structured OJT system to provide quality workplace learning for their workers.

## Benefits

- ▶ Expert guidance to strengthen OJT framework
- ▶ Dedicated support in developing customised training blueprints
- ▶ Certified programmes to train and upskill workplace trainers
- ▶ Opportunity to be showcased as an industry leader in workplace learning excellence

# Internship

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## Overview

ITE's internship programme provides our students with opportunities to gain hands-on experience in real work environments, helping them transit smoothly into the workplace upon graduation.

By participating in the internship programme, the company can benefit from access to a pool of career-ready ITE graduates while enhancing the development of its employees as competent in-house trainers.

## Key Features

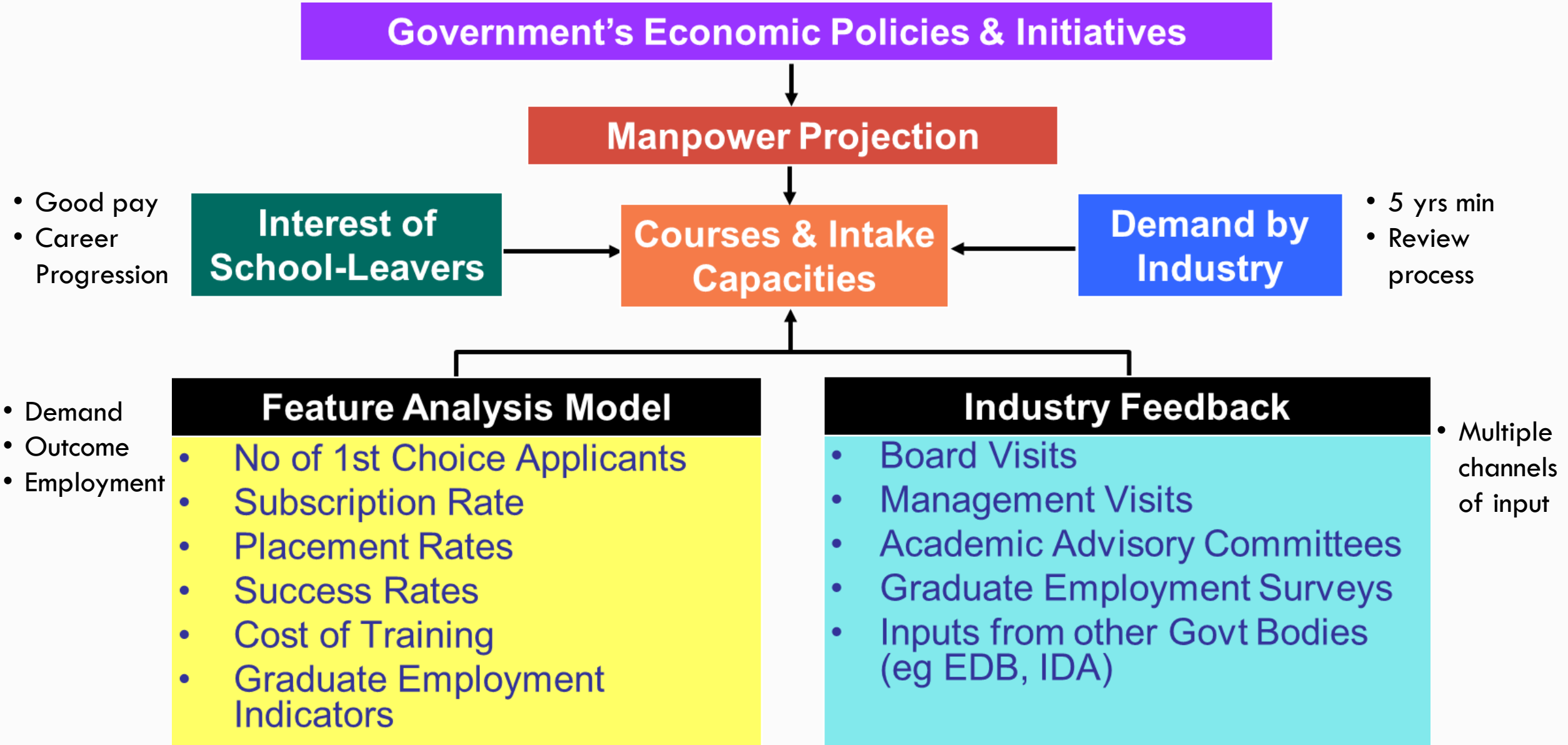
- ▶ An Internship Participation Agreement has to be signed between the company and ITE
- ▶ Internship durations are between 10 and 20 weeks
- ▶ There is to be structured training for interns based on an agreed list of skills with possible customisation to the organisation's proprietary or specialised skills
- ▶ Company trainers will mentor and co-assess interns with support from ITE lecturers

# Active Engagement with Industry & Employers

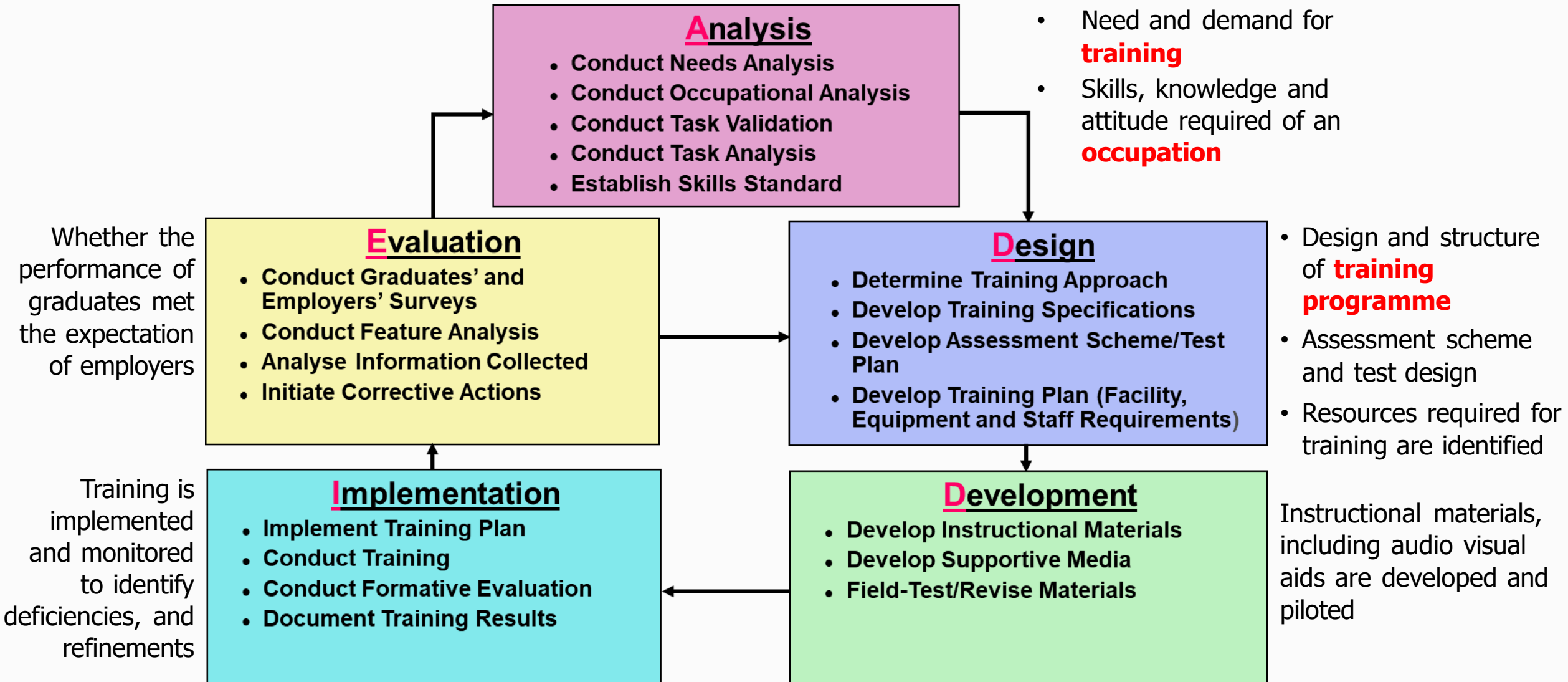


- ▶ **Academic Advisory Committees (AACs)** comprising industry leaders to advise ITE on industry trends and identify new areas for training and certification
- ▶ > **5,000 employers as Co-Training Partners** offering internships and workplace learning for students
- ▶ > **1,000 companies** involved in ITE Work-Study Diplomas
- ▶ > **200 Industry Partnerships** for internship programme, industry & technology update, and capability development

# ITE Curriculum Planning Model



# ITE Curriculum Planning Model





# **YOUR GLOBAL PARTNER OF CHOICE**

**Transforming Lives through Skills Education and Training**

# ABOUT ITEES

- A wholly owned subsidiary of ITE
- Established in January 2003
- Objective of sharing ITE's expertise in Technical and Vocational Education and Training (TVET) with the international community
- Assist international organisations, government agencies, TVET Institutions and private entities
- Raise quality of skills development and vocational training worldwide

# OUR IMPACT

## **Importance of a Well-developed Skilling Ecosystem:**

- Supports economic growth
- Positively impacts social development
- Alleviate income inequality
- Empower youth with relevant skills for employment and lifelong learning

# OUR SERVICES



**Infrastructure  
Development**



**Leadership  
Development**



**Staff Capability  
Development**



**Academic  
Development**



**Quality  
Assurance**



**Licensing and  
Certification**

# ITE Education Services

- Established in 2003 as a wholly-owned subsidiary of ITE
- Mission is to **assist the international community to enhance their human capital and TVET capabilities**
- TVET Consultancy projects in **30 countries** in Asia, Africa, Middle East & Latin America

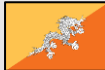
1) Azerbaijan



2) Bangladesh



3) Bhutan



4) Brunei



5) Cambodia



6) China



7) Colombia



8) Congo



9) Guinea



10) India



11) Indonesia



12) Jordan



13) Lao PDR



14) Malaysia



15) Mauritius



16) Mozambique



17) Myanmar



18) Nepal



19) Nigeria



20) Pakistan



21) Panama



22) Philippines



23) Russia



24) Saudi Arabia



25) South Africa



26) Sri Lanka



27) Tanzania



28) Thailand



29) Uzbekistan



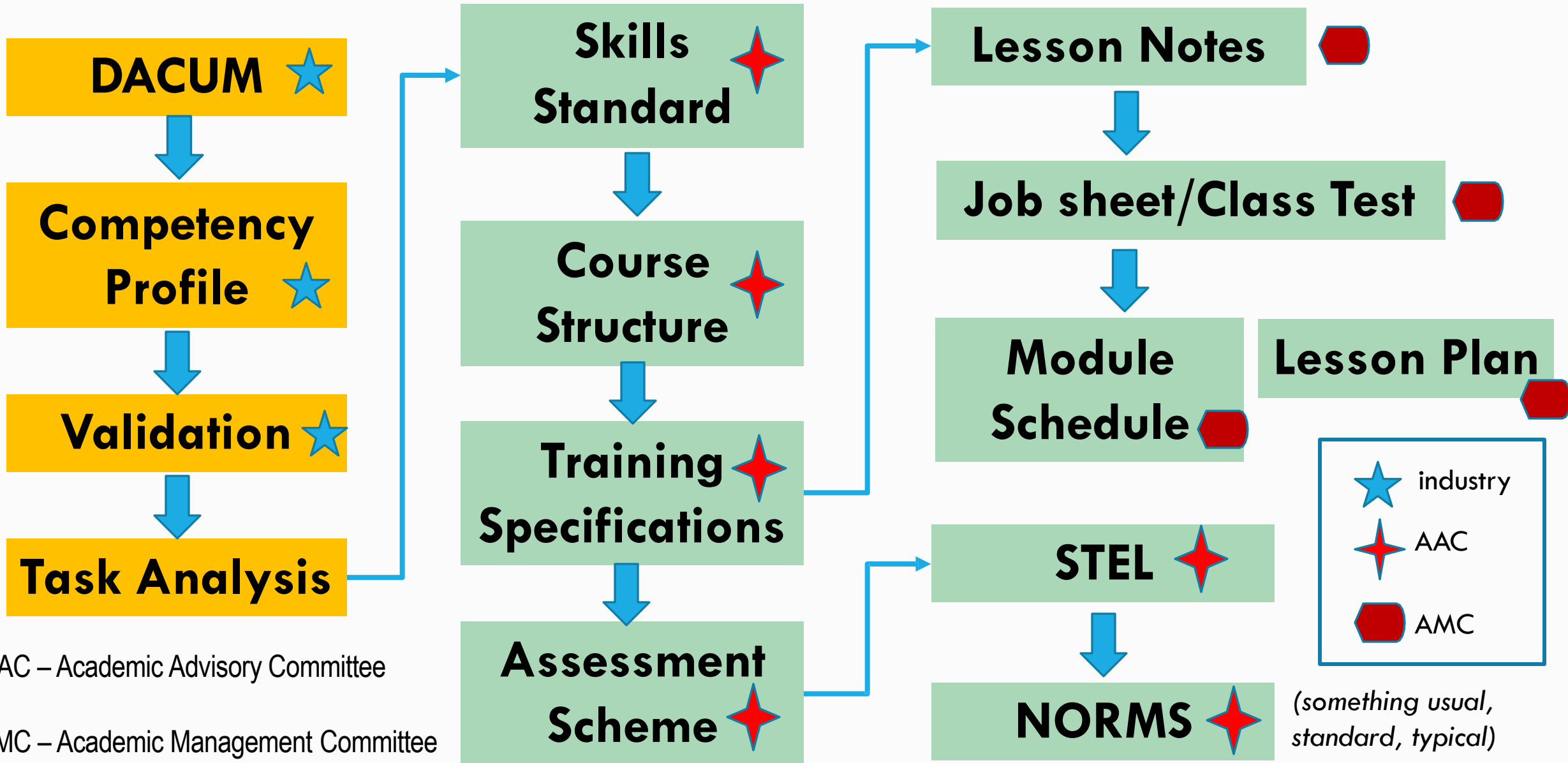
30) Vietnam



# Thank YOU



# ITE Curriculum Development Workflow



AAC – Academic Advisory Committee

AMC – Academic Management Committee

# Industry Validation

## COMPETENCY PROFILE OF A CIVIL & STRUCTURAL ASSISTANT DESIGNER/DRAUGHTSMAN

Note: Please circle / highlight your responses for the position of Civil & Structural Assistant Designer/Draughtsman at entry level.		How <b>important</b> is this task? 1 - Least Important 2 - Important 3 - Very Important			How <b>difficult</b> is this task? 1 - Least Difficult 2 - Difficult 3 - Very Difficult			How <b>frequent</b> is this task performed? 1 - Least Frequent 2 - Frequent 3 - Very Frequent		
Duty A	Conduct field work									
Task A1	Make site inspection.	1	2	3	1	2	3	1	2	3
Task A2	Take measurements on site.	1	2	3	1	2	3	1	2	3
Task A3	Take photographs on site.	1	2	3	1	2	3	1	2	3
Task A4	Prepare sketches / preliminary drawings with annotations.	1	2	3	1	2	3	1	2	3
		1	2	3	1	2	3	1	2	3
		1	2	3	1	2	3	1	2	3