Kind Request for Your Constructive Feedback

As per the objective set in the first phase of the *TVET Sector Strategic Plan (2023–2032)*, to develop a National TVET Curriculum Framework and model curricula within two years, a draft of the *National TVET Curriculum Framework (NTCF)* has been prepared by a task force comprising experts formed by the Council for Technical Education and Vocational Training (CTEVT).

You are kindly requested to review the draft and provide your valuable suggestions by **July 9, 2025**. Your constructive feedback will significantly contribute to refining and contextualizing the National TVET Curriculum Framework for Nepal.

Your feedback and suggestions can be submitted to the *Curriculum Development and Equivalence Division* of the Council or via email at **ntcfsuggestions@gmail.com**. Thank you.

Contact Numbers: 01-6630408, 6632073

National Technical and Vocational Education and Training Curriculum Framework (NTCF)

Council for Technical Education and Vocational Training (CTEVT)

Sanothimi, Bhaktapur

2025

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Foreword

Technical and Vocational Education and Training (TVET) is a cornerstone for fostering a skilled workforce equipped with the knowledge, skills, and attitudes to adapt to the labor market's ever-changing dynamics. In this regard, formulating the National TVET Curriculum Framework becomes a landmark in our steadfast commitment to advancing the quality, relevance, and inclusiveness of the technical education and vocational training sector in Nepal.

This framework functions as a strategic blueprint for the systematic development of the TVET sector in Nepal, harmonizing it with national priorities and international best practices. It establishes a well-structured system that seamlessly integrates skill enhancement, industry collaboration, and certification mechanisms, thereby nurturing a proficient, competitive workforce attuned to the diverse requirements of the economy.

The development of this curriculum framework has been a collaborative and consultative process, enriched by the invaluable contributions of policymakers, TVET experts, academia, industry leaders, and key stakeholders. Their collective contribution has strengthened the framework, making it a resilient foundation for the bright future of TVET in Nepal.

I extend my profound gratitude to all those who have devoted their time and knowledge to this significant endeavor of developing the National TVET Curriculum Framework. Implementing this framework marks a transformative step toward revitalizing the TVET system in Nepal.

…….

Honorable Raghuji Pant, Minister
Ministry of Education, Science, and Technology (MOEST)

Preface

A skilled workforce is fundamental to fostering economic prosperity and sustainable progress. With this understanding, the development of the National TVET Framework marks a significant advancement in strengthening Nepali technical and vocational education landscape. This framework provides a structured mechanism to enhance skill development, ensuring that TVET remains adaptable, equitable, and attuned to labor market needs.

It establishes well-defined pathways for competency-based education, assessment, and certification, enabling seamless mobility and recognition of skills, emphasizing strong industry linkages, continuous learning, and robust quality assurance. The framework aligns with both national imperatives and global benchmarks. Its holistic approach elevates workforce readiness and contributes to the nation's economic transformation.

This achievement culminates an extensive literature review, discussion, and cooperation among key stakeholders. I extend my sincere appreciation to the experts, institutions, industry leaders, and policymakers whose invaluable contributions have shaped this comprehensive framework, ensuring its relevance and effectiveness.

I am confident that implementing this framework will be instrumental in modernizing the TVET system, fostering a skilled and competitive workforce, and driving long-term national development.

……

Er. Mahesh Bhattarai
Member Secretary, CTEVT

TABLE OF CONTENTS

Acronyms

ADDIE	Analyze, Design, Develop, Implement, and Evaluate
BIAs	Business and Industry Associations
C	Credit
CAS	Continuous Assessment System
CDC	Curriculum Development Centre
CEO	Chief Executive Officer
CS	Competency Standards
CTEVT	Council for Technical Education and Vocational Training
DACUM	Develop A Curriculum
FA	Formative Assessment
hr	Hour
M	Module
MSE	Micro and Small Enterprise
NCF	National Curriculum Framework
NCS	National Competency Standards
NOSS	National Occupational Skills Standard
NSTB	National Skill Testing Board
NTCF	National TVET Curriculum Framework
NVQF	National Vocational Qualifications Framework
OJT	On-the-Job Training
OS	Occupational Standards
ROA	Rapid Occupational Analysis
SA	Summative Assessment
SM	Sector Map
SSC	Sector Skills Committee
TSC	Technical Sub-Committee
TSSP	TVET Sector Strategic Plan
TVET	Technical and Vocational Education and Training
WEP	Work Experience Practice

Glossary

Apprenticeship	It refers to a structured mode of training delivery regulated by a tripartite agreement between the TVET institution, industry, and apprentice. It enables the apprentice to acquire the competencies required for an occupation through a systematic and remunerated process, ultimately leading to a recognized qualification.
Basic module	It refers to a set of essential skills that help a person become employable and adaptable. These are nontechnical skills every worker should have. Initially, it covers a small number of basic competencies related to observable work activities for all workers.
Block release	It is a training modality in which students are released from their workplace or regular academic schedule for a fixed period to attend intensive training, workshops, or courses. Such provisions can be incorporated into an apprenticeship program at the end of a semester or year before the final exam.
Business incubation program	It refers to a program designed to support early-stage startups and entrepreneurs by providing essential resources, mentorship, and networking opportunities to foster business development and growth.
Common module	The common module comprises job-related competencies shared across multiple occupations within a specific sector. It ensures that workers acquire essential skills applicable to various roles within the industry.
Competency	It refers to the combination of knowledge, skills, and attitude required to perform a specific task or job effectively. It ensures that an individual can meet workplace standards and perform duties efficiently in a given occupation.
Competency profile	A competency profile is a document that outlines the specific skills, knowledge, and attitude needed to perform a job or role effectively, serving as a framework for selection, assessment, and development.
Competency standards	Competency standards consist of multiple units of competency, each defining a key function or role within a specific job or occupation.

Competency-based education and training	It is an outcome-oriented approach to technical and vocational education and training, focusing on the competencies that employers expect from employees. It is designed to ensure that learners can successfully demonstrate their ability to perform specific tasks.
Core module	The core module comprises the essential technical skills and knowledge that define a specific occupation. These competencies are crucial for performing key job tasks effectively and distinguishing one occupation from another.
Credit	Credit is a unit of measurement that represents the workload, learning achievement, or competency a learner has attained in a course or training program. It is used to quantify and recognize progress toward a qualification.
Credit transfer	Credit transfer is the process of recognizing credits previously earned by a learner in one qualification and applying them toward another qualification.
Flexible pathways	Flexible learning pathways provide diverse entry, re-entry, and progression opportunities across all education levels, integrating formal and non-formal learning with recognition of competencies gained through various experiences.
Functional mapping	Functional mapping involves identifying and understanding the relationship between a function or process and its underlying structure or implementation in a particular sector or area of occupation.
Generic skills	Generic skills are transferable skills that are not specific to any particular occupation or industry but are essential for work, education, and everyday life. These skills include communication, mathematics, organization, computer literacy, interpersonal competence, and analytical thinking.
Green industries	Green industries comprise businesses and service sectors dedicated to sustainable consumption and production. They focus on areas; such as, renewable energy, waste management, ecotourism, and air pollution control, contributing to a low-carbon and resource-efficient economy.

Green skills	Green skills are the competencies required across all sectors and job levels to adapt products, services, and processes to environmental regulations and the impacts of climate change.
Industry-based projects	Industry-based projects are those initiatives conducted in partnership between TVET schools and industries, enabling students or professionals to apply their expertise to real-world challenges. These projects help to connect theoretical learning with practical industry needs, enhancing innovation, problem-solving skills, and job readiness.
Instructional design	Instructional design is the systematic process of developing effective learning experiences by analyzing learner needs, designing instructional materials, and implementing and evaluating teaching strategies. It aims to enhance knowledge retention, skill development, and overall learning outcomes.
Job profile	A job profile is a document that outlines the requirements, responsibilities, qualifications, and expectations for a specific position, serving as a guide for recruitment, selection, and evaluation.
Learn and earn programs	The learn and earn programs that combine academic learning with practical work experience or vocational training aim to equip students with knowledge and skills, ultimately enhancing their employability and earning potential.
Level descriptor	A level descriptor is a set of progressive statements assigned to each level of the NVQF/NQF that describe the complexity of acquired learning in terms of knowledge, skills, and competency.
Lifelong learning	Lifelong learning is the process of acquiring knowledge and/or skills throughout life via formal and non-formal education, training, work, and general life experience. Lifelong learning is the ongoing, voluntary, and self-motivated pursuit of learning for either personal or professional reasons.
Module	A module is a self-contained unit of learning that focuses on a specific topic, skill, or set of competencies within a curriculum. It is designed to

	be completed independently, often including objectives, learning materials, teaching-learning activities, and assessments.
Modular approach	The modular approach structures the curriculum into self-contained units or modules, each focusing on specific tasks and essential knowledge. The modular approach allows for flexible and structured learning, making it easier for learners to progress step by step.
Multi-entry and multi-exit paths	Multi-entry and multi-exit paths are the ways in the TEVT system, referring to the flexibility and accessibility as well as pathways to allow individuals to enter and exit at different modules depending on their needs, goals, experience, and credit transfer.
Non-credited subject	It is a course that does not contribute to the credit hours required for graduation but is included in the curriculum to enhance foundational knowledge, practical skills, or personal development. Such courses can be incorporated in curriculum within the limit of total weekly hours.
Occupational competencies	Occupational competencies are a set of competencies required to perform in a specific occupation. The competencies are the measurable skills, abilities, behaviors, knowledge, and personal characteristics needed to perform work effectively.
Occupational skills	Occupational skills are the specific knowledge, attitude, and skills required to perform a job or tasks within a particular occupation. They can be applied in various contexts, including education and employment, and are crucial for success in the workforce.
Occupational standards	Occupational standards are statements of industry requirements for the occupation, including competencies required in the workplace and performance criteria by which such competencies are judged.
On-the-job training	It is a hands-on learning method where employees or learners acquire skills and knowledge directly in the workplace. Under the guidance of experienced professionals, they gain practical experience by performing real tasks, enhancing their competence and job readiness. This approach bridges the gap between theoretical learning and actual work requirements.

Permeability	Permeability refers to the capacity of education and training systems to enable learners to access and move among different pathways programs, levels, and systems to validate learning outcomes acquired in another system or non-formal/informal settings.
Prototype	A prototype is an initial version or sample of a product used to explore and refine ideas before finalizing the design.
Soft skills	Soft skills are Personal attributes that enable someone to interact effectively and harmoniously with other people
Work experience program	The work experience program is designed to make students familiar with/gain firsthand experience of the world of work as well as to provide them an opportunity to gain skills that are new or not covered in the institute.
Work-based learning	Work-based learning is an approach that combines practical work experience with academic learning. It allows learners to acquire skills and knowledge through real-world tasks and responsibilities in a work environment. This method bridges the gap between theoretical concepts and practical application, helping students or trainees develop job-specific competencies and enhance their employability. The different form of work-based learning practices are WEP, OJT, internship, field work, etc.

CHAPTER ONE

National TVET Curriculum Framework Context

Nepal is committed to providing relevant and quality Technical and Vocational Education and Training (TVET). The national policies on education, both immediate and long-term, envision to guide towards its overarching development vision of *Prosperous Nepal, Happy Nepali*. Aligning with these broader national objectives, the first chapter presents guiding principles for the National TVET Curriculum Framework, providing a roadmap for developing, implementing, and evaluating TVET curricula.

1.1 National TVET Scenario

Nepal is committed to quality education that ensures learning opportunities for every citizen. The Constitution of Nepal 2015 secures rights for scientific, technical, and vocational education, preparing dedicated and competent human resources for the nation. The National Education Policy 2019 is intricately linked to the needs of a productive workforce, serving as a prerequisite for national development. Accordingly, the Technical and Vocational Education and Training Sector Strategic Plan (TSSP, 2023-2032) is meticulously crafted to harmonize national goals. Similarly, the 16th Plan (2023/24-2027/28) carries on these immediate and long-term objectives, which are supportive of guiding the nation towards its overarching development vision of *Prosperous Nepal, Happy Nepali*.

Annually, nearly five hundred thousand young people enter the job market in Nepal. Nevertheless, only about 10% of them possess the necessary and relevant skills for employment through the TVET system. The scenario shows an acute need for accessible and quality education system designed to enhance their skills prior to entering into employment. In the present context, skills development in Nepal encompasses various occupational fields operating to prepare a competent workforce ranging from basic to middle-level technicians through various short-term vocational training to secondary-level TVET programs. However, the implemented programs are yet to be rationally designed to assure their permeability, aligning with the National Vocational Qualifications Framework (NVQF) and making them more attractive to youth.

The Council for Technical Education and Vocational Training (CTEVT) in Nepal is an autonomous body established under the Council for Technical Education and Vocational Training Act 1988, responsible for technical and vocational education and training. The council

is guided by the overarching principle of providing quality, employment-oriented, and practical education, incorporating work-based learning, continuing training, and professional development, potentially leading to qualifications and employment equipped with the knowledge, skills, and attitudes. Apart from CTEVT, other government agencies at federal, provincial, and local levels also run various TVET programs autonomously. In this context, the NTCF functions as a catalyst for establishing uniformity in national standards for the TVET curriculum.

1.2 Overview of National TVET Curriculum Framework

The National TVET Curriculum Framework (NTCF) is outlined to provide clear guidelines for curriculum development, foster a high-quality teaching-learning environment, and ensure that the programs offer a comprehensive set of skills. The framework also facilitates promoting permeability within the TVET system and beyond, allowing learners to transition between programs and access further education or employment opportunities. The framework is a national standard of the TVET curriculum, which helps to maintain uniformity and flexibility, aligned with the National Education Policy 2019, TVET Sector Strategic Plan (2023-2032), and the National Vocational Qualifications Framework (NVQF) for its successful implementation. The framework is also a guideline to leverage partnerships between educational institutions, business and industry sectors, and government bodies, creating a collaborative ecosystem that responds dynamically to emerging trends and technologies. Overall, the National TVET Curriculum Framework serves as a crucial step toward preparing a skilled, adaptable, and competitive workforce.

1.3 Rationale for National TVET Curriculum Framework

National TVET Curriculum Framework aims to foster inclusivity, enabling diverse regions and communities to benefit from tailored TVET initiatives that address their specific socio-economic contexts. It is designed to promote consistency in designing, implementing, and auditing curricula. However, in practice, TVET sector in Nepal currently faces challenges due to fragmented curricula across the institutions and programs through multiple stakeholders. This sector lacks a national curriculum framework, unlike the established framework for general education, non-formal education, and medical education. Similarly, existing curricula frequently come across difficulties in attaining a good alignment between content and relevant skills in accordance with industry requirements. In this context, this framework serves as a comprehensive guide for developing a quality TVET curriculum and provides a way forward

for its successful implementation. Moreover, the framework defines the key components that a strong TVET curriculum should possess.

The National TVET Curriculum Framework also supports the initiative of TVET federalization process as per the constitutional mandate. The Constitution of Nepal mandates the federal government to develop national standards and framework for TVET. Similarly, the provincial governments are responsible for developing curricula, plans, and necessary strategies for implementation in alignment with the national standards and framework, and the local governments are assigned to implement the national curricula and develop local curricula in their contexts. Given these policy directives, the National TVET Curriculum Framework serves as an important guideline for achieving a harmonized, competency-based, and industry-responsive TVET system in Nepal.

1.4 Objectives of National TVET Curriculum Framework

The National TVET Curriculum Framework provides a roadmap for designing, implementing, and evaluating the TVET curricula. It comprises a set of interlocking components, including essential knowledge, skills, attitudes, and learning experiences of relevant areas. The NTCF promotes a learner's holistic development by emphasizing occupational competencies, employability skills, and overall growth and development. Furthermore, the national TVET curriculum framework guides curriculum developers, planners, and individuals working in the TVET sector in designing TVET programs and for its successful implementation. The specific objectives are:

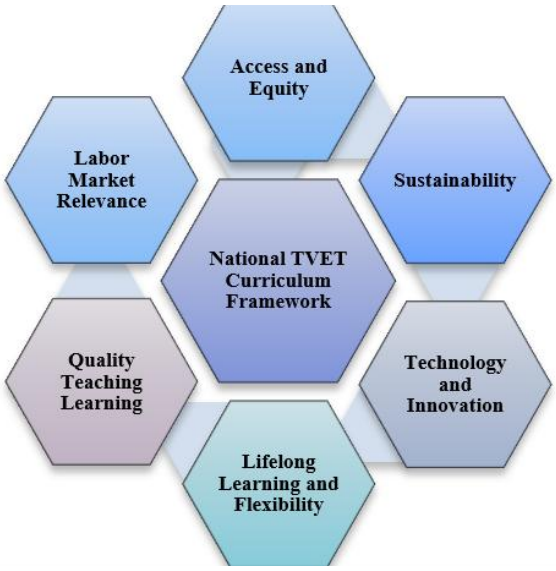
- Design a flexible curriculum that can adapt to evolving market trends, technological advancements, and socio-economic changes, ensuring that TVET programs remain relevant and responsive to the dynamic needs of the country.
- Encourage collaboration between TVET institutions and businesses/industries in Nepal to foster meaningful partnerships, ensuring that curricula reflect real-world needs and promote industry-relevant skills.
- Facilitate lifelong learning by providing clear and accessible pathways for career progression in the TVET system, allowing individuals to acquire knowledge, skills, and attitudes that are critical for their future as lifelong learners and as informed citizens.
- Integrate modern teaching methodologies and technologies into the curriculum to enhance the learning experience and prepare learners with the knowledge, skills, and attitudes that will enable them for life and work.

- Establish clear guidelines and quality assurance mechanisms to maintain consistency and high standards across TVET programs, ensuring the credibility and recognition of qualifications.
- Integrate principles of sustainable development into the TVET curriculum, promoting green skills and fostering a sense of responsibility and awareness among learners about the environmental and social impacts.

1.5 Guiding Principles of National TVET Curriculum Framework

The genesis of the National TVET Curriculum Framework lies in the national context, encompassing the social, economic, environmental, and legal aspects, as well as the national goal of *Prosperous Nepal, Happy Nepali*. The guiding principles are based on Nepal's commitment to achieving national development goals, addressing labor market needs, and promoting an equitable and inclusive TVET system. The guiding principles for the National TVET Curriculum Framework are presented in Figure 1.1.

Figure 1.1: Guiding Principles of NTCF



- **Access and Equity:** The NTCF anticipates that the efficiency of the TVET system is related to the issue of access. It emphasizes creating support structures to enable students to commit to courses and provide maximum flexibility to enter and exit the course. The learnings are continuously assessed and accumulated over time. This is guided by the principle of an inclusive education system that caters to the needs of all learners, including those from diverse communities.
- **Labor Market Relevance:** The NTCF focuses on competency-based education, emphasizing developing skills and competencies for industry readiness. Therefore, the framework focuses on strengthening and enriching the linkages with businesses/ industries. The relevance is measured only if the outcomes of the TVET graduates match the demands of the labor market. In this case, curriculum development and its implementation are carried out in collaboration with various stakeholders, primarily actors from businesses/industries.

- **Quality Teaching Learning:** The NTCF provides a comprehensive approach to pedagogy to effectively implement in the context of institutional and work-based learning. In this case, the teaching-learning is guided by multiple approaches emphasizing experiential learning. The NTCF advocates for a multi-disciplinary learning approach that integrates different subject areas and encourages learners to develop a broader understanding of the world of work.
- **Technological Integration:** The NTCF emphasizes the importance of technology in TVET and guides it to integrate technology into the teaching and learning process. It includes using information technology, artificial intelligence, and other digital resources for teaching, learning, assessment, and evaluation to ensure program quality, relevance, and continuous improvement.
- **Lifelong Learning and Flexibility:** The NTCF emphasizes the need for a holistic approach to TVET that offers the learners opportunities for lifelong learning. It includes flexibility in multi-entry and multi-exit paths for a learner in both formal and informal learning modes.
- **Sustainability:** The NTCF encourages the development of TVET programs in accordance with sustainable development practices. This can help to create a workforce equipped with the knowledge, skills, and attitude to contribute to the transition to a more sustainable economy. Similarly, it envisions a more sustainable society through developing green skills needed to work for the establishment of green industries or to start environmentally-conscious businesses. The NTCF encourages using local resources, including indigenous skills, occupations, and locally available materials.

1.6 Existing TVET Curricula and Programs

An apex body for TVET, CTEVT runs vocational training, pre- diploma and diploma programs nationwide. The duration of vocational training ranges from 40 to 1696 hours, covering one week to a year. The requirements for skills tests are set according to the levels. For example, an individual requires either 390-hour training or one year of work experience in the respective occupation to appear in the level one skill test. Similarly, pre-diploma and diploma programs are run in different modes, including dual VET apprenticeship, leading to secondary-level

qualification. Apart from this, other ministries and bodies concurrently run TVET programs at three tiers of government. The programs run under MOEST are presented in Table 1.1.

Table 1.1: Existing TVET Curricular Programs

Programs	Entry Criteria	Duration	Certification	Career (Further education, training)	Career (Job)
Diploma or Technical Certificate	Secondary Education Exam (SEE/SLC) holders with specified criteria for the course or Pre-diploma (former TSLC) with 68% and entrance passed	3 years	Diploma in … Awarded by CTEVT	Can join the Bachelor's degree level	Supervisor or Foreman or Senior Technician
Technical Stream (9-12) in Community School	Grade 8 pass	2+2+1	SEE/SLCin Technical Awarded by the National Examinations Board	Can join the Bachelor's degree level	
Pre-diploma	SEE/SLC appeared	18 months	Pre-diploma in … Awarded by CTEVT	Can join the Diploma level	Technician
Pre-diploma (Apprenticeship Mode)	SEE appeared	24 months	Pre-diploma in … Awarded by CTEVT		Technician
Vocational Training	Literate youth aged 16 years and above with an aptitude for developing a career through skills training	40-1696 hours	Training completion certificates awarded by the training institute Skill test certified by NSTB	Competant/skilled workforce on the specific occupation	Skilled Worker, Skilled Helper Level-wise skills test certificates

1.7 Users of the National TVET Curriculum Framework

This framework is designed to guide and support diverse stakeholders involved in the planning, delivery, assessment, and governance of the TVET system. In this case, the primary users are those stakeholders who are directly engaged in developing and implementing the TVET curriculum at the national and sub-national levels. They include TVET institutions that develop and deliver relevant training programs, TVET instructors and trainers who are practically engaged in creating an instructional design, delivering and assessing learning outcomes, and government/non-governmental agencies that design curricula in alignment with the national standards and certify the learners as per the national standards.

Similarly, the secondary users are those who indirectly benefit from or support the implementation of the framework. They include students and trainees who will be practicing in the implementation of a framework for acquiring skills and competencies for career

advancement. The framework also contributes to diverse groups of people accessing inclusive, equitable, and demand-driven TVET opportunities**.** It is also a supportive document for provincial and local governments to design, implement, and evaluate TVET programs to ensure adherence to the framework's quality standards. Based on this framework, they can implement localized training programs to address community-specific skills needs. The framework will benefit employers and industry representatives by aligning workforce training with current and future skills demands.

1.8 Development Process of the National TVET Curriculum Framework

The National TVET Curriculum Framework (NTCF) results from continuous efforts, including representatives from business and industries, professionals and their associations, academicians, TVET experts, and CTEVT professionals. The process began in July 2023 with a nine-member working team chaired by a director of CTEVT. The team reviewed relevant literature and prepared a preliminary draft. The team recommended a broader stakeholder consultation to gather inputs from policymakers, industry representatives, and key sectors for validation.

Based on the recommendations and realizing the critical need for developing the NTCF, CTEVT decided to continue accomplishing the task. Accordingly, the second working team was formed in September 2024 under the leadership of the Curriculum Development and Equivalence Division of CTEVT. The team, comprising nine members, includes representatives from the university, industry cum sector skills committee, and CTEVT officials. The team worked further and developed NTCF in its current form.

While developing the NTCF, constructive ideas and valuable feedback were collected with stakeholders in four major sectors: agriculture, hospitality, engineering, and health. Additionally, a national consultative workshop at MOEST facilitated further expert reviews. The final version incorporates all the valuable insights from the consultation workshops and was endorsed by the Curriculum Board at CTEVT, and subsequently will be approved by the Council meeting.

CHAPTER TWO

Architecture of TVET Curriculum

This chapter comprehensively overviews the procedures and standards for developing Technical and Vocational Education and Training (TVET) curricula. It postulates the core principles: relevancy, industry alignment, and learner-centered approaches as the tenets of curriculum development. Furthermore, this chapter presents curriculum prototypes that illustrate various models and formats tailored to the TVET context, offering practical insights for curriculum designers and policymakers.

2.1 TVET Curriculum

The curriculum encompasses the principles, guidelines, learning outcomes, and frameworks for designing, implementing, and assessing programs. The TVET curricula in Nepal are structured based on five broader components: theoretical knowledge, occupational skills, soft skills (values), performance outcomes, and level of responsibilities (See Annex 1).

- Theoretical knowledge forms the basis for designing innovation and understanding various aspects of the occupational sector(s).
- Occupational skills are key competencies needed to perform a specific job effectively.
- Soft skills are qualities a person cultivates to demonstrate good deeds and skills to perform mindful duties and tasks.
- Performance outcomes are the measurable results of various activities or tasks, often used to evaluate skills and competencies.
- The levels are crucial for setting benchmark standards for allocating responsibilities to an individual, identifying areas for improvement, and aligning actions toward achieving program objectives.

The abovementioned components are framed into a holistic approach for Nepali TVET programs to make it comprehensive, outcome-oriented, and aligned with industry needs.

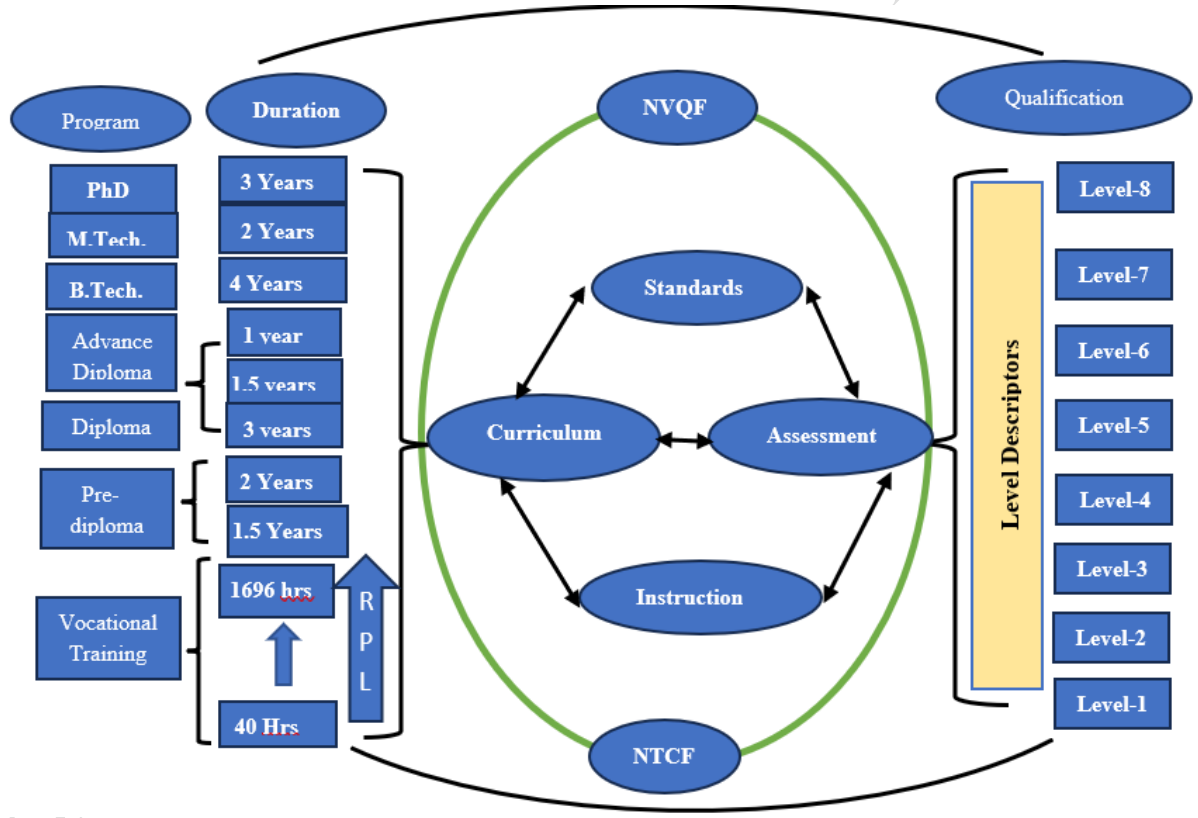
2.2 Linkage between NTCF and NVQF

The NTCF and NVQF (see Figure 2.1) are complementary to strengthen the overall TVET system in Nepal. The NTCF provides a roadmap for developing curricula aligning with the competencies required at each level of the NVQF. For example, a Level One curriculum focuses on foundational skills, and a curriculum for Level Five and above emphasizes advanced technical knowledge and higher-level problem-solving skills. The NTCF aligned with NVQF

also makes the TVET program more flexible for learners' progression with the flexibility to multi-entry and multi-exit systems. Both the NTCF and NVQF are designed to be flexible and responsive to industry needs. The alignment between them helps to provide a clear structure for qualification progression, transit students from education to work, and make it easier for employers to assess the skills level of potential employees.

The alignment between the NVQF and the NTCF strengthens that the TVET programs meet national and international standards, address labor market needs, and provide clear pathways for learner progression. This alignment supports ensuring the coherence of education, training, and qualifications, enhancing the employability and career advancement opportunities for TVET graduates.

Figure 2.1: Relationship between NTCF and NVQF



2.3 Tenets of Curriculum Development

The TVET curriculum in Nepal is oriented toward a competency-based approach and is intended to enhance the quality and relevance of knowledge, skills, and attitudes. The following principles guide the national TVET curriculum:

2.3.1 Driven by Contemporary Labor Market

The business and industry sectors are both creators and users of the TVET system. They create employment opportunities by establishing industries or upgrading technologies. These sectors include private and public employers, the business sector, micro and small enterprises (MSEs), cooperative associations, chambers of commerce, and industry, sectoral associations, professional associations, private TVET providers, civil society organizations, and NGOs. A competency-based curriculum is developed with the active engagement of businesses/ industries of the relevant occupational sector(s). Hence, the rationale for developing a curriculum is guided by the relevance and demands of the labor market. The trainees/students are provided with opportunities to learn and demonstrate competencies according to the demands of the labor market.

To ensure the active participation of business and industry in the entire curriculum system, making it relevant, competency-based, and aligned with skills needed in the market, businesses and industries have crucial roles in the following curriculum processes:

Figure 2.2: Company-based Curriculum Process

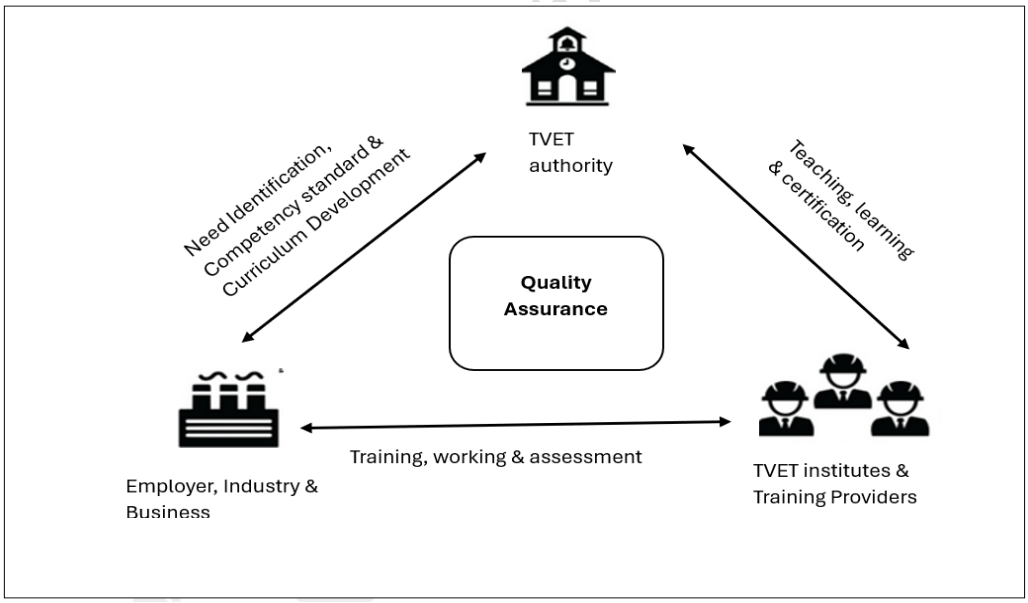


Table 2.1: Role of Business and Industry in Curriculum Process

Curriculum Development	Curriculum Implementation	Assessment & Certification
Develop competency standards with the active involvement of Sector Skills Committees and technical experts.	Facilitate workplace learning such as internships, apprenticeships, and on-the-job training.	Participate in developing assessment tools and standards.
Recommend emerging skills and occupations.	Involve in the instructional process through in-company trainers and instructors at TVET institutions.	Involve as external assessors or evaluators.

Demand new curricula and programs.	Attract young learners through various modes of delivery, including industry-based projects, learn and earn strategies, business incubation programs, and career/job fairs.	Engage in continuous assessment during internships, apprenticeships, and on-the-job training.
	Support to develop instructional materials and training manuals.	Suggest to improve assessment process.
		Assess the labour market regularly to update the curriculum.

2.3.2 Flexible Learning Pathways

TEVT curricula are designed to promote both vertical and horizontal mobility and progression across different qualification levels. The curriculum encourages flexibility and dynamic development to respond to the changing occupational requirements and accommodate the different demands of the world of work. Since occupations and their specific characteristics change over time, the curriculum also remains flexible to continuously reflect up-to-date occupational requirements.

TVET programs are designed to open vertical and horizontal movements alongside multi-entry and multi-exit options, ensuring flexibility in learning pathways. These pathways are integral to creating a learner-centric system that fosters progression, mobility, and adaptability. Vertical pathways allow learners to systematically advance through qualification levels, building on prior learning experiences. This structured progression supports individuals in achieving higher qualifications and career development while maintaining alignment with industry standards. Similarly, horizontal pathways offer learners the flexibility to explore various fields of study or shift career focus without losing their progress. This adaptability aligns with the multi-entry and multi-exit principles anticipated by TSSP (2023–2032), fostering a dynamic and inclusive learning system.

Credit Allocation and Transfer

The credit allocation follows a structured calculation: 15 to 20 lecture hours equals one credit, 30 to 40 practical hours equals one credit, and 60 to 80 field practice hours equals one credit. Basic levels (Levels 1 to 4) adhere to an 80:20 practical-to-theory ratio, while higher qualification levels (Levels 5 to 8) transition to a 60:40 ratio, emphasizing theoretical depth alongside practical expertise. As training progresses to higher levels, advanced skills, and extended industry engagement are prioritized to ensure learners are well-prepared for professional roles. Workplace learning requirements increase significantly at higher levels to enhance hands-on experience and job readiness. Additionally, certain sectors and occupations may require extended training durations due to the complexity of tasks and safety

considerations. Further details on credit allocation and implementation will be specified in the NVQF working procedures.

For vertical flexible pathways, a specific learning outcome accumulated through credits at one level can be transferred to another level. The details of credit accumulation and transfer guidelines will help to facilitate the credit transfer mechanism. For a reference, credit transfer in TVET curriculum is presented in the following table:

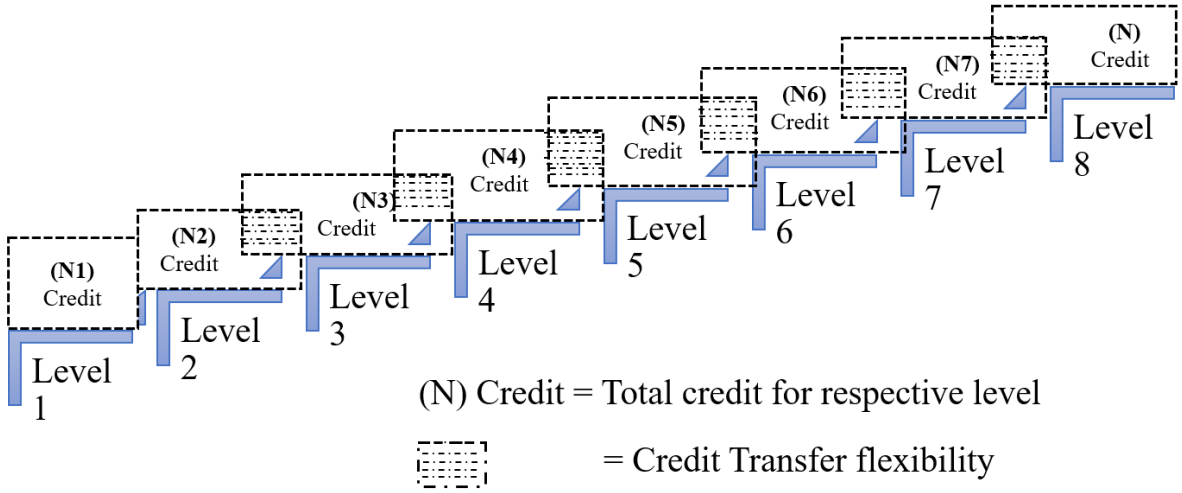
Table 2.2: Training Hours and Credit Allocation Based on NVQ Level

NVQ level	**Duration**			
	Hours	**Months**	**Credit allocation**	**Workplace learning**
Level 1	40-160	Up to 1 month	Non credited	As per need
Level 2	160-480	1 -3 months	30-45	2 weeks
Level 3	480-960	3 -6 months	45-60	2-4 weeks
Level 4	960-1400	6-12 months	60-90	1-3 months
Level 5	1400-2100	12 -18 months	90-120	3-6 months
Level 6	This information will be as explained in the NVQF implementation guidelines.			
Level 7				
Level 8				

Note: Some sectors/occupations may require extended training durations based on the complexity of tasks and safety considerations.

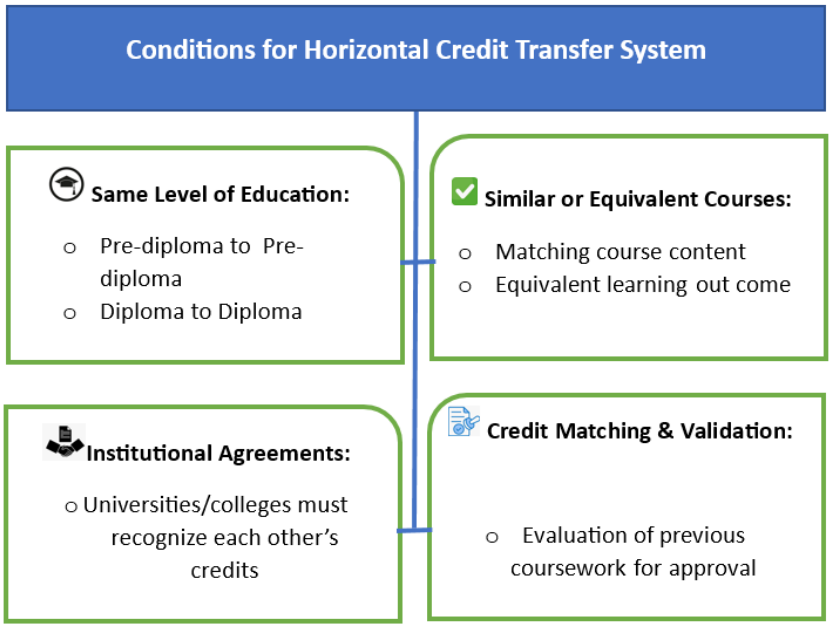
The National Vocational Qualifications Framework (NVQF) defines training levels based on duration, credit allocation, and workplace learning requirements. Level 1 programs range from 40 to 160 hours, in some cases extended up to one month. They generally lead to certification, however, CTEVT in long run anticipates developing a mechanism for micro-credentials aligned with contemporary labour market. Level 2 spans 160 to 480 hours over one to three months, with a credit allocation of 30 to 45 and a mandatory two-week workplace learning component. Level 3 requires 480 to 960 hours of training over three to six months, awarding 45 to 60 credits and incorporating two to four weeks of workplace learning. Level 4 extends to 960 to 1400 hours over six to twelve months, granting 60 to 90 credits and including one to three months of workplace learning. Level 5 entails 1400 to 2100 hours of training over twelve to eighteen months, earning 90 to 120 credits and requiring three to six months of workplace learning. Details for Levels 6, 7, and 8 will be determined following the implementation of the National Vocational Qualification Framework (NVQF).

Figure 2.3 Vertical Credit Transfer Mechanism



The credit earned on a specific level or program can be transferred to another level or program. However, bringing the credit transfer mechanism into practice, specific guidelines are recommended. The credit can be transferred in two ways: vertically and horizontally. The vertical credit transfer system is applicable in transferring the credit into the higher level or programs (see Figure 2.3). Similarly, the horizontal credit transfer is related to the same level but different programs (see Figure 2.4)

Figure 2.4: Conditions for Horizontal Credit Transfer System



Credit transfer, however, may not apply to all types of programs, particularly industry-based. Furthermore, the program, which aims to enter the labor market, may not necessarily need credit transfer. Individual level of competencies would be more relevant in the labor market than a set of earned credits.

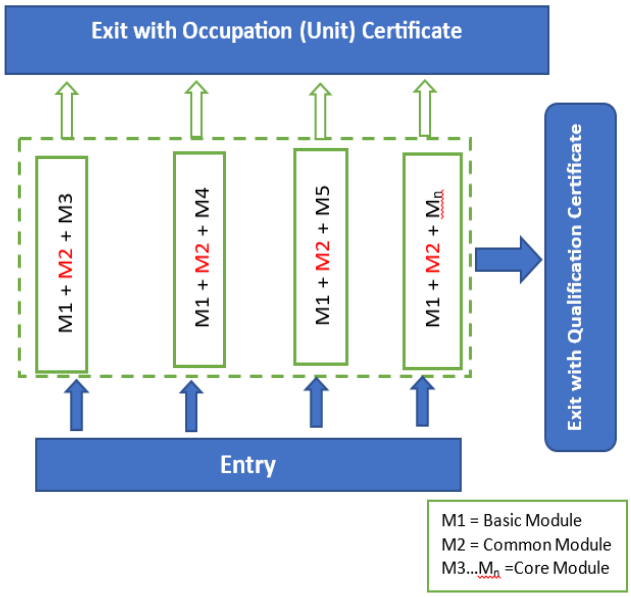
2.3.3 Modular Approach

A learner-centric pedagogic approach guides the curriculum under CTEVT. It also adopts a modular approach to ensure the acquisition of skills, knowledge, and attitudes needed to perform specific activities required by the labor market. The module is a unit of occupational standards with specific learning objectives. Each module focuses on particular skills or competencies, allowing learners to progress at their own pace and choose a learning path aligned with their goals.

One unit of competence may lead to one learning module or more. The number of learning modules depends on the breadth and depth of the unit of competence. The decision is made after a thorough study of the occupational standards and its units of competencies. The learning module or modules (if there are several) of a unit of competence should be self-contained. It should contain the contextual (knowledge-based), skills (performance-based), and attitudes (behavioral-based) requirements of the unit of competence.

Currently, TVET programs in Nepal are offered at various levels with a range of duration, for example, pre-diploma in institution-based or apprenticeship mode and diploma-level study. These programs are designed for linear progression rather than standing alone. The specific unit(s) of formal courses (modules) can be offered as short courses. Offering a range of short courses would enable more varied groups of students to gain specific skills needed to perform occupational roles in the job market.

Figure 2.5 Model for Modular Curriculum



The modules can be categorized as basic, common, and core. The basic module (M1) covers fundamental skills, knowledge, and attitudes, while common modules (M2) consist of a set of skills, knowledge, and attitudes common to the sector. The core modules (M3… Mn) concentrate on a specific occupation.

2.3.4 Lifelong Learning

The TVET curriculum should provide life-long learning opportunities (including initial and further TVET) to enable the individual to keep pace with the recognition of knowledge and skills acquired through different learning modes. The curriculum also aims to establish a system of accumulating learning outcomes through a credit system and promote a culture of continuous academic and professional growth. It allows an individual to adapt to altering conditions and acquire new skills throughout their careers.

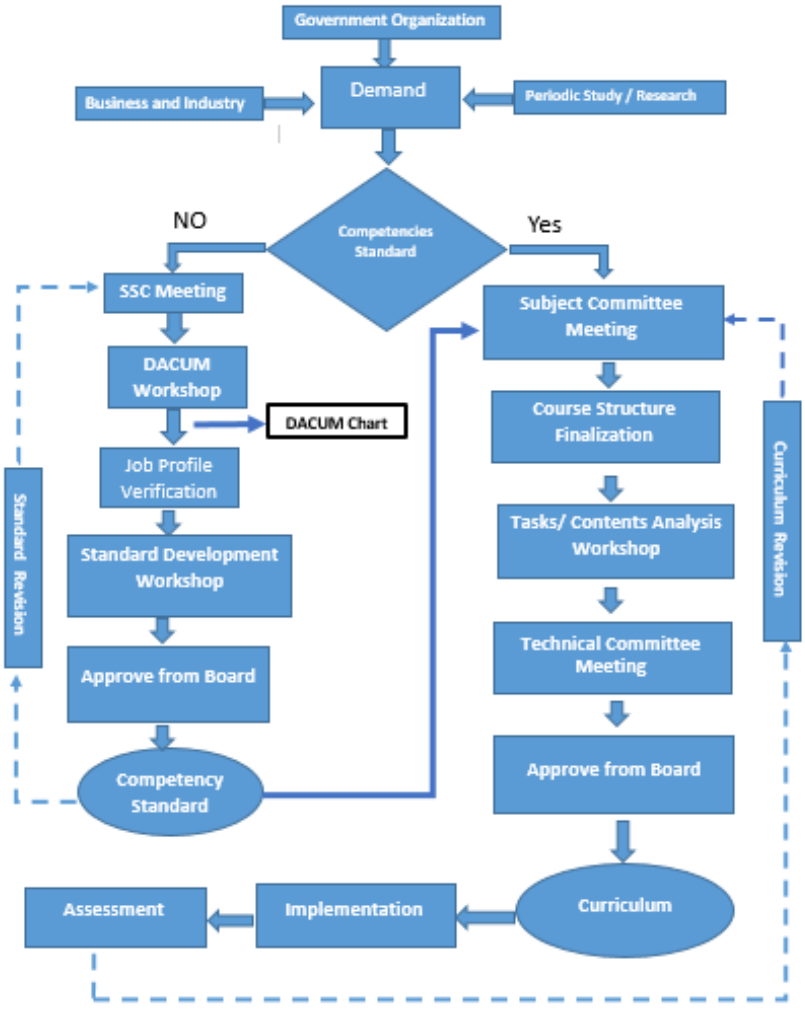
2.4 Curriculum Development Process

Curriculum development involves various stakeholders, including representatives from businesses, industries, employers, professional councils, and educational institutions. It is a collective process and should not be done in isolation. The curriculum development process begins with the demands

of the job market. The demand can be collected through the needs assessment by analyzing required skills,

Figure 2.6: Flow Chart of Curriculum Development Process

labour market trends, and employers' feedback.



The competency standards and curriculum development process follow a structured approach based on industry needs, labor market demands, and national priorities. The following are the stages of the curriculum development process:

2.4.1 Identifying Demand

When developing a curriculum, demand of businesses/industries, national priorites (demand from government organizations), and periodic studies/research play a crucial role in identifying the demand.

- **Government Organizations**: The national priorities articulated through national policies, periodic plans, and regulations facilitate to identify skills gaps in different sectors and recommend for new curricula and update the existing ones.

- **Businesses and Industries**: They require job-ready graduates with relevant skills. They identify emerging technologies and market trends that need to be included in the curriculum,
- **Periodic Studies / Research**: It is necessary to conduct surveys and studies to assess workforce demands, provide data-driven insights on necessary curriculum improvements, and help integrate new methodologies and innovations.

Generally, the curriculum development process begins with identifying demand in the world of work. The curriculum developer can conduct a Rapid Occupational Analysis (ROA) to determine the needs. This quick analysis supports developers in collecting prior information on the nature of the occupation(s), its demand, and key stakeholders.

If an organization has identified the needs and intends to develop a curriculum leading to the skill test, it should inform the TVET curriculum endorsement body before initiating the curriculum development process. Likewise, a draft of the curriculum should be submitted to this body for approval. The Council for Technical Education and Vocational Training Act of 1988 has mandated CTEVT to maintain uniformity in TVET curricula, assess such programs at national levels, determine their levels, and grant approval.

After ensuring the demand, it is necessary to check whether the curriculum being developed has occupational competency or skill standards. As mentioned in Figure 2.6, the curriculum development process proceeds following the stages on the right side of the figure if the competency standards are available. If the standards have not been developed, the stages mentioned on the left side of Figure 2.6 have to be followed.

2.4.2 Developing Competency Standards

Occupational or competency standards (CS) encompass the knowledge, skills, and attitudes needed to perform in a particular occupation. These standards are detailed guidelines required for effective job performance in specific roles or industries. The occupational standards (OS) have role-specific guidance, define measurable criteria for performance evaluation, and identify the fundamental knowledge and skills necessary for occupational success. The standards evolve from collaboration with technical experts from business/ industry, who ensure alignment with the market demands, standardize qualifications and job descriptions, and support workforce planning and compliance across various regions and organizations.

The competency standards establish a benchmark for the skills and competencies required in a specific occupation, ensuring consistency in workforce quality. The CSs also provide a

roadmap for career progression, defining performance expectations and identifying areas for personal development. This facilitates learners' mobility by standardizing qualifications across sectors. The competency standards development process involves five steps: initiation, sectoral mapping, competency profile/functional mapping, standard development, and approval.

Step I: Initiation: The competency development process begins once the decision is made to develop competency standards based on the result of the need assessment or upon the request made by relevant organizations/agencies. The process includes the following preparatory works:

- Coordinate with Sector Skill Committee (SSC) and Technical Sub-Committee (TSC) or get approval from the committee
- Identification of expert practitioners
- Prepare a tentative CS development plan

Step II: Sectoral Mapping: The Sector Map (SM) is developed by experts from the world of work, including CEOs/Managers/Supervisors of industry, representatives from professional associations, and at least one representative from each sub-sector, facilitated by trained facilitators.

Step III: Functional and Job Analysis: Functional analysis of a sector is carried out to identify the occupational standards in respective sectors. It consists of the purpose of the occupational area, key functions, and sub-functions of competencies required in an occupation and/or for qualification assessment. Two or more functions are combined according to level of qualification. The functional analysis brings together a panel of experts working in each occupation to find out what they do and need to do**.**

After analyzing the sector, a job analysis is employed to develop the short-term curriculum for the specific occupation. Job analysis is a technique to obtain an up-to-date, valid, and reliable listing of the skills necessary to become a competent worker in the world of work. The job analysis is carried out through the DACUM process, which helps to explore major areas of work (duties), tasks, related technical knowledge, a list of tools and equipment, and workers' traits collected from the panel of expert workers.

Step IV: Standards Development: The development of performance standards and details of competency standards is guided by the trained facilitators for at least one unit of competencies. The development of the remaining standards/criteria of other units of competencies can be

assigned to the selected competent expert from the technical sub-committee members in a review workshop. The set of identified standards is then presented for its endorsement.

Step V: Approval: NCS developed by TSC members will be presented at the SSC meeting for feedback and verification. If all the members of the SSC agree with this NCS, the SSC meeting shall endorse the NCS. Then, the endorsed NCS is presented to the board meeting. Any feedback from the board members in the NCS is subject to be addressed before final approval from the board for its implementation. A prototype of National Competency Standards is presented in Annex 2.

2.4.3 Developing a Curriculum

Once the competency standards are developed, the curriculum development process begins. Competency standards are the input for developing a curriculum. If the competency standards are not available, the curriculum can be developed through job analysis. The job analysis yields a job profile with major duties and tasks of an occupation. After developing competency standards or a job profile, the stages below are followed while developing a curriculum.

Stage 1: Initiation

For developing the TVET curriculum, the sector skills committee or subject committee decides the aim and objective of the curriculum. The committee also collects ideas from experts about the title, course duration, eligibility, career progression, and employment opportunities of the curriculum to be developed.

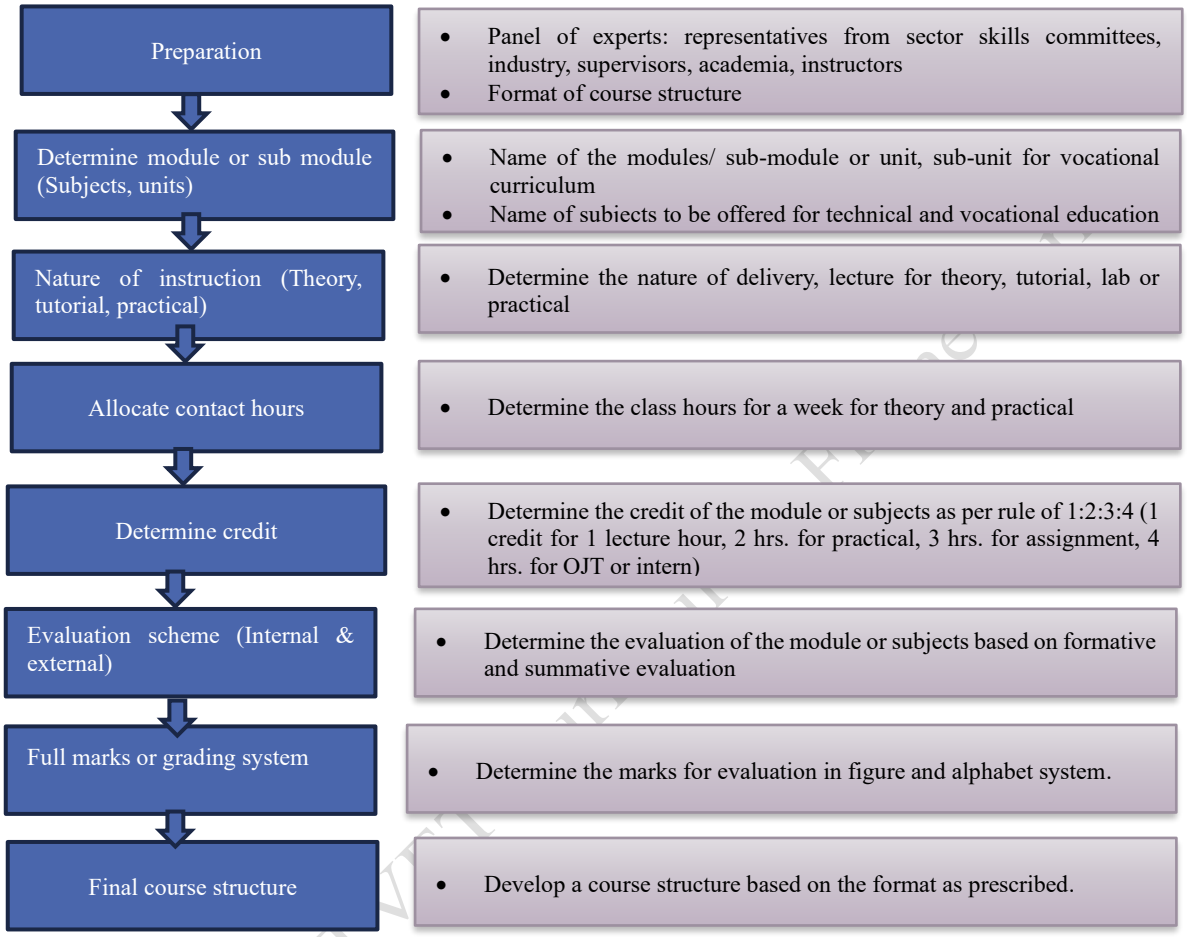
Stage 2: Determination of Course Structure

The course structure covers the major aspects of the curriculum. The following procedure is followed while determining the course structure:

- Determine the course structure from the workshop with relevant stakeholders.
- Identify subjects, modules, sub-modules or units, and sub-units to be included in the curriculum (modules/units represent grouped duties from the job analysis).
- Define the theoretical and practical class hours and allocate credit (based on the ratio 1:2:3:4 for theory, practice, assignments, and work-based learning) within the proposed subjects and modules/units, respectively.
- Determine the nature and scoring of formative and summative evaluations, i.e., internal and external evaluations.

- Develop a consensus among the stakeholders on the proposed course structure.

Figure 2.7: Process of Finalizing the Course Structure



Stage 3: Task/Content Analysis

The nature of the program determines the task/content analysis. Tasks are analyzed in the context of developing curricula for vocational training programs. Likewise, content analysis and competencies for each subject are determined for technical and vocational education programs.

Vocational Training Program: It includes short-term training to provide skills and competencies required for various professions and occupations. The curriculum development process for such a program follows specific procedures. First, it requires the creation of a course structure followed by units and sub-units based on the duties and tasks obtained from the job analysis. Then, it is necessary to determine the estimated time required for theoretical and practical exercises to perform the assigned task using detailed procedures. However, the performance of the task can be affected by the given condition. In this case, mentioning appropriate measurements and prescribed criteria would be advantageous. It is also necessary

to align task steps with the related technical knowledge. In this stage, it is also suggested that the necessary tools, equipment, and materials required for performing tasks be finalized along with the occupational health and safety guidelines.

Formal Technical and Vocational Education Program: It covers pre-diploma, diploma, certificate, and higher-level technical educational programs. In developing a curriculum for such a program, it is necessary to analyze the subject and divide it into units and sub-units based on the course structure. As part of structuring the curriculum, it is necessary to articulate the topic, objectives, and key learning outcomes of the unit or subject. Furthermore, a description of the performance indicators or criteria of the specified sub-unit, unit, module, and subject is required to be mentioned. Regarding the theoretical subjects, it is required to mention details of unit-wise contents with the list of learning outcomes, competencies, or major areas of learning within the individual subjects. The duration of instruction to complete the contents or tasks, along with a list of reference books, also needs to be specified.

Stage 4: Curriculum Writing

A group of experts from both employers' associations and instructors from related occupations design key program outcomes for each unit or module under the guidance of a curriculum developer/facilitator. They follow both top-down and bottom-up approaches to reflect the outcomes of the units or modules. In the beginning, general aspects of the curriculum (description, objectives, duration, trainer/instructor qualifications, student-instructor/teacher ratio, training methods, and evaluation procedures) are determined. The contents for the subject or program are drafted in the course structure (including the objectives, contents, hours, references, and textbooks). This also includes the details of practical tasks, project work, and learning duration. At this stage, it is also necessary to set evaluation criteria and methods, including a specification grid. Finally, the standards for the physical infrastructure, equipment, and tools required for the curriculum implementation are provided. Other important forms, formats, and information can also be kept in the curriculum.

Stage 5: Review and Validation of the Draft Curriculum

A group of experts (both academic and employers) review the general aspects of the draft curriculum and make necessary adjustments. The team can also suggest revising task details (such as task name, required skills, theoretical and practical hours, standards, related knowledge, tools, and safety precautions). They also make a consensus on finalizing the contents of the subject or program both for classroom and work-based learning. The team also

assesses the technical aspects of the curriculum. It makes required revisions on other elements such as credit, instructional design, students' assessment, instructors' criteria, necessary tools and equipment, and criteria for learning places. After making the required revisions, the technical sub-committee recommends for its approval.

Stage 6: Approval of the Curriculum

The curriculum board at CTEVT provides the final approval of the developed curriculum. Legally approved curricula are subjected to dissemination from various platforms. The curriculum also becomes eligible for national certificates. The stakeholders in charge of the TVET institutions will develop a necessary plan for curriculum implementation.

2.5 Prototypes of TVET Curricula

TVET curricula encompass various essential components, including program design, learning modules, assessments, and industry partnerships. Program design establishes the overall structure of the curriculum, setting objectives to meet industry demands and learner requirements. Learning modules break down the curriculum into manageable units, detailing specific skills and competencies to be acquired by learners. Assessments gauge learner progress and achievement of desired outcomes, often through practical demonstrations and theoretical exams. The prototypes of the curricula are presented in Annex 3 and 4, respectively.

CHAPTER THREE

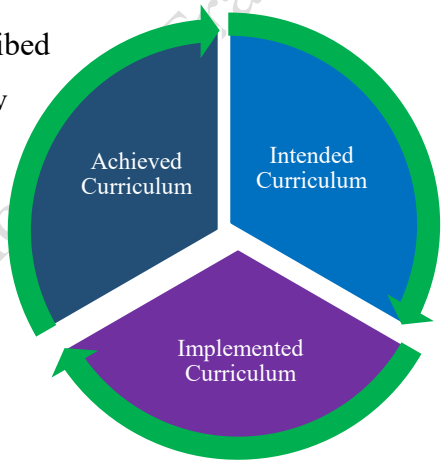
Implementation of TVET Curriculum

Curriculum implementation is one of the major aspects of the curriculum process. It is also a cyclic process measured by aspects of intended, implemented, and achieved curricula. The intended curriculum is formally proposed to be taught and learned. Likewise, the implemented curriculum entails curriculum execution in practice. The final aspect is the achieved curriculum concerned with learning outcomes.

3.1 Curriculum Implementation

There needs to be a robust plan to implement the intended curriculum successfully. It is essential to have effective strategies to implement the prescribed curriculum. The learning outcomes depend on how effectively the intended curriculum has been implemented. Therefore, the implementers of the curriculum are required to design effective instructional strategies.

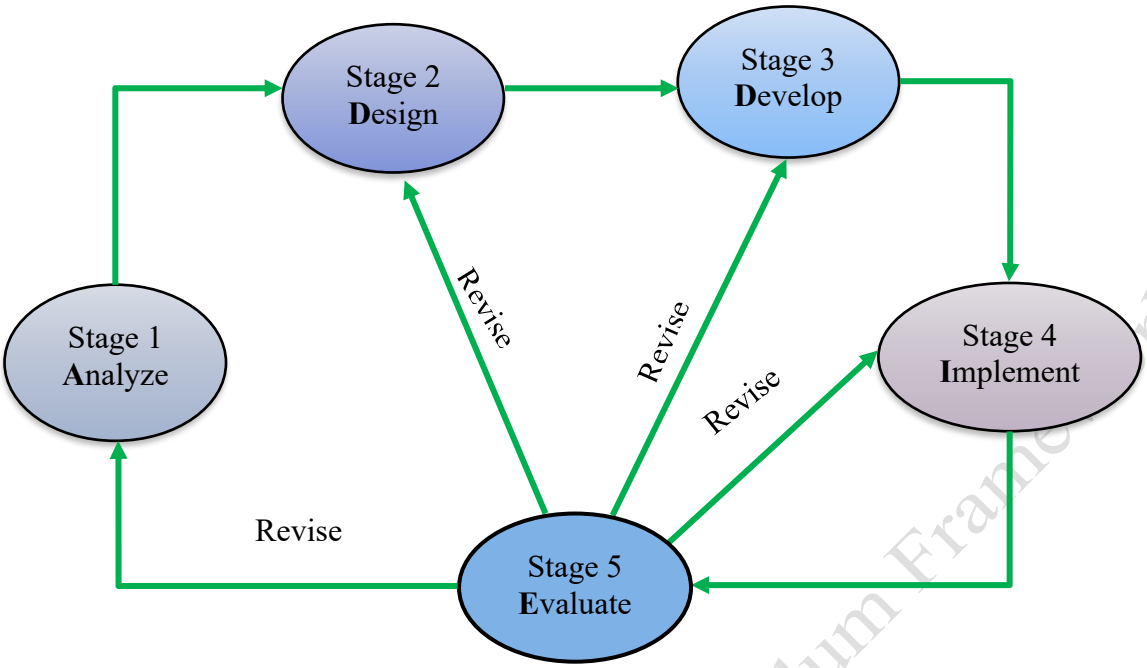
Figure 3.1: Three Aspects of Curriculum



3.2 Instructional Design

Instructional design is a systematic and reflective process used to plan, develop, deliver, and evaluate instructional activities, materials, and learning experiences based on established principles. Its purpose is to create engaging teaching-learning that helps learners achieve their objectives. Furthermore, the instructional design translates the contents outlined in the curriculum into measurable learning outcomes for the learners. Instructors can use appropriate models to design their instructional strategies considering the context. The ADDIE model, as proposed by Gagne, Wager, Golas, and Keller (2004; see Figure 3.2), has been presented as a reference.

Figure 3.2: The ADDIE Model of Instructional Design



The ADDIE model is a systematic framework for the implementation of the curriculum. It begins with analyzing learners' needs and defining clear learning objectives, followed by developing instructional materials and exercises. Implementation involves delivering the program as per the plan, and the ongoing evaluation measures the progress, ensuring continuous improvement. Feedback in the evaluation phase informs improvements, and the instructional design process remains iterative and cyclical. With the active involvement of instructors, the school or institute has to develop an implementation plan based on an appropriate model aligning with the academic calendar and instructor development plan.

Curriculum Implementation Process

It involves a systematic approach to ensure that learning outcomes are achieved effectively. The implementation process involves the following steps:

i. Understanding Curriculum

- Review the curriculum objectives/learning outcomes, structure, and content (theory and practical tasks).
- Align the curriculum with the institutional academic calendar.
- Identify who the learners are and what their background.
- Conduct the learners' needs analysis.

- Determine the performance gap of the learners.
- Study learner's interests and motivation.
- Determine the available resources.

ii. Resource Allocation

- Assign instructors, assistant instructors, and support staff.
- Ensure the availability of tools, equipment, and learning materials.

iii. Instructional Planning and Design

- Develop lesson plans and schemes of work-based learning based on the curriculum.
- Identify appropriate teaching and learning methods for practical and theoretical aspects.
- Integrate work-based learning where applicable.
- Plan assessment and evaluation methods.
- Outline execution strategies.
- Select appropriate instructional technologies.
- Create instructional materials and media.
- Develop training schedules.
- Set instructional delivery standards.
- Develop test items.

iv. Capacity Building

- Identify the training needs for instructors.
- Facilitate and coordinate training programs for instructors at relevant institutes, focusing on enhancing their pedagogical or instructional skills and upgrading their occupational skills.

v. Implementation

- Deliver the curriculum through institution-based, industry-based, or mixed-mode learning approaches.
- Engage learners through interactive and hands-on activities.
- Ensure regular monitoring and supervision of instruction through institute or school management.
- Develop tools for formative and summative assessments.

vi. Assessment and Evaluation

- Conduct formative and summative assessments to evaluate the performance of the learners.
- Assess the effectiveness of the instructional strategies.
- Collect feedback from learners, instructors, and stakeholders.

vii. Continuous Improvement

- Analyze feedback and assessment results to identify gaps.
- Revise instructional plans and strategies as required.
- Update the implemented curriculum based on industry/market demands and technological advancements.

3.3 Instructional Strategies

Instructional strategies are approaches to make the teaching-learning process effective. The appropriate strategy depends on rational choice of the instructors considering their teaching-learning context. In the table below, some approaches to instructional strategies that can be utilized in the field of TVET have been presented.

Table 3.1: Typology of Instructional Strategies and Techniques

Strategies	Purpose	Instructional methods and techniques
Based on the source and role		
Teacher-centered	To focus on the teacher as the primary source of knowledge and skills, providing direct instruction and guidance.	Lectures, demonstrations, tutorials, modeling, drill, and practice
Learner-centered	To focus on the learner's active participation, self-discovery, and responsibility in the learning process	Problem-based learning, collaborative projects, self-directed learning, case studies, simulations, role plays, gamification
Based on the context of learning		
Classroom-based	To provide theoretical knowledge, structured learning, and foundational concepts in a controlled environment	Lectures, discussions, demonstrations, theory-based assignments, group activities in a classroom setting
Workplace-based	To integrate practical, on-the-job experience with formal education, linking theory with real-world application	Internships, apprenticeships, on-the-job training, job shadowing, industry placements
Simulated learning	To provide a controlled, safe environment where learners can practice skills and problem-solving without real-world risks	Virtual labs, role-playing, mock workshops, equipment simulators, and scenario-based training
Community-based	To connect learners with the local community to apply technical skills in real-world	Community service projects, social work placements, and volunteering

	social or service-oriented projects	
Based on the proximity		
Face-to-face instruction	To offer direct, in-person instruction and hands-on experience with immediate feedback and interaction	Practical workshops, hands-on training, instructor-led demonstrations, group discussions, industry visits
Virtual learning	To provide flexible, online access to learning materials and instruction for remote or self-paced learning	Online modules, video tutorials, virtual labs, simulations, and e-assessments
Blended learning	To combine the flexibility of virtual learning with the interactivity and practical experience of face-to-face instruction	Online learning followed by in-person workshops, video lectures combined with hands-on practice, and virtual lab work alongside physical training
Based on instructional approaches		
Deductive learning	To provide explicit teaching of specific skills or concepts.	Lecture, demonstration, guided practice, modeling
Inductive learning	To enable learners to discover technical principles, procedures, or patterns by analyzing specific tasks or scenarios	Case studies, data analysis, pattern recognition activities, inquiry-based learning, problem-solving tasks
Project-based learning (PBL)	To engage learners in complex, real-world projects that require applying technical skills and problem-solving abilities	Developing and completing projects that mi mic industry tasks, working on prototypes or product development, presenting outcomes to stakeholders
Discovery learning	To encourage learners to explore, experiment, and discover solutions or principles independently or collaboratively	Conducting practical experiments, exploring new tools or software, troubleshooting faulty systems, and designing custom prototypes
Based on collaboration		
Cooperative learning	To promote teamwork, communication, and peer-to-peer learning	Group projects, think-pair-share, peer tutoring
Competitive learning	To motivate learners by fostering a spirit of competition, encouraging excellence and innovation	Skills competitions, project showcases, time-bound challenges

Effective instructional design generally includes more than one strategy. Depending on the context, the instructor has to adopt a particular strategy and select appropriate instructional methods. The curriculum provides the content for instruction. However, it is the creativity of the instructor to select the most appropriate and innovative strategy for effective instructional delivery.

3.4 Teaching Learning Methods

The instructor has to select the most appropriate instructional method considering the content and learning situation. There are various instructional methods for the effective delivery of the TVET curriculum. The commonly used instructional methods are provided in Table 3.2, which can be used only as a reference. The instructors are always encouraged to apply creativity and innovation in selecting instructional methods.

Table 3.2: Reference of Instructional Methods and their Application

Instructional Methods	Knowledge	Skills	Attitude	Interpersonal Skills	Problem Solving Skills	Idea Generating	Learner Activity
Brainstorming						□	□
Case study	□				□		□
Coaching		□		□			□
Computer-based training	□						□
Conference	□						□
Debate	□						□
Demonstration		□					
Directed readings	□						□
Discovery learning	□	□					□
Discussion	□						□
Drama			□	□			□
E-learning	□				□	□	□
Experiential activities			□	□			□
Experiments	□	□					□
Expert guest	□	□					
Field trips	□		□				□
Fishbowl discussion				□			□
Focus group (task group)	□				□		□
Games/puzzles	□						□
Guided practice		□					□
Homework	□						□
Illustrated talk	□						
In-basket exercise	□	□					□
Independent study	□						□
Internship		□					□
Interview	□		□	□			□
Journals			□				□
Laboratory/workshop exercises	□	□					□
Learning contracts	□	□	□	□	□	□	□
Lecture	□						
Library assignment (readings)	□						□
Modeling	□		□	□			
On-the-job training (OJT)		□	□	□			□
Panel discussion (forum, colloquy)	□						
Peer instruction	□	□					
Performance try-out		□					□

Instructional Methods	Knowledge	Skills	Attitude	Interpersonal Skills	Problem Solving Skills	Idea Generating	Learner Activity
Problem solving					□		□
Project		□			□		□
Questioning	□	□	□	□	□		
Recitation	□						□
Role-play			□	□			□
Seminar	□						
Simulation	□	□					□
Small group discussion (buzz groups)	□		□	□			□

Note: This table is adapted from Collum and Batliner (1994)

3.5 Learner's Assessment and Certification

Assessment serves as the foundation for qualifying learners in a given course, subject, or module. It involves collecting information or measuring specific variables to determine their level of competency, encompassing knowledge, skills, and attitudes, for a particular occupation. The instructor should be proficient in utilizing valid and reliable assessment tools and techniques to measure student performance effectively.

The three dimensions of assessment are *of learning*, *for learning*, and *as learning,* as Earl (2013) suggested. The assessment of learning focuses on measuring what the students have learned at the end of a course or program. Various tests, exams, or practical evaluations are conducted to determine whether the students have achieved the required skills and knowledge. The main purpose of this assessment is to determine their competence and provide a grade or qualification. The second dimension, assessment for learning, is concerned with helping students learn better during the learning process. The instructors identify gaps in the knowledge or skills of the students and provide feedback to improve learning. The main purpose of assessment for learning is to guide and support students' progress. The last dimension, assessment as learning, is a self-reflective process where learners actively monitor their progress, set goals, and develop critical thinking and problem-solving skills. This assessment also empowers students to reflect on their learning and take responsibility for their improvement. The following table summarizes the difference between the three dimensions of assessment:

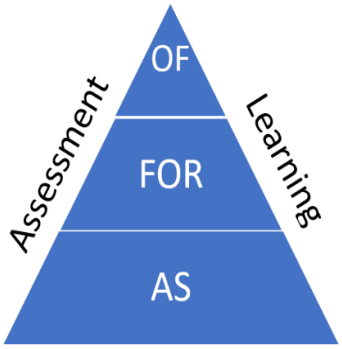
Table 3.3 Features of Assessment of, for, and as Learning

Approach	Purpose	Reference Points	Nature	Assessor
Assessment of learning	Determine the level of competence and provide a grade or qualification	Standards, criteria, or benchmarks	Summative	Instructor

Assessment for learning	Guide and support students' progress	Learners' current progress in relation to goals	Formative, continuous	Instructor
Assessment as learning	Help learners take ownership of their learning process through self-assessment and self-correction	Learners' self-assessment and personal goals	Formative, continuous	Student

Assessment is an integral part of the learning process. Learners should actively participate in the learning process, and their learning should be continuously assessed. The assessment system at CTEVT has been gradually redesigned and implemented to align with current educational needs, as illustrated in Figure 3.3. As the figure depicts, more emphasis should be placed on assessment as learning and assessment for learning than on assessment of learning.

Figure 3.3: Modern Views on Assessment in



3.6 Implementing Formative Assessment

Formative assessment is a continuous process that identifies what the learner has achieved and support to develop instructional strategies. It is diagnostic as the instructor regularly monitors the student's progress, identifies learning difficulties, and provides instructional remedies for the learner. The learners should be assessed transparently, and their progress should be recorded. If the learner fails to perform the given task, it is the responsibility of the instructor to provide the learner with opportunities to do better as far as possible. The common techniques of formative assessment are project work, case study, viva, written tests, observation, skill tests, etc. The general strategies to implement the formative assessment are given below.

- Orient the learners on the learning objectives, assessment methods, and measures.
- Develop assessment tools and techniques in collaboration with relevant instructors at the institute.
- Assess the student's knowledge, skills, and attitude regularly and continuously and record their progress daily/weekly (progress card).
- Provide feedback to the learner to improve their performance with re-attempting opportunities.
- Make the performance results transparent to the students.

- Submit each student's internal assessment marks based on their cumulative performance.

Formative assessment is crucial in TVET as the summative assessment may not cover all the tasks/competencies outlined in the curriculum. Therefore, formative assessment should be well planned and implemented as a continuous assessment to measure the learner's progress. This assessment emphasizes hands-on learning and practical applications, which are evaluated based on the Performance Guide (PG) developed by the instructor. It also recognizes the importance of theoretical understanding and professional conduct.

3.7 Implementing Summative Assessment

A summative assessment is conducted at the end of a semester or academic year to evaluate the overall learning outcomes of students. It typically includes various forms of evaluation, such as written examinations, practical tests, and viva voce. The final assessment is based on the cumulative marks obtained by students in both internal evaluations, such as terminal exam assignments, project work, and the final examinations.

To ensure that summative assessments are comprehensive and aligned with the curriculum, tests should proportionately cover all key topics and concepts outlined in the curriculum. This approach guarantees that students are evaluated on their understanding of the entire curriculum rather than isolated sections. The TVET curriculum should include a table of specifications to guide assessors and learners, as presented in Annex 7.

While designing test items, instructors should incorporate varying levels of difficulty to address the diverse skills, knowledge, and attitudes of students. Using frameworks like Bloom's Taxonomy can help structure questions that assess different levels of cognitive, affective, and psychomotor domains, ranging from foundational to advanced skills. This method enhances the validity of assessments while providing a balanced evaluation of students' intellectual abilities.

TVET programs should prioritize practical assessments over theoretical ones, as all practical tasks can be covered through internal assessments. The summative assessments may not comprehensively cover all practical tasks, making internal assessments more critical. In Pre-diploma and Diploma programs, 60% weightage is given to internal assessments, while 40% is allocated to final assessments for both theory and practical evaluations. A minimum of 40% in theory and 60% in practical assessments is required to pass. For Industrial Practice, OJT, and WEP, all marks come from internal evaluations, with a minimum pass mark of 60%. As the

summative assessment evaluates the student's performance, both grading and certification must be based on the approved guidelines.

CHAPTER FOUR

Curriculum Audit

A curriculum audit is an assessment process in which a team analyzes curriculum policy and the system. During the curriculum audit, documents, interviews, and site visits are the major sources to determine the extent to which there is a similarity among the intended, implemented, and achieved curricula. Curriculum assessment is a process of reviewing the intended program outcomes and articulating and revising a curriculum through collective dialogue with various stakeholders, including employers, instructors, and students.

4.1 Curriculum Monitoring and Evaluation

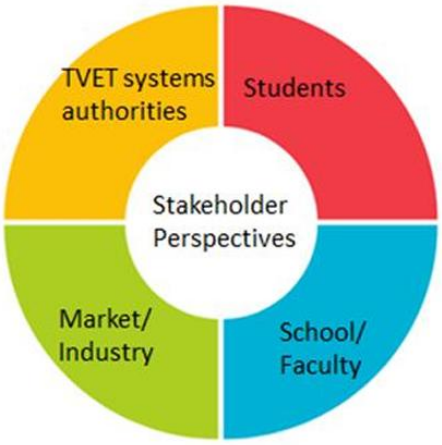
Curriculum monitoring is a continual data collection process to ensure curriculum implementation aligns with plans. Evaluation measures the effectiveness of formal curriculum, aiding improvements and informing future development. Both processes align the intended curriculum with the achieved one, offering evidence for reforms in curricula and educational policies. Establishing a feedback collection mechanism from the end users is crucial in continuously monitoring and assessing the curriculum. Nevertheless, feedback should be collected from various stakeholders, including employers, employees, students, instructors, etc.

The curriculum evaluation is the process of assessing whether the curriculum meets the expected results for the curriculum's development. The evaluation of the curriculum can be carried out by employing both primary and secondary sources. Feedback from employers, students, instructors, and other stakeholders is the primary data source, whereas the students' results and curriculum documents are secondary data sources for curriculum evaluation. Hence, the main objective of the curriculum evaluation is to judge the quality of the curriculum in specific programs or content areas. The major sources for curriculum evaluation are given below.

Stakeholders' Input

Employers' feedback is an essential data source for curriculum evaluation. This is the information that stakeholders provide about their demands, expectations, and perspectives on the curriculum. Stakeholders' input can enhance the relevance, responsiveness, and accountability of the curriculum. However, stakeholders' input should be representative and

inclusive. Moreover, stakeholders' input should be communicated and duly considered, as it may create opportunities and reduce the challenges. The curriculum evaluation can include student performance data such as test scores and grades for academic assessment. Qualitative feedback from students, teachers, and parents can also offer valuable insights.



Student Outcomes

Student outcomes are also an important data source for curriculum evaluation. These are the measurable results of learning achievements, such as pass percentages and grades. Student outcomes can also provide evidence of the alignment, relevance, and impact of the curriculum on student achievement and growth. However, student outcomes should be interpreted with caution, as they may be influenced by factors beyond the curriculum, such as student educational attainment and background, motivation, or instruction.

Graduates' Feedback

Graduates' feedback is another valuable data source for curriculum evaluation. The information that graduates provide about their perceptions, opinions, and satisfaction with the curriculum. graduate feedback can be collected through tracer studies, surveys, interviews, focus groups, or observations. Nevertheless, it is important to balance graduate feedback with other data sources, as it may be subjective, biased, or incomplete. Moreover, graduates' feedback should be collected and used respectfully, as it may affect student motivation, engagement, or trust.

Instructors' Feedback

Another useful data source for curriculum evaluation is instructor feedback. The instructors provide information about their experiences, challenges, and suggestions for the curriculum. The feedback from the instructors can be collected through surveys, interviews, focus groups, or observations. Instructors' feedback can offer insights into the feasibility, appropriateness, and effectiveness of the curriculum. However, their feedback should be complemented with other data sources, as personal, professional, or organizational factors may influence it. Moreover, instructors' feedback should be valued and acted upon, as it may affect their commitment, collaboration, or innovation.

Curriculum Documents

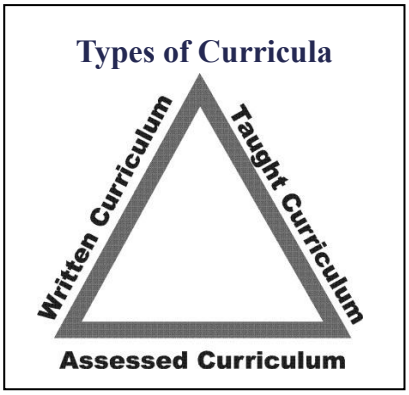
The next source for curriculum evaluation is the curriculum documents. These are the written materials that describe the goals, content, structure, and assessment of the curriculum. Curriculum documents can include course structure, subjects and contents, practical skills, list of tasks, textbooks, evaluation scheme, and standards. Curriculum documents can provide evidence of the coherence, consistency, and quality of the curriculum design and implementation. However, curriculum documents should be verified with other data sources, as they may not reflect the actual curriculum practices, adaptations, or outcomes. Curriculum documents should be reviewed and updated regularly.

External Benchmarks

An external benchmark is also a good source for curriculum evaluation. These are the standards or criteria that external authorities or organizations establish to evaluate the curriculum. External benchmarks include national or international frameworks, accreditation requirements, and best practices. External benchmarks can guide, validate, or compare curriculum development and improvement. However, external benchmarks should be adapted to the local context, as they may not suit the specific needs, expectations, or realities of the learners, instructors, or employers. Moreover, external benchmarks should be used critically, as they may impose constraints, pressures, or conflicts on the curriculum.

4.2 Curriculum Audit

A curriculum audit is a systematic evaluation process conducted by a team to examine curriculum policies and the overall educational system. This process involves the review of relevant documents, stakeholder interviews, and site visits to assess the degree of alignment with the curricula. The process is the most powerful tool used to improve curriculum and student achievement.



The key objectives of a curriculum audit are to make accountable and continuous improvements and maintain coherence between curriculum and its components. This includes aligning the written curriculum (what is intended to be taught), the taught curriculum (what is delivered in classrooms and workplaces), and the assessed curriculum (what students have learned). A curriculum audit helps to create coherence within the curriculum, ensuring that all parts work together effectively to support student learning. Similarly, audits help ensure that resources - including time, funding,

and materials - are utilized efficiently. This involves analyzing whether instructors have adequate time to cover essential content, whether resources are aligned with learning objectives, and whether equitable access to resources exist for all students. Curriculum audit can help identify and address potential barriers to equity, such as bias in contents, disparities in resource allocation, or a lack of differentiated instruction to meet diverse learners' needs.

Audit tools are essential for the collection of evidence as well as for providing suggestions for making the curriculum more relevant. The audit can be conducted either by an internal audit team or by an external auditor. Both approaches have their own advantages: internal audits can be more cost-effective and quickly implemented, while external audits might provide a more objective perspective.

The curriculum audit:

- Provides ample space to control resources, programs, and personnel.
- Assists in establishing clear and valid objectives.
- Establishes internal consistency.
- Improves productivity of the training programs and resources.
- Reduces the risk for both curriculum implementer and learner.
- Provides insight to adjust, improve, or terminate curriculum.

The audit process should also consider the continuity and integration of curriculum, as well as measure individual programs and classrooms. In addition to this, the audit should assess the design, delivery, and measurement of the taught curriculum and determine how these areas can be better aligned. The bases for curriculum audit are:

Written Curriculum

- The purpose, goal, target people, and employment potential
- Contribution to the achievements of education policy and strategies
- Specific learning objectives that align with standards and learning achievements
- Curriculum resources and supplementary materials available for instructors
- Instructional strategies and learning activities that align with learning outcomes
- Student performance criteria that reflect learning objectives
- Provisions for monitoring of the curriculum

Taught Curriculum

- Instruction as per specified learning objectives

- Use of available curriculum resources and supplementary materials
- Effectiveness of instructional strategies
- Assigned projects, problems, and tasks to improve students' performance
- Students are provided with learning experiences that engage them in active learning
- Differentiated instruction to meet the needs of individuals and groups of students
- Access to instructional materials, resources, and services to enhance the learning
- Transfer of training in the delivery
- Providing feedback to the instructors through instructional supervision.

Assessed Curriculum

- Regular assessment of student progress
- Assessments aligned with learning outcomes
- Opportunities for students to take tests that are alike in content and formats of assessments
- Use of a variety of classroom-based assessment methods and tools to measure student's progress
- Providing assessments that require students to use knowledge, comprehension, application, and reasoning skills
- Reporting student's progress periodically about their learning to students and parents in a way that is clear and understandable
- Monitoring the results of classroom-based assessments to ensure the learners' achievement

4.3 General Procedure of Curriculum Audit

The auditing process also considers the program in logical, objective, scientific, standardized data, test scores, and goals. The following is the general procedure for curriculum audit:

- Identify curriculum documents to be audited.
- Negotiate a framework for the assignment of curriculum audits with the concerned authority.
- Review the given curriculum and its standard in depth.
- Identify reliable data sources and scope.
- Develop data collection tools as per the identified data sources in reference to alignment indicators.

- Collect comprehensive data from the predetermined data sources.
- Tabulate the collected data.
- Analyze the organized data.
- Present initial findings in a tentative report.
- Analyze reactions and investigate main concerns.
- Review and refine the reports based on the evidence.
- Prepare the final report of the curriculum audit and present it to the concerned authority.

Table 4.1: Data Source and Tools Selection Matrix

Curriculum alignment	Data source	Methods	Suggested tools
Written curriculum	Curriculum documents Principal/vice-principal Teacher/Instructor/ Student/Parents/Employer	Observation Interview Survey	Observation checklist Interview guideline Questionnaire
Taught curriculum	Training institute Principal Teacher/Instructor Student/Schedule Teacher's logbook	Observation Interview Survey Observation	Observation checklist Interview guide Questionnaire Observation checklist
Assessed curriculum	Assessment tools Student progress report Student Parents	Observation Survey	Observation checklist Questionnaire

Performing a curriculum audit isn't just a one-time task; it's an ongoing commitment to quality TVET. This process uncovers the strengths and gaps within the curriculum and sets a path for continuous improvement to keep the momentum and schedule regular audits. This will ensure the curriculum evolves with new learning standards and diverse student needs. Invite feedback from teachers and students regularly to keep the curriculum relevant and engaging. Engaging fully in this process promises improved TVET delivery quality. The curriculum audit, indeed, is not merely an evaluation of the curriculum. It is undertaken to improve the quality of the program to make it more professional and relevant to the industry and students.

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Annex 1: Level Descriptors of TVET Curriculum

Level	Knowledge	Skills	Soft Skills	Performance Outcomes	Level of Responsibility	Possible position/ title
1	Basic knowledge	Basic skills	Readiness to work	Familiar to the occupation	Assist to work and requires full supervision	Novice
2	Fundamental knowledge	Ability to solve routine problems	Readiness to employment	Carry out pre-defined tasks	Works with partial supervision	Beginner
3	Wide range of knowledge	Some autonomy in problem-solving	Equips with employability skills	Perform a wide range of tasks	Responsible and work without supervision	Technician
4	Specialized knowledge	Ability to generate solutions	Equips with teamwork, and Entrepreneurship skills	Perform specialized and complex tasks	Fully responsible and can also supervise others	Senior Technician
5	Multidisciplinary and specialized knowledge	Specialized skills for problem-solving	Exhibits leadership and managerial skills	Perform specialized tasks and make decisions	Highly responsible and can operate own business	Technical Expert
6	Advanced range of knowledge	Specialized skills in advanced problem-solving, and innovation	Equips with transformational leadership and effective resource management skills	Solve complex problems by applying advanced technical skills	Manage business and industry	Senior Expert/ Manager
7	These levels will be explained at the time of NVQF implementation.					
8						

Annex 2: Prototype of National Competency Standard

National Competency Standard (NCS)

Qualification Title :

Level :

Sector :

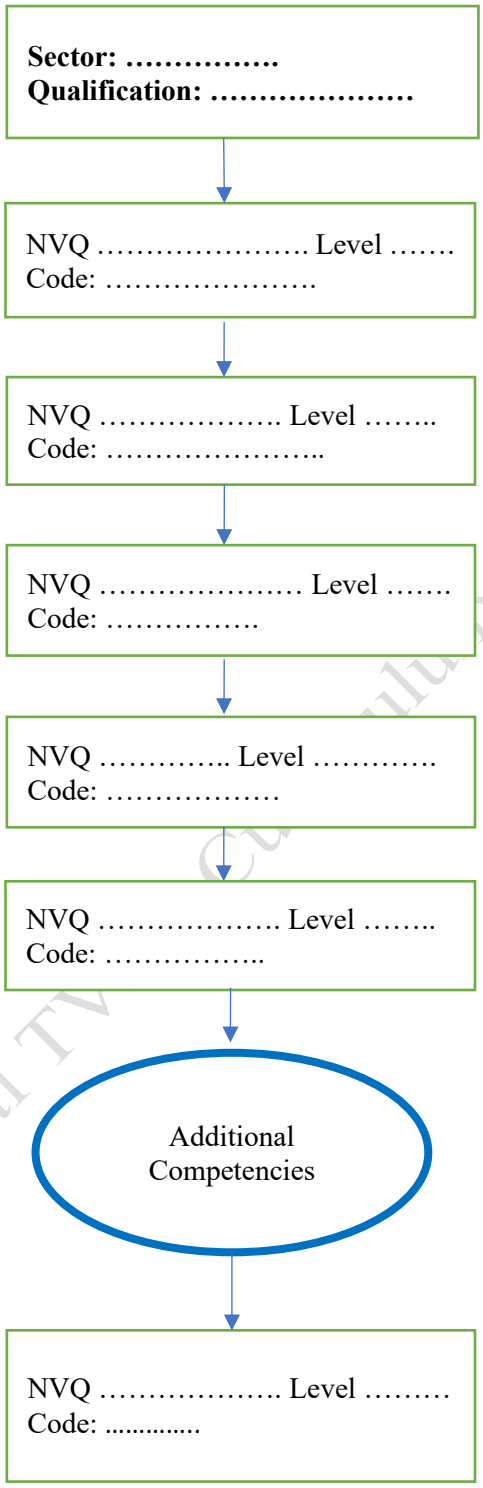
NCS Code :

Council for Technical Education and Vocational Training

NATIONAL SKILL TESTING BOARD

Madhyapur Thimi-17, Sanothimi, Bhaktapur, Nepal

Developed: ……



NVQ …… Level ……..

CODE……

The **NVQ ……Level …….** qualification consists of competencies that includes……
……..

The Units of Competency comprising this Qualification include the following:

CODE NO.	*BASIC COMPETENCIES*
……...	……..
……	……..
……	……..

CODE NO.	**COMMON COMPETENCIES**
……...	……..
……	……..
……	……..

CODE NO.	**CORE COMPETENCIES**
……...	……..
……...	……..
……	……..

A person who has been awarded with certificate ……. Level is competent to be employed in any of the following positions.

- …….
- …….

CORE COMPETENCIES

UNIT OF COMPETENCY: …….

UNIT CODE : …….

UNIT DESCRIPTOR : ……

ELEMENTS	**PERFORMANCE STANDARD** ***Bold & Italicized*** terms are elaborated in the Range of Variables	**Required Skills**
1. …… …..	1.1 ***Personal Protective Equipment (PPE)*** is used in accordance with task requirement. 1.2 ***Tools and equipment*** are inspected visually and operations are checked. 1.3	• Selecting • Collecting • Checking •
2. …… ….	2.1 .	•
Tools, Equipment and Materials: • ……		

Required Knowledge

Required Knowledge		
Technical Knowledge	**Applied Calculation**	**Graphical Information**
• …… • ……	…….	……..

RANGE OF VARIABLES

VARIABLE	**RANGE**
……..	*May include but are not limited to:* • …… • ……..
……	*May include but are not limited to:* • …… • ……..

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. …… 1.2. ……
2. Methods of Assessment	**Competency in this unit assessed through:** 2.1 ……. 2.2 ……..
3. Context of Assessment	3.1. Competency may assess in the actual workplace or at the accredited assessment center.

Annex 3: Prototypes of Curriculum for Vocational Skills Training

कार्यक्रम शीर्षक: (पाठ्यक्रमको नाम, दक्षतामा आधारित छोटो अवधिको पाठ्यक्रम)

तालिम अवधि: (घण्टा/महिना/वर्ष)

क्षेत्र/उपक्षेत्र: (जस्तै: निर्माण/प्लम्बर)

१. परिचय: (पाठ्यक्रमको संक्षिप्त वर्णन गर्ने)

२. लक्ष्य: (पाठ्यक्रमले निर्धारण गरेको लक्ष्य उल्लेख गर्ने)

३. उद्देश्य: (पाठ्यक्रमका उद्देश्य तथा सिकाइ उपलब्धिहरू उल्लेख गर्ने)

४. पाठ्यक्रम विवरण: (पाठ्यक्रममा समावेश भएका विषयवस्तुहरूको संक्षिप्त विवरण उल्लेख गर्ने)

५. पाठ्यक्रमको विशेषता: (पाठ्यक्रमको विशेषता, सैद्दान्तिक र प्रयोगात्मक सिकाइको अनुपात उल्लेख गर्ने)

६. तालिम अवधि: (पाठ्यक्रम अनुसारको सिप सिक्न लाग्ने समय अवधि घण्टा वा महिनामा उल्लेख गर्ने)

७. लक्षित समूह: (पाठ्यक्रम अनुसार सञ्चालन हुने तालिमका लक्षित समूह उल्लेख गर्ने)

८. लक्षित स्थान: (तालिम कार्यक्रम सञ्चालन हुने सम्भावित स्थान उल्लेख गर्ने)

९. प्रशिक्षार्थी संख्या: (तालिमको लागि एकपटकमा अधिकतम सहभागि हुन सक्ने संख्या उल्लेख गर्ने)

१०. प्रशिक्षणको माध्यम भाषा: (पाठ्यक्रममा उल्लेखित विषयवस्तुको प्रशिक्षण गर्ने माध्यम भाषा उल्लेख गर्ने)

११. प्रशिक्षार्थी उपस्थिति: (तालिम कार्यक्रम सफलतापूर्वक सम्पन्न गर्ने न्यूनतम हाजिरी सम्बन्धी व्यवस्था उल्लेख गर्ने)

१२. प्रवेश मापदण्ड: (प्रशिक्षार्थीको न्यूनतम न्यूनतम शैक्षिक योग्यता, उमेर तथा प्रवेश परीक्षा सम्बन्धी व्यवस्था उल्लेख गर्ने)

१३. प्रशिक्षकको योग्यता: (तालिम सञ्चालन गर्ने प्रशिक्षकको शैक्षिक योग्यता, तथा अनुभव उल्लेख गर्ने)

१४. प्रशिक्षक- प्रशिक्षार्थी अनुपात: (सैद्धान्तिक र प्रयोगात्मक अभ्यासको लागि प्रशिक्षक-प्रशिक्षार्थीको अनुपात उल्लेख गर्ने)

१५. प्रशिक्षण सामग्री: (प्रभावकारी प्रशिक्षण तथा प्रदर्शनका लागि आवश्यक माध्यम र सामग्रीहरूको विवरण उल्लेख गर्ने)

१६. प्रशिक्षण विधि (तालिम सञ्चालन गर्न अपनाउने सैद्धान्तिक र प्रयोगात्मक सिकाइका विधि र प्रक्रिया उल्लेख गर्ने)

१७. प्रशिक्षार्थी मूल्याङ्कन: (तालिम कार्यक्रमका सहभागीहरूको सैद्धान्तिक र प्रयोगात्मक सिकाइ उपलब्धिलाई मापन गर्ने मूल्याङ्कनका आधार तथा विधि, उत्तीर्ण हुने मापदण्ड र प्रमाणपत्र, र सीप तथा योग्यता परीक्षणको व्यवस्था उल्लेख गर्ने)

१८. ग्रेड निर्धारण: (प्रशिक्षार्थीको सिकाइ उपलब्धिलाई स्तरीकृत ग्रेडमा उल्लेख गर्नेगरी उपलब्धि स्तरको व्याख्या गर्ने)

१९. प्रमाणपत्र प्रदान: (तालिमका सहभागीले पाउने प्रमाणपत्र सम्बन्धी व्यवस्था उल्लेख गर्ने)

२०. सिप परिक्षण सम्बन्धी व्यवस्था: (तालिम प्राप्त गरेकाहरूको सिप परिक्षण सम्बन्धी व्यवस्था उल्लेख गर्ने)

२१. प्रशिक्षण सम्बन्धी सुझाव: (पाठ्यक्रम अनुसारको सिप सिकाउनका लगि प्रशिक्षण र मूल्याङ्कन सम्बन्धी बुँदागत सुझाव उल्लेख गर्ने)

२२. पाठ्यक्रम कार्यान्वयनको लागि सुझाव:(पाठ्यक्रमको प्रभावकारी कार्यान्यनका लागि आवश?यक सुझाबहरू उल्लेख गर्ने)

२३. दिगोपन तथा हरित अभ्यास: (तालिम कार्यक्रममा वातावरणीय रूपमा दिगो विधि, लैङ्गिक समानता र सामाजिक समावेशीकरणलाई प्राथमिकता दिने विषय उल्लेख गर्ने)

२४. दक्षताका सूचीहरू: (पाठ्यक्रमले निर्दिष्ट गरेका दक्षता (कम्पिटेन्सी) का सूचीहरू उल्लेख गर्ने)

२५. मोड्युल क्रम: (पाठ्यक्रममा उल्लेख भएका एकाइ तथा मोड्युलहरूको सिकाइका क्रम उल्लेख गर्ने)

२६. पाठ्यक्रम संरचना

एकाइ	एकाइ (मोड्युल) शीर्षक	समय अवधि घण्टा			क्रेडिट	पूर्णाङ्क
		सैद्धान्तिक	प्रयोगात्मक	जम्मा		
१.						
२.						
३.						
४.						
५.						
	जम्मा					

(नोटः पाठ्यक्रम संरचना तयार गर्दा पेशा परिचय, पेशागत स्वास्थ्य र सुरक्षा, उद्यमशीलता विकास, संचार सीप जस्ता आधारभुत विषयको एकाइ (मोड्युल) तथा पेशा सम्बन्धी मुख्य सीप, ज्ञान तथा दक्षताहरूलाई विभिन्न मोड्युलहरूमा राखेर त्यसको समय अवधि उल्लेख गर्ने)

२७. एकाइगत (मोड्युल) कार्य विश्लेषण: (पाठ्यक्रमसँग सम्बन्धित प्रत्येक एकाइको प्रयोगात्मक अभ्यासका सीप तथा दक्षताको कार्य विश्लेषण गर्ने)

कार्य विश्लेषणको नमूना

एकाइ/मोड्युल (Unit/Module): ……..

एकाइ विवरण (Unit Description): ....
एकाइको सिकाइ उपलब्धी (Unit Outcome): ....
कार्यहरू (Tasks): १. …… २. …….. ३. …… ४. ..... ५. ..... ६. .....
समय (Duration): सैद्धान्तक .. घण्टा + व्यावहारिक … घण्टा = …. घण्टा

कार्य विश्लेषणको नमूना

एकाइ (Unit): …….. निर्दिष्ट कार्य १: ……		
समय (Duration): सैद्धान्तिक …. घण्टा + व्यावहारिक …… घण्टा = …… घण्टा		
कार्य चरणहरु (Performance Steps)	अन्तिम कार्य सम्पादनको उद्देश्य (Terminal Performance Objective)	सम्बन्धित प्राविधिक ज्ञान (Related Technical Knowledge)
१. ……. २. …… ३. …….. ४. …… ५. ……..	दिइएको अवस्था (Condition (Given): .... निर्दिष्ट कार्य (Task): ..... मापदण्ड (Standard):	• ..... • ..... • ..... • ..... • .....

आवश्यक औजार तथा उपकरण (Required tools/equipment):

……..

सुरक्षा सावधानी (Safety Precaution):

……

……

(नोटः हरेक एकाइ (मोड्युल) अन्तर्गत प्रत्येक निर्दिष्ट कार्यहरूको अलग अलग कार्य विश्लेषण गर्ने, जसमा अनुमानित समय (सैद्दान्तिक, प्रयोगात्मक र जम्मा घण्टा), उक्त कार्य सम्पादन गर्न अपनाउनुपर्ने चरणहरू, अन्तिम कार्य सम्पादनका लागि दिइएको अवस्था, निर्दिष्ट कार्य र कार्य सम्पादन भएको सुनिश्चित गर्ने मापदण्ड र आवश्यक प्राविधिक ज्ञानको विवरण, कार्य सम्पादन गर्न आवश्यक पर्ने औजार तथा उपकरणको सूची र सुरक्षा सावधानीका उपायहरू उल्लेख गर्ने)

२८. **औजार, उपकरण तथा सामग्रीहरूको सूची** (पाठ्यक्रमले निर्दिष्ट गरेका सीपहरू प्रदर्शन गर्न आवश्यक पर्ने, मेशीन, औजार, उपकरण तथा सामग्रीहरूको सूची तयार गर्ने)

२९. पूर्वाधार तथा सुविधाहरू (पाठ्यक्रम अनुसारको तालिम सञ्चालनका लागि न्यूनतम पूर्वाधार, कक्षाकोठा, वर्कसप, ल्याब, फर्निचर, तथा अन्य आवश्यक सुविधा व्यवस्था गर्ने)

३०. पाठ्यक्रम विकासमा सहभागी विज्ञहरूको सूची

Annex 4: Prototype Curriculum for Technical Education Programs

Curriculum for …… Pre-diploma/Diploma/Advanced Diploma Levels

1. **Introduction**
    - Brief description of the importance and relevance of the program by addressing workforce demands and societal needs
2. **Title of the Program**
    - Write curriculum title or name of the program, e.g., Diploma in …….
3. **Aim**
    - Write the boarder aim of the program.
4. **Curriculum Objectives**
    - Outline the specific objectives of the curriculum.
5. **Program Duration**
    - Write the program duration in year or months also highlight the yearly or semester system. For example, the program spans three academic years, divided into six semesters, each comprising 17 weeks, including evaluation periods.
6. **Group Size**
    - Maximum number of students can be enrolled to the program.
7. **Entry Criteria**
    - Specify the minimum academic and other requirements;
    - Academic qualifications (e.g., [SLC/SEE] or equivalent).
    - Entrance examination requirements.
8. **Pattern of Attendance**
    - Minimum attendance to appear in final examination. (For example, 90% in each subject)
9. **Teacher/Instructor and Student Ratio**
    - Specificy the teacher/instructor and ratio for theory and paractical class.
10. **Instructors/Trainers Qualification**
    - Minimum Academic Qualification
    - Experience
    - Training Requirement
11. **Medium of Instruction**
    - Write the medium of language to be used in instruction. For example; The medium of instruction will be in English or Nepali or both.
12. **Instructional Media and Materials**
    - Printed materials: Textbooks, manuals, handouts, etc.
    - Projected materials: Multimedia, slides, etc.
    - Digital tools: Computer-based training, interactive software, etc.
13. **Teaching and learning Methodologies**
    - Lectures, group discussions, demonstrations, etc.
    - Practical sessions, simulations, fieldwork, etc.
    - Independent learning exercises, such as projects and reports
14. **Mode of Education**
    - Write the approach of delivery. for example,There will be both inductive and deductive modes of education.
15. **Examination and Marking Scheme**
    - Write the provision of examination for internal Assessment and external assessment for theory and practical with their percentage for evaluation.
16. **Provision for retake exams**
    - Write the provision for taking back papers examination.
17. **Disciplinary and ethical requirements**
    - Provide the expected conduct of students and the consequences of misconduct.

18. Grading System

- Provide the overall achievement of each student will be measured by the final aggregate percentage of all final semester examinations and graded in details

19. Certificate awarded

- Describe the certification awarded upon successful completion.

20. Special Features

- Provide the special features of the curriculum for implementation

21. Electives or Specialization

- Outline any elective subjects or areas of specialization.
- Provision of Block release
- Non-credited subject(s)

22. Project Work and Fieldwork

Provide detailed information about requirements for practical training or capstone projects.

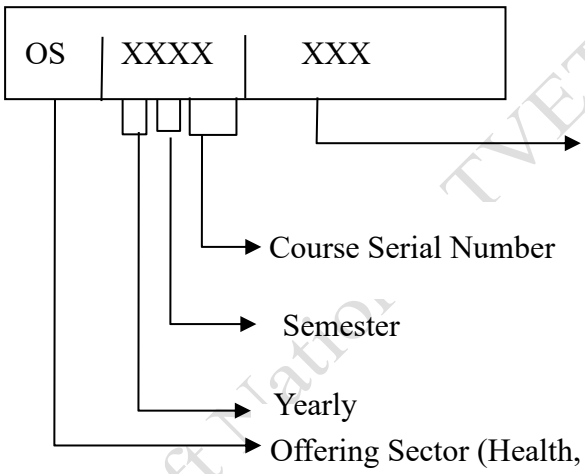
23. Career Path

- Highlight potential career paths for graduates, including:
- Positions in government and private sectors.
- Opportunities for self-employment.
- Eligibility for further education and professional certifications.

24. Subject Code

- Provide the rules for coding the subjects

The subject code follows a systematic format to easily identify the course details. The format and example are provided below:



Offering Departments:
PS: Plant Science,
CE: Civil Engineering,
EE: Electrical Engineering
EX: Electronic Engineering
AR: Architecture Engineering
ME: Mechanical Engineering
GM: General Medicine, etc

Yearly system:

AG 101 PS, AG 102 PS, AG 103 PS, AG 104 PS……

AG = Agriculture sector, 1= 1st year and 01, 02, 03= 1st, 2nd, 3rd, …..Course serial in that year

Semester System:

EG 2101 GE, EG 2102 GE, EG 2103 GE, EG 2104 GE, EG 2105 GE……

EG= Engineering Sector, 2= 2nd year, 1 = 1st semester of 2nd year that is 3rd semester and 01, 02, 03, 04…= 1st, 2nd, 3rd, 4th…..Course serial in that year/Semester

25. **Course Structure**

Course Structure of ……..

Year/Semester:

Teaching Schedule			Mode						DISTRIBUTION OF MARKS						Total marks (Grade)	Remark
SN	Course Code	Course Title	L	T	P	Lab	Weekly Hours	Credit	Theory			Practical				
									*Assmt Marks	Final Marks	Time Hours	*Assmt Marks	Final Marks	Time Hours		
1																*Continuous assessment
2																
3																
4																
5																
6																
7																
		Total														

(Note: Provide a summary table outlining each semester's subjects, codes, credits, hours, and assessment details.)

26. Evaluation Scheme

- Provide a table of specification or rubric or criteria for evaluation**.**

27. Subject Details

For each subject, include the following:

- **Course Title and Code**
- Year and Semester
- Total Hours (Lecture-Tutorial-Practical-Lab)
- Course Description: Brief overview of the subject (Scope, importance and impact).
- Course Objectives: List the learning outcomes and start with verb/action verb
- Course Contents: Break down theoretical topics into units with approximate hours.
- List of practical to be performed on that subject.
- Evaluation Scheme: Define weightage for theory and practical assessments.
- References: Provide a list of the textbooks or other references for the course. The references must be written in the American Psychological Association (APA) style.

28. Experts involved in curriculum Development/revision

- List all experts' names, designations, and organizations in a table.

Annex 5: Basis for developing course structure

Components	Guidelines
Evaluation Scheme:	• Internal Assessment: 60% • Final Examination: 40%
Pass Marks for Theory and Practical:	• Theory: 40% • Practical: 60 %

Mark System for Theory Exam:	• For up to 2 Hours: Total Marks = 50 • Internal Assessment: 10, Final Exam: 40 • For 3 to 4 Hours: Total Marks = 100 • Internal Assessment: 20, Final Exam: 80.
Weightage of Practical Credit Hours and Exam Duration:	**Marks for Practical:** • For "2/2": Total marks = 25 • For 2 hours weekly, Practical: Total marks = 50 **Class Hours and Assessment:** • **1 Hour:** Total Marks = 25 Internal Assessment: 25; no final exam. • **2 Hours:** Total Marks = 50 Internal Assessment: 30, Final: 20. • **3 or 4 Hours:** Total Marks = 100 Internal Assessment: 60, Final: 40. • **5 or 6 Hours:** Total Marks = 150 Internal Assessment: 100, Final: 50. • **7 or 8 Hours:** Total Marks = 200 Internal Assessment: 120, Final: 80. • **9 or 10 Hours:** Total Marks = 250 Internal Assessment: 150, Final: 100. • **11 or12 Hours:** Total Marks = 300 Internal Assessment: 200, Final: 100. **Exam Duration for Final Practical:** • More than 30 marks: 3 hours • More than 30 and less than 50 marks: 4 hours • More than 50 and less than 70 marks: 5 hours • More than 70 and less than 100 marks: 6 hours • More than 100 marks: 8 hours
Final exam duration for theory:	• If total marks is less than 50: 1.5 hours • If total marks is greater than 50: 3 hours
Grading System	**Marks Range** / **Grade** / **Grade Points** 90 and above / A+ / 4.0 80 to below 90 / A / 3.7 70 to below 80 / B+ / 3.3 60 to below 70 / B / 3.0 50 to below 60 / C+ / 2.7 40 to below 50 / C / 2.3 Below 40 / F / Non Gragded

Annex 6: Table of Specifications for Assessment

a) Sample ToS for Theoretical Assessment

Unit No.	Unit	Weekly Hours	Easy (25-30)%			Moderate (60-65)%			Difficult (5-10)%			No. of Questions			Marks			Total Marks
			Remember/ Knowledge			Understand/ Apply			Higher Ability									
			VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	

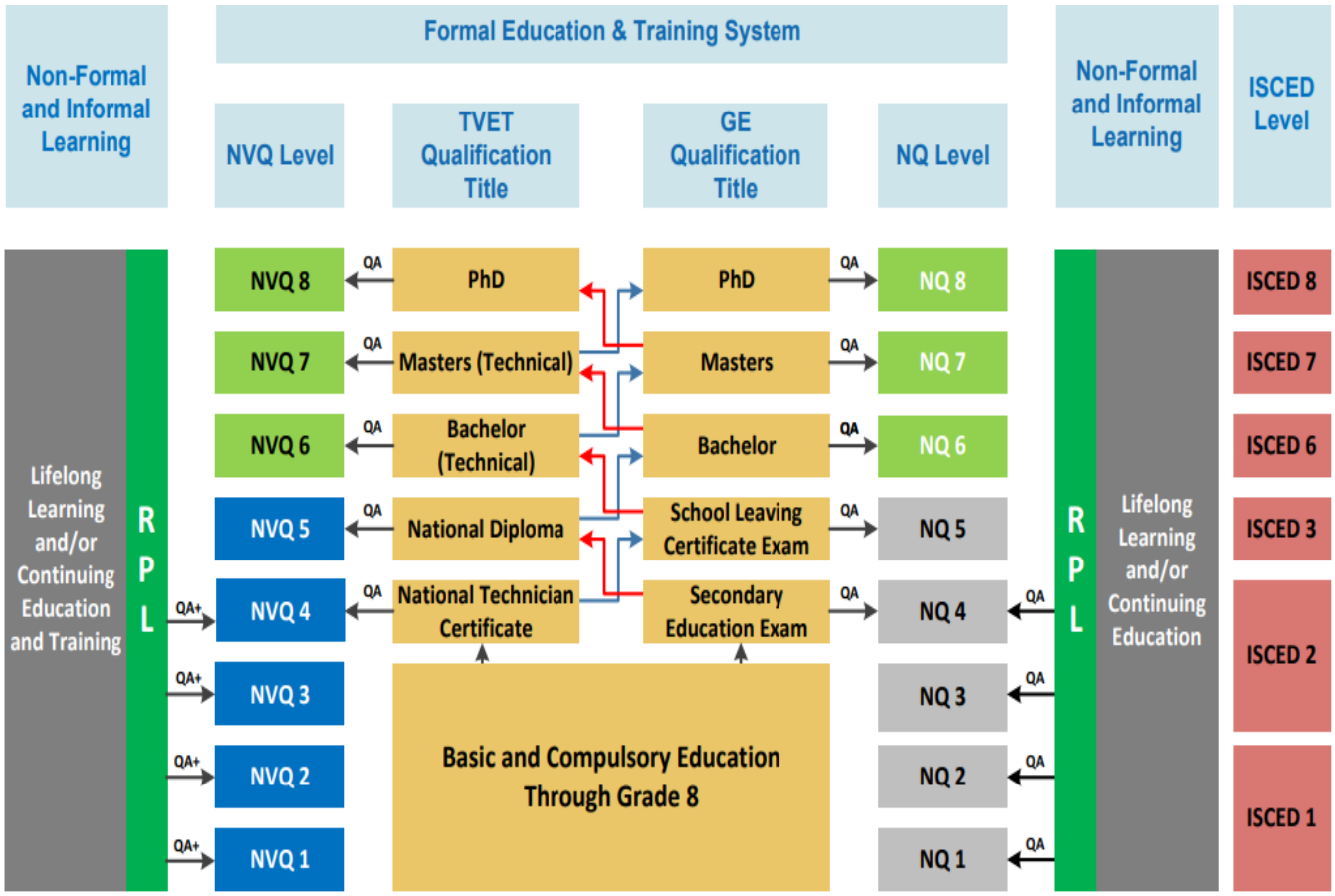
1																		
2																		
3																		
4																		
	Total																	

Note: VSQ = Very Short Question; SQ = Short Question; LQ = Long Question

b) Sample ToS for Practical Assessment

S.N.	Tasks/Competencies	Hrs.	Competency demonstrated			Total Marks	Remarks
			Skills performed (80%)	Related knowledge (10%)	Attitude (10%)		
1.							
2.							
3.							
4.							
Total							

Annex 7: National Qualification Framework of Nepal



Annex 8: Formation of NTCF Drafting Committees

NTCF Development Committee		
Mr. Binod Badal	Director	Curriculum Development and Equivalency Division, CTEVT
Mr. Pramod Bhakta Acharya	Director	Quality TVET for Youth (QualiTY) Project, CTEVT
Mr. Deepak Prasad Poudel	TVET expert	Freelancer, Former Director, CTEVT
Dr. Prakash Kumar Paudel	TVET Researcher	Kathmandu University School of Education, Lalitpur
Mr. Keshab Ghimire	Deputy Director	National Skill Testing Board (NSTB)
Eka Raj Adhikari	Deputy Director	Research and Information Division, CTEVT
Er. Dipesh Poudel	Training Manager/ Member	Sipradi Trading P. Ltd, Naikap Sector Skills Committee, Automobile
Mr. Hari Poudel	Curriculum Officer	Curriculum Development and Equivalence Division, CTEVT
First Drafting Committee		
Mr. Mister Kant Mainali	Director/ Project Director	Training and Development Division, CTEVT PIU, ENSSURE Project, CTEVT
Dr. Anoj Bhattrai	Director	Curriculum Development and Equivalence Division, CTEVT
Prof. Prakash Man Shrestha	Former Dean	School of Education, TU, Kritipur
Mr. Binod Prasad Pant	Assistant Professor	Department of STEM Education, School of Education, KU
Mr. Prem Kharel	Director	Curriculum Development Centre, Sanothimi, Bhaktapur
Mr. Hari Poudel	Curriculum Officer	Curriculum Development and Equivalence Division, CTEVT
Dr. Kusmakar Bhatta	Training Coordinator	PSU, QualiTY Project, CTEVT
Mr. Chuman Babu Shrestha	Process Manager	Nepal Vocational Qualification System (NVQS) Project, CTEVT
Mr. Bijesh Basnet	Technical Officer	PIU, QualiTY Project, CTEVT

Annex 9: Participants of Consultative Workshop on NTCF

S.N.	Name	Designation	Organization
1	Dipak Kafle	Secretary	Ministry of Education, Science, and Technology
2	Baikuntha Prasad Aryal	Joint- secretary	Ministry of Education, Science, and Technology
3	Rajendra Pyakurel	Executive Director	National Association of Rural Municipalities in Nepal
4	Dr. Ramhari Lamichhane	TVET expert	Former MS, CTEVT and Director General of CPSC, Manila
5	Suresh Kumar Joshi	Under Secretary	Ministry of Education, Science and Technology
6	Er. Binod Dhakal	Chairperson	Sector Skill Committee, ICT Sector
7	Dr. Bajra Kishor Sah	President	Veterinary Council of Nepal
8	Basudev Osti	Director	Curriculum Development Centre, Sanothimi, Bhaktapur
9	Rama Devi Pahari	Board Member	Nepal Nursing Council
10	Dhankumari Bhandari	Education officer	Kathmandu Metropolitan City
11	Duraga Prasad Baral	Faculty	Kathmandu University
12	Prof. Dr. Prakash Man Shrestha	Member	National Examination Board
13	Yubaraj Shrestha	Executive Member	Hotel Association Nepal
14	Er. Dipesh Kumar Bardaith	Engineer	Nepal Engineering Council
15	Rajendra Prasad Adhikari	Chairperson	Training Institute for Technical Instruction (TITI) Management Board
16	Dr. Sunita Lamal	Medical Superintendent	Ministry of Health and Population
17	Subhekshya Sapkota	Mechanical Engineer	Ministry of Industry, Commerce, and Supply
18	Birendra Raj Pandey	Senior Vice-president	Confederation of Nepalese Industry (CNI)
19	Er. Kishor Shakshya	President	Sector Skill Committee- Construction sector
20	Dr. Lekhnath Poudel	Former Executive Director	CDC, Ministry of Education, Science & Technology
21	Pramila Kharel	Section Officer	Ministry of Youth and Sports
22	Govindra Prasad Aryl	Under-secretary	Ministry of Education, Science and Technology
23	Lalkumar Shrestha	Under-secretary	Ministry of Agriculture and Livestock Development
24	Khemraj Joshi	Section Officer	Ministry of Information and Communication
25	Krishna Chandra Pokharel	Under-Secretary	Ministry of Education, Science and Technology
26	Narayan Prasad Niraula	Section Officer	Vocational and Skill Development Training Centre
27	Sunita Subedi	Advocacy & Technical Support Manager	Nepal Municipalities Association
28	SIta Poudel	Technical Coordinator	QualiTY Project
29	Parasuram Tiwari	Under-Secretary	Ministry of Education, Science and Technology
30	Udhab Poudel	Section Officer	Ministry of Finance

31	Saalikgram Bhandari	Sinior Divisional Engineer	Ministry of Energy, Water Resource and Irrigation
32	Rama Nepal	Section Officer	Teacher Service Commission
33	Dharma Prasad Tiwari	Section Officer	Centre for Education and Human Resource Development
34	Tulasi Prasad Ghimire	Under-secretary	Ministry of Education, Science and Technology
35	Bhim Kumar Dahal	Associate Professor	Institute of Engineering, Pulchok Campus
36	Yam Krishna Poudel	Engineer	Nepal Engineers Association
37	Raj Kumar Chaulagain	Associate Professor	IOE, Thapathali Campus, Thapali
38	Binda Ghimire	Assistant Professor	Bir Hospital Nursing Campus
39	Bindiya Karki	General Secretary	Diploma engineers Association Nepal
40	Sumita Pathak	Associate Professor	Nepal Nursing Council
41	Ujwal Datel	MPT	Orthoplast Rehab Centre
42	Suryakiran Shrestha	Expert	Freelancer (Hospitality)
43	Dr. Rajendra Devkota	Expert	Freelancer (Agriculture)
44	Prakash Kumal	Instructor	Manamohan Memorial Polytechnic Institute
45	Raja Ram Mahat	Senior Instructor	NATHM
46	Puspa Raj Poudel	Assistant Dean	TU, IAAS
47	Bipin Bista	Instructor	Nepal Banepa Polytechnica Institute
48	Sanjib Kumar Pandey	Register	Nepal Pharmacy Council