
# DOCUMENT FOR CREDIT FRAMEWORK

## SKILLS AND EDUCATION UNDER NSQF

Skill Assessment Matrix for Vocational Advancement of Youth (SAMVAY)

11 November, 2014

Department of Higher Education
Ministry of Human Resource Development
Government of India

# Index


| S.No | Particulars | Page Number |
|---|---|---|
| | Message HRM | |
| | Forward | |
| | Credit Framework for Competency based Skills and Vocational Education under National Skills Qualification Framework (NSQF) | |
| 1. | **Credits for Practical Skills to Ensure Mobility** | |
| 2. | **Key concepts** | |
| 3. | **Credits** | |
| 4. | **Evolving Credit Framework** | |
| 5. | **Credit Framework:** | |
| 6. | Ingredients of Credit Framework with Credit Accumulation and Transfer (CATS) | |
| 7. | **An Example for Performance Criteria: Carry out soldering techniques** | |
| 8. | Credit - A Policy Measure for Lifelong Learning | |
| 9. | Components of Credit Accumulation and Transfer System for Educational Institutions | |
| 10. | **Credits: Estimations for Educational Institutions** | |
| 11. | **Salient Characteristics of Credit Framework:** | |
| 12. | **Credit Calculation: In a Semester Pattern of working** | |
| 13. | **Credit Calculation: In a Yearly Pattern of working** | |
| 14. | **Quality Assurance – Credit in National Skills Qualification Framework** | |
| 15. | Competency Module | |
| 16. | **Learning towards an academic award** | |
| 17. | **Modular structures** | |
| 18. | **Conclusion** | |
| 19. | **Annexure - I** | |
| 20. | **Annexure - II** | |

स्मृति ज़ूबिन इरानी
Smriti Zubin Irani

मंत्री
मानव संसाधन विकास
भारत सरकार
MINISTER
HUMAN RESOURCE DEVELOPMENT
GOVERNMENT OF INDIA

# Message

I am very pleased to learn that the All India Council for Technical Education (AICTE) is launching the Credit Framework for Competency based Skills and Vocational Education under the National Skills Qualification Framework. For India to reap the demographic dividend, it is very important to develop 'employable skills' among our youth. With over 15 Crore youth in the 18-23 age group, India has a daunting challenge to meet the human development and learning needs of this large group. By recognizing prior learning and by linking mobility in mastery of skills with pursuit of knowledge through the formal education stream, the credit framework will go a long way in meeting a very important felt need. Our Hon'ble Prime Minister has been highlighting the need for seeking equivalence in the pursuit of knowledge and skills and for providing opportunities to pursue Diploma to Degree and post-Degree programmes in vocational education. I am sure the credit framework will facilitate such transitions on a large scale.

The challenge of education and skills has to be met jointly by the Central and State Governments and together we have to explore the possibilities of promoting employable skills by mainstreaming vocational education into our formal system of education. We would like States to deliberate on this Credit Framework and adopt and adapt suitably for a consistent, reliable and transparent system of skill assessment and Vocational Training Provider certification. Maintenance of standards is a big challenge as we expand the formal systems of certification. By involving the industry representatives in the Sector Skill Councils that determine the National Occupational Standards, there is a strong possibility of industry fully utilizing the services of our skilled youth.

It gives me even greater joy that the Credit Framework is being launched on the National Education Day, a day when we commemorate the memory of our dedicated and distinguished educationist, freedom fighter and statesman, Maulana Abul Kalam Azad.

**(Smriti Zubin Irani)**

Office : Room No. 301 'C' Wing, Shastri Bhawan, New Delhi - 110 115
Phone : 91-11-23782387, 23782698, Fax No. : 91-11-23382365, 23782028

## FOREWORD

The Ministry of Human Resource Development (MHRD) entrusted the task of developing a credit framework for skills and education under the National Skills Qualification Framework (NSQF) to the All India Council for Technical Education (AICTE). Through a process of intensive consultation with all experts and stakeholders, we have tried to put together the Skills Assessment Matrix for Vocational Advancement of Youth (SAMVAY). This credit framework, aimed at promoting lateral and vertical mobility, is an effort to integrate skill and vocational development with mainstream general education. It is in the spirit of the Gandhian education priority for Samvay, where the thrust was on integrating mental and physical development by incorporating learning by doing, learning by observation and experiential learning. It is therefore, in the fitness of things, that it is called ' SAMVAY'.

The credit framework, using the NSQF and National Occupational Standards, is an exercise in recognizing skills and education as part of an integrated learning system. It is an effort to bridge the gap between certificate and Diploma level and between Diploma and Degree levels by allowing for mobility from one to the other. It also provides an opportunity to graduates of vocational education to further pursue post graduate learning. It addresses the challenges of mobility and of quality skills. The Credit framework requires a sound system of certification of vocational skill providers and assessment of skills acquired by students. It also allows a simultaneous pursuit of theory. The strength of this framework is the seamless integration of pursuit of academic knowledge and practical vocational skills. Efforts like these that will improve the employability of our certificate, Diploma and Degree holders and provide a framework for lifelong learning through flexible credit transfers and Community College like institutions, within the framework of higher education institutions.

We take this opportunity to sincerely thank all those who have contributed to the development of this framework. We look forward to an intensive dialogue with States and institutions in rolling out the credit framework to meet the learning needs of all. We hope our effort facilitates the process of making an even more inclusive India that respects vocational and general education equally and that takes up the challenge of reaping the 'demographic dividend'.

Date 11/11/2014

# Credit Framework for Competency based Skills and Vocational Education under National Skills Qualification Framework (NSQF)

1. **Credits for Practical Skills to Ensure Mobility**

A Credit Accumulation and transfer system is necessary for realizing the horizontal and vertical mobility envisaged in the National Skills Qualification Framework which is determining the vocational/skills education programmes and courses of the Ministry of Human Resource Development.

Over 65% population of India is below 35 years. While major world countries move towards aging, India is growing younger. This may turn into dividend if youths become skilled. Vocational Education had been in vogue, but it did not get honorable acceptance by Indian society in comparison with academic programs. Efforts were made to introduce compulsory and optional vocational subjects at school level. But their acceptance for mobility into higher education was lacking. In order to mainstream skills, GOI launched an integrated qualification framework – NSQF, National Skills Qualification Framework, with varying proportion of vocational skill hours to academic class and lab hours allowing horizontal and vertical mobility.

The framework allows multiple pathways between Vocational education - skills, Education and job markets. It does not seek to replace the current systems of education nor does it redefine the current education paradigm. It seeks to establish a credit framework that allows vertical and lateral mobility within vocational education system, skills development and the current education systems.

The credit framework defines the rules for credit allotment and follows the NSQF regulatory framework and does not seek to redefine or replace the NSQF.

The executors of the credit framework shall be the certifying bodies defined at different levels as defined in the NSQF.

The credit framework clearly states the credit assessment requirements for skills. The credits for education are indicative and would be subject to adoption by the concerned certifying bodies with or without modifications.

2. **Key concepts:**

a **"Competence"** means the proven ability to use acquired knowledge, skills and personal and social abilities, in discharge of responsibility roles. It is the ability to do a job well

b **"Credit"** is recognition that a learner has successfully completed a prior course of learning, corresponding to a qualification at a given level.

c **"Knowledge"** means the outcome of the assimilation of information through learning Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. Knowledge is described as theoretical and / or factual.

d **"Learner"** refers to an individual undergoing skill development training, whether in a formal or informal setting.

e **"Learning Outcomes"** represent what a learner knows, understands and is able to do on completion of a learning process, and which would be expressed in terms of knowledge, skills and competence;

f **"NSQF"** stands for National Skills Qualification Framework as notified by the National Skill Development Agency (NSDA) vide Notification date 27th December, 2013.

g **"Qualification"** means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.

h **"NSQC"** stands for National Skills Qualifications Committee set up in accordance with NSQF by NSDA.

i **"Recognition of Prior Learning" or "RPL"** is the process of recognising previous learning, often experiential, towards gaining a qualification

j **"Sector"** means a grouping of professional activities on the basis of their main economic function, product, service or technology

k **"Skills"** means the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments);

l **"Trainer: Skill Knowledge Provider (SKP)"** means someone who trains, instructs, teaches or otherwise enables the learner (s) to acquire the appropriate knowledge and skills.

m **"School / College / Polytechnic"** refer to any Institution providing Education and facilitates skills to learners

## 3. Credits

"Credit" is recognition that a learner has successfully completed a prior course of learning, corresponding to a qualification at a given level. For each such prior qualification, the student would have put in a volume of institutional or workplace learning, and the more complex a qualification, the greater the volume of learning that would have gone into it. The credit points give learners, employers and institutions a means of describing and comparing the learning outcomes achieved. Based on this, the additional learning outcomes to acquire a qualification at a higher NSQF level can be determined. Credits quantify learning outcomes that are subject to valid, reliable methods of assessment. The number of credits may be worked out on the basis of the number of notional learning hours that an 'average' learner at a specified NSQF level might expect to take to achieve the learning outcomes, including the assessment. However, this is merely a guide and no credits are added or taken away if more or less time is taken to achieve the outcomes. No credits are 'earned' by a learner if the learning outcomes are not achieved or, in the case of RPL, demonstrated.

**Credits can be used**

- to assist learners to transfer between programs. This can happen only when awarding bodies determine how much credit can be transferred into which of their programs. This decision will depend upon the nature / content of the learning for which the credit has been given and the requirements of the program into which transfer is being sought. This will also facilitate multiple entry and exit pathways at each level (or within a level) with the bundle of credits earned clearly certified by assessment and certification bodies which have been authorized to do so.
- Wherever notional learning time is used, it should include all learning activities required for the achievement of the learning outcomes for a particular level.
- For formal learning, includes classes, training sessions, coaching, seminars and tutorials practice and learning on the job - gaining, applying and refining skills in the workplace
- When involved in informal learning, has community-based workshops, youth groups, playgroups
- When doing practical work in laboratories or other locations
- For expected private study, revision and remedial work
- For work-based activities which lead to assessment
- For undertaking all forms of assessment

Notional learning time may also be linked to the International Standard Classification of Occupations (ISCO 08), which includes reference to a nominal duration of learning and workplace training for each occupation.

The need to undertake any or all of these will be considered when credit is being allocated to a qualification or learning program. The mix of learning activities will vary from program to program — in school, the learning might be mostly class-based; in higher education much of the learning time could be spent outside of formal lectures etc. In other situations, much of the learning will be work-based.

In determining the notional learning time involved in achieving outcomes of learning (for eg. in a module / unit, program, or any piece of assessed learning), no rigid allocation of time is implied in this system, particularly as flexible and distance learning develops.

4. **Evolving Credit Framework**

The NSQF has important components such as multiple entry and exit between vocational, general, technical and job specific education, horizontal and vertical mobility, outcomes based learning, industry engagement, National Occupational Standards, Competency-based curriculum, Credit Accumulation and Transfer System, Recognition of Prior Learning, Quality assurance and sharing of resources. Assessment and certification norms will be developed by Regulatory bodies, SSCs / industry which may be approved by NSQC.

5. **Credit Framework:**

Will be a pre-requisite and be developed to ensure mobility of learners.

Targets for skilling set are 500 Mn by 2022, out of which 50 Mn by MHRD.

Challenge lies in attaining targets in both quantity as well as quality.

**6. Ingredients of Credit Framework with Credit Accumulation and Transfer (CATS)**

A *unit of assessment* is a set of skill based learning outcomes, which can be of any size.

*Learning outcomes* are defined as what a learner is expected to know, understand at every level of skill sets of the NSQF for that sector. and do A*ssessment criteria* are standards for achievement outcomes. *Level* is an indicator of the relative demand, complexity and depth of study and of learner autonomy in handling the skill sets *Credit value* is a numerical value defined to form a unit size.

Credit Accumulation and Transfer System (CATS) uses a criteria of intellectual skills and attributes, skill sets, process and accountability. The level descriptors (already notified under NSQF) should be seen as a developmental continuum in which preceding levels are necessarily subsumed within those which follow.

These are required to understand a credible credit framework that is based on competency based skills

7. **An Example for Performance Criteria: Carry out soldering techniques**

*"Source: http://training.gov.au/Training/Details/AUR23808B"*

**a) Unit Descriptor**

This unit identifies the competence required to carry out a variety of soft soldering procedures including the preparation of materials and equipment.

Credit allotment is based on the work requirement, complexity, performance criteria and competencies required.

| **Element** | **Performance Criteria** |
|---|---|
| Plan and prepare for soft soldering | Work requirements are identified from work orders and instructions.<br>Information required for the work is accessed from appropriate sources to enable soft soldering to be performed in accordance with relevant legislative/regulatory, site and equipment manufacturer's requirements<br>Approved methods and equipment, according to type of work required and materials to be soft soldered are confirmed.<br>Relevant occupational health and safety policies and procedures are observed throughout the soldering operations.<br>Work area is prepared in accordance with work requirements and site procedures.<br>Co-ordination activities with others involved in the operations throughout this work cycle are resolved through timely and effective communication |

| | |
|---|---|
| Carry out soldering techniques | Materials to be soft soldered are prepared and aligned in accordance with the work plan and specifications.<br><br>Equipment is connected, checked and set up in accordance with manufacturer's and site procedures.<br><br>Test runs are undertaken in accordance with site procedures.<br><br>Soft soldering procedures are completed without causing damage to any component or system.<br><br>Joins are cleaned using appropriate tools and techniques in accordance with the work plan.<br><br>Joins are inspected visually and defects identified and repaired using appropriate techniques and in accordance with work plan |
| Complete soft soldering procedures | Work is completed and appropriate personnel notified in accordance with site requirements.<br><br>Workplace tools, equipment and materials are cleaned and stored in accordance with site procedures.<br><br>Work area is cleared of waste, cleaned and restored in accordance with site procedures.<br><br>Work completion details are completed in accordance with site requirements. |

b **Range of Variables Scope of Soldering**

May include cleaning components, heating and/or soldering types of various thicknesses of material and electronic circuit repairs

c **Resources**

May include all hand tools, soldering equipment, fluxes, different types of soft solder, power tools, gas, electric and flame heated irons and gas fired torches.

d **Sources of Information / Documents**

Manufacturer's specifications, enterprise operating procedures, component manufacturer's specifications, customer requirements and industry / workplace codes of practice

e **Relevant Site Policies and Procedures**

May include hazard policies and procedures, emergency, fire and accident procedures, personal safety procedures, procedures for the use of personal protective clothing and equipment, use of motor vehicles, issue resolution procedures, job procedures, work instructions, quality and environmental procedures.

f **Legislative Requirements**

May include state and territory occupational health and safety legislation and national / state codes of practice

g **Occupational Health and Safety Procedures**

May include safe manual handling and lifting, customers, staff equipment / tools, premises and stock

h **Emergency Procedures**

May include sickness, accidents, fire or store evacuation involving staff or customers

I **Communications**

Communications may be verbal, written, by telephone or by other means.

j **Recording of Information**

Accurate records of all relevant information are to be completed and may be stored manually, electronically or by other means.

k **Evidence Guide Critical Aspects**

It is essential that competence in this unit signifies the ability to transfer the competency to changing circumstances and to respond to unusual circumstances in the critical aspects of:

- communicating effectively with others in associated areas
- identifying and assessing hazardous situations and rectifying, where appropriate, or reporting to the relevant personnel
- applying relevant occupational health and safety policies and procedures

- planning and preparing for soft soldering
- carrying out a variety of soft soldering procedures
- completing soft soldering procedures
- completing essential post activity housekeeping

l **Interdependent Assessment of Units**

This unit may be assessed in conjunction with all common and technical units which form part of the normal job role.

m **Underpinning Knowledge**

- General knowledge of soft soldering theory including types of materials and fluxes for soft soldering applications.
- General knowledge of common automotive terminology and vehicle safety requirements.
- Working knowledge of relevant occupational health and safety regulations / Requirements, equipment, material and personal safety requirements.
- Working knowledge of the types and applications of cleaning agents.
- Working knowledge of types of materials that can be soldered.
- Working knowledge of relevant hazardous substances and toxic fumes / lead poisoning.
- Detailed knowledge of soft soldering techniques and procedures.
- Detailed knowledge of site reporting procedures.

n **Underpinning Skills**

- Plain English literacy and communication skills in relation to dealing with others involved in the work.
- Technical literacy and communication skills sufficient to interpret and apply common industry terminology, and interpret technical information and specifications related to soft soldering.

- Questioning and active listening skills, for example when obtaining information of safe working practices and soft soldering processes.
- Research and interpretative skills to locate, interpret and apply relevant for soft soldering procedures.
- Manipulative and dexterity skills to physically perform soft soldering.
- Problem solving skills for a limited range of differing procedural circumstances.

o **Consistency in Performance**

It is preferable that credit allotment and assessment reflects a process rather than an event and that it occurs over a period of time to cover the varying circumstances. Evidence of performance may be provided by customers, team leaders / members or other appropriate persons subject to agreed authentication arrangements.

p **Context for Assessment**

Assessment of this unit must be completed on-the-job or in a realistically simulated work environment which reflects a range of soft soldering applications.

q **Resource Implications**

- The following are required:
- a workplace or simulated workplace
- realistic situations requiring soft soldering
- site or equivalent instructions in soft soldering
- appropriate materials, tools and equipment
- hazardous substances information
- a qualified workplace assessor.

Herein we notice that there are 7 competencies to master for getting certificate for the unit on Aftermarket Manufacturing. Each of these competencies may require certain amount of efforts. At each level there may be N number of Units, and under $i^{th}$ unit, there may be some competency modules.jth module in $N_i$ unit may be termed as $N_{ij}$ that may require k notional hours of efforts to attain the competency.

The above is subsequently translated to credits.

## 8. Credit - A Policy Measure for Lifelong Learning

Until recently, traditional credit accumulation and transfer schemes served a limited purpose. However, in response to the needs of the learning society, new credit systems are developing, representing a broader vision of the application of credit. Within an increasingly diversified learning environment, credit can provide a means of linking disparate learning gained in a range of contexts and of integrating different systems. A credit system recognises learning wherever it occurs and facilitates progression, transfer between institutions and articulation between qualification pathways. It can provide the underpinning for the National Skills Qualifications Framework.

Credit can be a source of honour or pride to those receiving it as an acknowledgement of merit. It also involves an element of belief and trust and its value is dependent on the good reputation of those awarding it. Credits are the currency of a credit scheme or system, providing a common unit of exchange which can be used to ascribe value to units, modules or subjects which may vary in size and complexity.

**Credit framework development should concentrate on promoting credit as a currency, able to relate to all learning, however achieved, and located within any NSQF qualification hierarchy, and, therefore, related to but distinct from any other qualifications framework.**

A **credit** is an award made to learners in recognition of learning achievement

- A **credit scheme** is a formal mechanism for awarding credits in respect of learning achievement.
- A **credit system** is a framework with a set of specifications that is used by a range of institutions and / or awarding bodies when designing and operating credit schemes.
- A **national credit system** is a framework with a set of specifications that is used by all institutions and awarding bodies within a national education, vocational education and skill training system. It is designed to be inclusive of all forms of learning and all types of awards required under the NSQF.
- A **National Skills Qualifications Framework** is a formal mechanism for recognising national awards, within a transparent, coherent and flexible national skills qualifications system. It involves, inter alia, the establishment of a credit system to provide a common basis for describing and comparing awards and for establishing equivalences between them.

***Credit accumulation*** **is the process by which learners accumulate credits towards an award of a particular certifying or awarding body / institution. Credit accumulation practices aim to extend flexibility in provision and extent of student choice.**

Credit transfer is a process whereby qualifications, part-qualifications and learning experiences are given appropriate recognition (or credit). This enables students to progress in their vocational/ skill studies without having to repeat material or prior levels of study, to transfer from one course to another, and to gain further educational/skill experience and qualifications without undue loss of time, thereby contributing to the maximisation of accumulated credits.

## 9. Components of Credit Accumulation and Transfer System for Educational Institutions

A credit system is a framework with a set of specifications that is used by all institutions and certifying/awarding bodies within the national education and skill training system.

The components can be identified as follows:-

- learning outcomes
- assessment criteria
- level of learning
- quantum or size

In the development of a comprehensive national system, a uniform and consistent definition of credit is required that will enable judgments to be made about the value of achievement, irrespective of time, place or mode of learning.

(a) **Learning outcomes** are statements of what a learner is expected to know, understand and do in order to achieve credit (FEU 1992). *Specific learning outcomes* describe in detail the knowledge, skills and attitudes which the learner will be able to demonstrate as a result of that learning experience.

(b) **Assessment is** the process of determining that the learner has achieved the outcomes of the module. Generally, the process of assessment involves the use of techniques appropriate to the type of learning outcomes involved. In practice, the relationship between learning outcomes, assessment and the recording of achievement varies.

(c) **Level of learning** is one of the dimensions evaluated in the process of determining the credit rating of learning achievement each level of the NSQF.

(d) **Quantum of learning:** Credit schemes use different yardsticks for measuring the 'quantum of learning'. A *credit tariff* specifies a quantitative relationship between the amount of credit associated with achievement and some measure of the quantity of learning outcomes.

Increasingly, the concept of *notional learning time* is being adopted for credit systems that involve a separation of certification from program delivery. Within such a credit system the credit tariff, as the agreed unit of account, is used as the basis for assigning credit (and multiple credits) to constituent parts of learning programs, stand-alone modules, and whole awards/certificates.

Using notional learning time as the basis for measuring the quantum of learning, a credit value can also be assigned to all learning, including, for example, in-company training, experiential learning or prior learning. The agreed tariff becomes the basis for assigning a credit value to any modules submitted for recognition.

**10. Credits: Estimations for Educational Institutions**

In India, in higher education, academic year has 180 working days; 28 - 30 weeks of actual class room teaching; five days a week. 12 weeks are for admission and examination; 8 weeks for vacation; 2 weeks for public holidays.

This is distribution of 52 weeks in a year. In a semester pattern, 1 credit point for learning corresponds to 1 hour theory contact time per week or 1 credit point for learning corresponds to 2 hours practical contact time per week over 14 – 15 weeks per semester. This may be split into 70% - 80% class / contact time and 20% - 30% outside the class.

In order to establish equivalence and mobility between school and university higher education programs, we may conservatively consider 25 - 30 credit points per semester which translates approximately 500 Hrs of learning per semester. (This is based on 15 weeks – 6 day week and 6 hrs of working per day resulting in 540 hrs per week taken as about 500 hrs per semester.)

Besides this a student would have about 10 Hrs / week for cultural and extracurricular activities for personality development.

## 11. Salient Characteristics of Credit Framework:

- Each NSQF level results in skill certification by the trainers/institutions and level certification by the School / College / Board / University as the case may be.
- Each level of certification is approximately 1000 Hrs / annum
- Each level of certification is combination of Skill Hrs and Education Hrs.
- The indicative Hrs table is as per Table I
- The Education content at levels I, II, III, IV would be as per the CBSC Content or State School Board as the case may be
- All Vocational Skill Content would be sector specific
- Skills acquired at each higher subsequent level are added on skills on the earlier level skills and are treated as higher order skills on the level of skills acquired at the earlier level.
- Vocational Skill Sectors are grouped under either Science, Arts, or Commerce streams for all educational institutions.
- The Education content at Level V, VI, and VII is modeled on the common content as prevalent in various Universities for Science, Arts, or Commerce streams
- The nomenclature of the B. (Voc) Degree offered will be B Voc – Sector name – Specialisation name eg., B Voc (Agriculture) – (Food Processing)
- The nomenclature of the Diploma (Voc) offered will be Diploma Voc – Sector – Specialisation, eg., Dip (Agriculture) – (Food Processing)
- The nomenclature of the Community Skill Diploma (Voc) offered will be CSD Voc – Sector name – Specialisation name eg., CSD (Agriculture) – (Food Processing)
- The nomenclature of the school level vocational education courses would be as per the vocational education sectors courses defined by School Boards.

**Table I : INDICATIVE CREDIT ALLOCATION IN EDUCATIONAL INSTITUTIONS UNDER NSQF**

| Qualification | Equivalence | | Skill certification Level | Competency based Vocational skill Building (in Hrs) (approximate)* | General learning (in Hrs.) (approximate)* | Total Hrs. |
|---|---|---|---|---|---|---|
| IX std. | IX | IX | 1 | 200 | 800 | 1000 |
| X std. | X | X | 2 | 250 | 750 | 1000 |
| XI std. | Diploma (Vocational) | XI (Vocational) | 3 | 400 | 600 | 1000 |
| XII std. | Diploma (Vocational) | XII (Vocational) | 4 | 450 | 550 | 1000 |
| Year I | Diploma (Vocational) | Degree (Vocational) | 5 | 550 | 450 | 1000 |
| Year II | Advanced Diploma (Vocational) | Degree (Vocational) | 6 | 600 | 400 | 1000 |
| Year III | Advanced Diploma (Vocational) | Degree (Vocational) | 7 | 750 | 250 | 1000 |
| Year I, II (PG) | -- | PG(Vocational) | 8,9 | 1600-1800 | 200-400 | 2000 |

- **(± 50 Hrs flexibility on the suggested number of Hrs)**

**12. Credit Calculation: In a Semester Pattern of working (Calculate over a period of 14-15 weeks)**

- One Hr. Theory for education component in a class room is equivalent to 1 credit
- Two Practical Hrs for education component in a laboratory is equivalent to one credit
- Three Skill Hrs at a trainers workshop / facility at level one is equivalent to 1 credit
- One and half Skill Hr at a trainers workshop / facility at level seven is equivalent to 1 credit – **Fig I**
- One Skill Hr at a trainers workshop / facility at level eight and above is equivalent to 1 credit
- Credits vary between level one and seven in a linear fashion to take care of the higher order of skills: **Fig I**
- At least 14 - 15 weeks study per Semester

**13. Credit Calculation: In a Yearly Pattern of working (Calculate over a period of 28-30 weeks)**

- One Hr. Theory for education component in a class room is equivalent to 2 credits
- One Practical Hrs for education component in a laboratory is equivalent to 1 credit
- Three Skill Hrs at a trainers workshop / facility at level one is equivalent to 2 credits
- One and Half Skill Hrs at a trainers workshop / facility at level seven is equivalent to 2 credits
- One Skill Hr at a trainers workshop / facility at level eight and above is equivalent to 2 credit
- Credits vary between level one and seven in a linear fashion to take care of the higher order of skills: **Fig I**
- About 130 - 135 credits will ensure the award of a Diploma in Vocational education after Certificate level Two
- About 130 - 135 credits will ensure the award of a Degree in Vocational education after Certificate level Four
- About 90 - 100 credits will ensure the award of a Advanced Diploma in Vocational education after Certificate level Five
- At least 28 to 30 weeks study per Year

**14.** Each awarding/certifying bodies shall have to clearly enunciate the number of credits at entry level for each NSQF level that it is implementing so that it is transparently clear for any learner. The same body will also have to follow a method of calculating/granting of credits based on this document and clearly put this upon their website in the public domain.

We may define each competency module having as many numbers of skills as there are skill competency credits assigned. Please refer Illustration at **Annexure-I** for vocational education and skills across different sectors and specialisations.

15. **Quality Assurance – Credit in National Skills Qualification Framework:**

The relationship between quality of awards and quality of credits is important to place the quality assurance of credits within the broader context of quality assurance for a national Skills qualifications framework. A national credit system should underpin a National Skills Qualifications Framework. Thus, it is important to bear in mind some of the requirements for quality awards when designing quality assurance processes for a credit system. The overall purpose of quality assurance processes in relation to awards within the National skills Qualifications Framework is to ensure that key goals are met. These include the following:

- all awards meet national quality criteria
- the specifications of the framework (e.g. level and credit) are applied consistently.
- awards have a clear purpose and a relationship to one another
- the requirements for awards are stated explicitly, based on the nationally agreed standards for that sector, at that level
- awards have credibility with learners, employers, providers, professional bodies
- awards provide opportunities for progression and mobility

The relationship between quality assurance for a national credit scheme and the achievement of key quality goals within an education and training system is clearly an important one.

16. **Learning towards an academic award** may be gained in a number of contexts:

- higher education institution provision ( short course, undergraduate and post graduate)
- higher level vocational qualifications
- awards of professional bodies
- employer in-house education and training provision
- learning from experience
- Learning may be achieved through a range of learning modes including
- full-time or part-time learning
- distance learning
- independent learning

17. **Modular structures** are central to the implementation of a credit system. Credit based modular structures allow for diversity in module shape and size.

The achievement of a **comprehensive approach** is largely dependent on the existence of a policy commitment to the inclusion of the full academic-vocational continuum within a single framework, for both further and higher education.

An effective national credit system should have the features such as comprehensiveness, credibility, consistency, coherence and compatibility.

a **Comprehensive:**

- a single national scheme inclusive of all forms of learning, irrespective of time place or mode of learning
- an open system used by all awarding bodies and providers within a national framework of qualifications
- one that is understood by all learners, employers and providers of education and training.

b **Credible, consistent and coherent:**

- underpinned with quality assurance
- capable of internal and external monitoring
- with a means of detecting and remedying departure from its specifications and conventions.

c **Compatible with:** The objectives of providers and of end-users

- the systems operating in other countries

The need to achieve credibility, consistency and coherence in relation to a national credit scheme provides a focus for quality assurance measures.

**18. In Conclusion:**

It is important that as the National Skills Qualification Framework allows cross mobility of standards and their absorption by the Industry with certain skills gained over a fixed period of time or their seamless integration into higher education / learning there must be enablement to acquire a formal Degree or a Diploma and higher order skills so that they perform higher level jobs in the Industry.

The Credit Accumulation and Transfer Framework should be of assistance to all educational institutions who are either associated directly in building vocational

education or training in skills to facilitate vertical and horizontal mobility within the educational structures but also in assisting learners entering from outside the educational system, by way of the job market, prior knowledge of skills or the skill training sectors whether in Government or Private.

This builds self confidence amongst the prospective students and the society, and provides a way forward where vocational education and skills provides alternate pathways to the current Education System with equal opportunities and respect.

The Credit Framework as brought out by the Ministry of HRD shall be duly aligned with a national credit framework as & when brought out by the National Skills Development Agency in due course.

**List of Appendices:**

| | |
|---|---|
| 1. | **Fig-I** Depicts Equivalent hours Vs Certificate Level |
| 2. | **Fig-II** Depicts the Vocational Credits, General Credits and Total Credits in Graphical Form |
| 3. | **Annexure I** Schema for Agriculture sector and Food Processing specialization |
| 4. | **Annexure-II** Suggested Credit Framework of Skills and Vocational education for Agriculture sector and Food Processing specialization |

**Fig: I: Graph of Equivalent hours Vs Certificate Level**

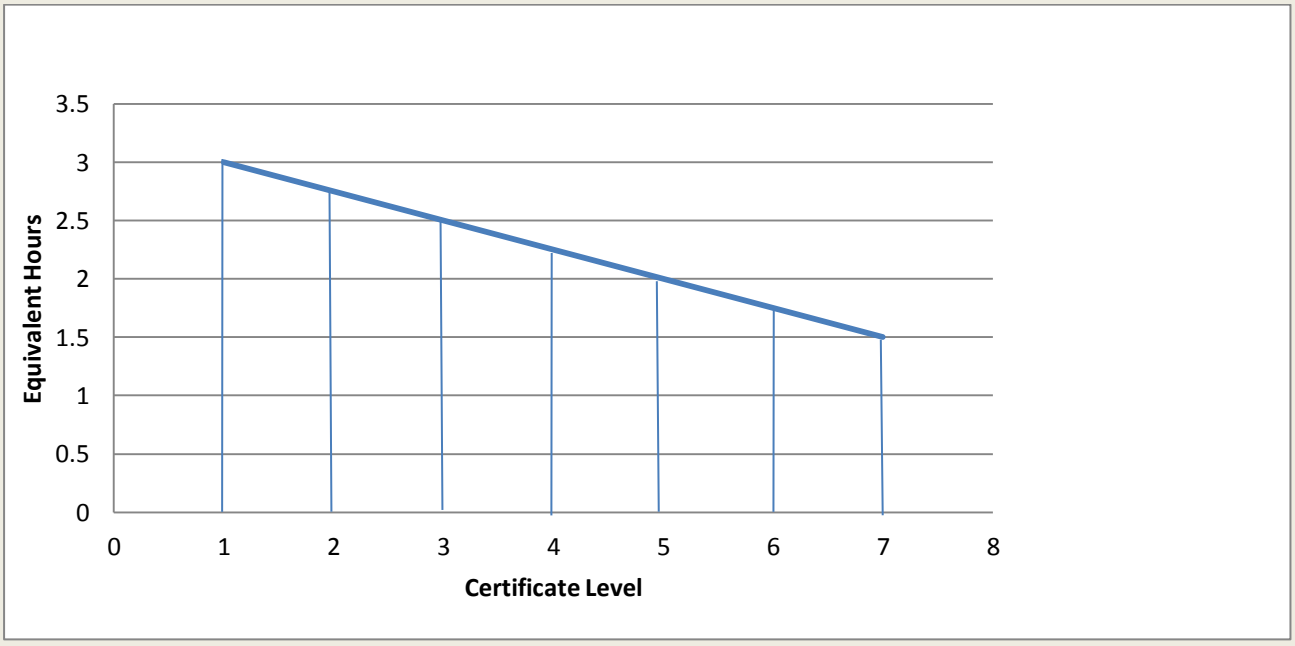


**Fig I: Graph of Equivalent hours Vs Certificate Level**

| **Certificate Levels** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| **Equivalent Hours** | 3 | 2.75 | 2.5 | 2.25 | 2 | 1.75 | 1.5 |

**Fig II D**epicts the Vocational Credits, General Credits and Total Credits in Graphical form

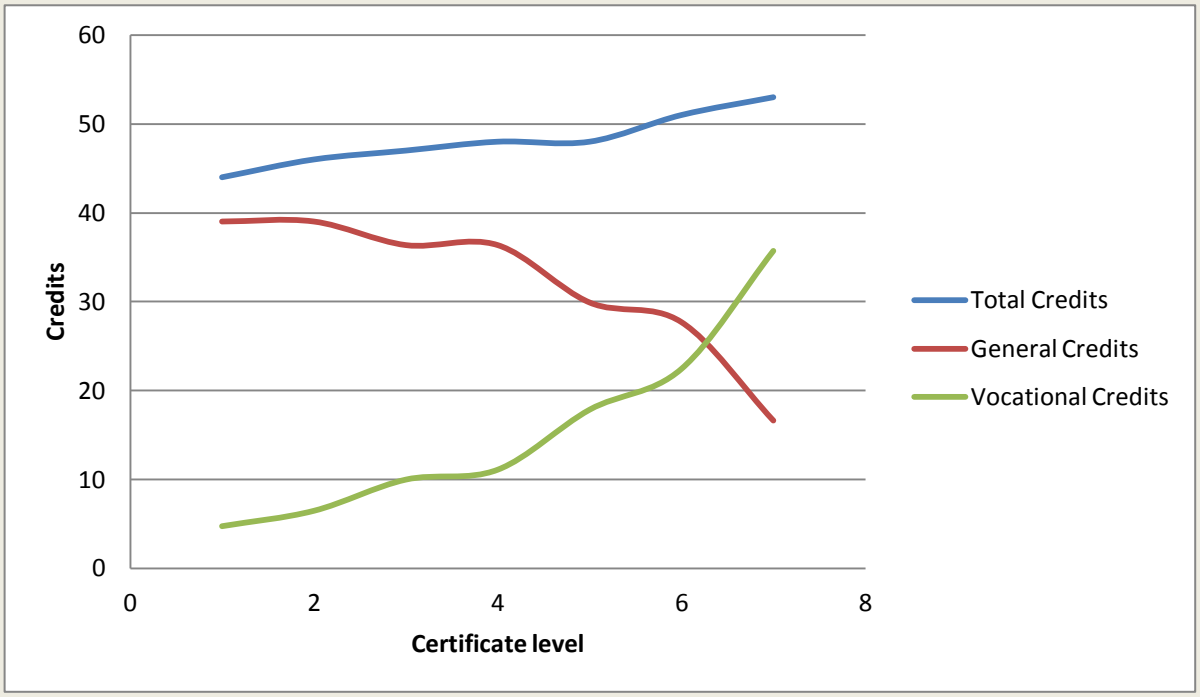


**Fig II:- Graph between Vocational Credits, General Credits and Total Credits**

| Certificate Level | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| **Total Credits** | **44** | **46** | **47** | **48** | **48** | **51** | **53** |
| **General Credits** | **39.00** | **39.00** | **36.35** | **36.35** | **29.89** | **27.68** | **16.61** |
| **Vocational Credits** | **4.76** | **6.49** | **10.00** | **11.11** | **17.86** | **22.45** | **35.71** |

**Annexure I**

**Sector: Agricultural** **Specialization: Food Processing**

| S.No. | Certificate Level | Vocational Hours | General Hours |
|---|---|---|---|
| 1. | Level-I | 200 hrs | 780 |
| 2. | Level-II | 250 hrs | 780 |
| 3. | Level-III | 350 hrs | 690 |
| 4. | Level-IV | 350 hrs | 690 |
| 5. | Level-V | 500 hrs | 540 |
| 6. | Level-VI | 550 hrs | 500 |
| 7. | Level-VII | 750 hrs | 300 |

**Certificate Level-I**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | Workshop Practice – I<br>Carpentry Shop – I<br>Fitting and Plumbing Shop – I | 50 | G (1) |
| 2. | Fundamentals of Food Engineering | 50 | |
| 3. | Engineering Drawing – I | 50 | |
| 4. | Processing and Food Engineering- I | 50 | |
| | **Total Vocational Content** | **200** | |

**Certificate Level- II**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | Engineering drawing – II | 25 | G (2) |
| 2. | Surveying and leveling | 25 | |
| 3. | General Workshop Practice-II Welding Shop, Electric Shop | 75 | |
| 4. | Manufacturing Technology – I<br>Fitting Shop | 75 | |
| | Basics of Electrical Engineering - I | 50 | |
| | **Total Vocational Content** | **250** | |

**Certificate Level- III**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | General Workshop Practice – III | 200 | GS (3) |
| 2. | Manufacturing Technology – II | 75 | |
| 3. | Basics of Electrical Engineering – II | 75 | |
| | **Total Vocational Content** | **350** | |

**Certificate Level- IV**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | Communication Skills | 50 | GS (4) |
| 2. | Engineering Drawing – III | 75 | |
| 3. | Applied Mechanics | 75 | |
| 4. | Machine Drawing – II | 75 | |
| 5. | Manufacturing Technology – III | 75 | |
| | **Total Vocational Content** | **350** | |

**Certificate Level- V**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | Advanced Processing and Food Engineering-I | 500 | GS (5) |
| | **Total Vocational Content** | **500** | |

**Certificate Level- VI**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | Advanced Processing and Food Engineering-II | 550 | GS (6) |
| | **Total Vocational Content** | **550** | |

**Certificate Level- VII**

| S. No | Vocational Content | Hrs. | General Content Referred as |
|---|---|---|---|
| 1. | Advanced Processing And Food Engineering-III | 550 | GS (7) |
| 2. | Seminar | 100 | |
| 3. | Project | 100 | |
| | **Total Vocational Content** | **750** | |

**LEGEND:**

***G(S/A/C)(1 2 3 4 5 6 7)***
***General(Science/Arts/Commerce)(Level1 Level2 Level3 ….. Level 7)***

## General Content

**G (1)**

**Certificate Level-I**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any two Languages to be selected from the following :<br><br>Hindi, English, Assamese, Bengali, Gujarati, Kannada, Kashmiri, Marathi, Malayalam, Manipuri, Oriya, Punjabi, Sindhi, Tamil, Telugu, Urdu, Lepcha, Limbu, Bhutia, Sanskrit, Arabic, Persian, French, German, Portuguese, Russian, Spanish, Nepali, Tibetan and Mizo, Tangkhul and Bodo. | |
| 1. | Language I | 140 |
| 2. | Language II | 140 |
| 3. | Mathematics | 140 |
| 4. | Science | 180 |
| 5. | Social Science | 180 |
| | **Total General Content** | **780** |

**G(2)**

**Certificate Level- II**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any two Languages to be selected from the following :<br><br>Hindi, English, Assamese, Bengali, Gujarati, Kannada, Kashmiri, Marathi, Malayalam, Manipuri, Oriya, Punjabi, Sindhi, Tamil, Telugu, Urdu, Lepcha, Limbu, Bhutia, Sanskrit, Arabic, Persian, French, German, Portuguese, Russian, Spanish, Nepali, Tibetan and Mizo, Tangkhul and Bodo. | |
| 1. | Language I | 140 |
| 2. | Language II | 140 |
| 3. | Mathematics | 140 |
| 4. | Science | 180 |
| 5. | Social Science | 180 |
| | **Total General Content** | **780** |

**GS (3)**

**Certificate Level- III**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any two languages out of following<br><br>Hindi, English, Assamese, Bengali, Gujarati, Kashmiri, Kannada, Marathi, Malyalam, Manipuri, Oriya, Punjabi, Sindhi, Tamil, Telugu, Urdu, Sanskrit, Arabic, Persian, Limbu, Lepcha, Bhutia, Mizo, Tangkhul, Bodo, Nepali, Tibetan, French, German, Portuguese, Russian And Spanish. | |
| 1. | Language I | 120 |
| 2. | Language II | 120 |
| | Any three papers out of following | |
| 3. | Mathematics | 150 |
| 4. | Physics | 150 |
| 5. | Chemistry | 150 |
| 6. | Biology | 150 |
| 7. | Biotechnology | 150 |
| 8. | Engineering Graphics | 150 |
| 9. | Agriculture | 150 |
| 10. | Computer Science | 150 |
| 11. | Informatics Practices | 150 |
| 12. | Multimedia and Web Technology | 150 |
| | **Total General Content** | **690** |

**GS (4)**
**Certificate Level- IV**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any two languages out of following<br><br>Hindi, English, Assamese, Bengali, Gujarati, Kashmiri, Kannada, Marathi, Malyalam, Manipuri, Oriya, Punjabi, Sindhi, Tamil, Telugu, Urdu, Sanskrit, Arabic, Persian, Limbu, Lepcha, Bhutia, Mizo, Tangkhul, Bodo, Nepali, Tibetan, French, German, Portuguese, Russian and Spanish. | 120<br>120 |
| 1. | Language I | |
| 2. | Language II | |
| | Any three papers out of following | |
| 3. | Mathematics | 150 |
| 4. | Physics | 150 |
| 5. | Chemistry | 150 |
| 6. | Biology | 150 |
| 7. | Biotechnology | 150 |
| 8. | Engineering Graphics | 150 |
| 9. | Agriculture | 150 |
| 10. | Computer Science | 150 |
| 11. | Informatics Practices | 150 |
| 12. | Multimedia and web technology | 150 |
| | **Total General Content** | **690** |

**GS (5)**

**Certificate Level- V**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any three papers out of following | |
| 1. | Mathematics | 180 |
| 2. | Physics | 180 |
| 3. | Chemistry | 180 |
| 4. | Computer Science | 180 |
| 5. | Applied statistics | 180 |
| 6. | Botany | 180 |
| 7. | Zoology | 180 |
| 8. | Biochemistry | 180 |
| 9. | Microbiology | 180 |
| 10. | Electronics | 180 |
| | **Total General Content** | **540** |

**GS (6)**

**Certificate Level- VI**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any two papers out of following | |
| 1. | Mathematics | 250 |
| 2. | Physics | 250 |
| 3. | Chemistry | 250 |
| 4. | Computer Science | 250 |
| 5. | Applied Statistics | 250 |
| 6. | Botany | 250 |
| 7. | Zoology | 250 |
| 8. | Biochemistry | 250 |
| 9. | Microbiology | 250 |
| 10. | Electronics | 250 |
| | **Total General Content** | **500** |

**GS (7)**

**Certificate Level- VII**

| S. No | General Content | Hrs. |
|---|---|---|
| | Any one paper out of following | |
| 1. | Mathematics | 300 |
| 2. | Physics | 300 |
| 3. | Chemistry | 300 |
| 4. | Computer science | 300 |
| 5. | Applied Statistics | 300 |
| 6. | Botany | 300 |
| 7. | Zoology | 300 |
| 8. | Biochemistry | 300 |
| 9. | Microbiology | 300 |
| 10. | Electronics | 300 |
| | **Total General Content** | **300** |

**Annexure II: Example: Calculation of Credits for Sector: Agriculture: Specialisation: Food Processing Stream: Science**

| SECTOR | SPECIALISATION | CER, LEVEL | CONTENT DETAIL | VOCATIONAL HRS | VOCATIONAL CREDITS | GENERAL CONTENT DETAILS | GENERAL CONTENTS HRS(THEORY) | GENERAL CONTENT HRS(PRACTICAL) | GENERAL CONTENT TOTAL HRS | GENERAL CONTENTS THEORY CREDIT | GENERAL CONTENTS PRACTICAL CREDIT | GENERAL CONTENTS TOTAL CREDIT | TOTAL CREDITS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGRICULTURE | FOOD PROCESSING | I | WORKSHOP PRACTICE – I CARPENTRY SHOP – I FITTING AND PLUMBING SHOP – I | 50 | | LANGUAGE I | 84 | 56 | 140 | **6.00** | 1.00 | 7.00 | 7 |
| AGRICULTURE | FOOD PROCESSING | I | FUNDAMENTALS OF FOOD ENGINEERING | 50 | | LANGUAGE II | 84 | 56 | 140 | **6.00** | 1.00 | 7.00 | 7 |
| AGRICULTURE | FOOD PROCESSING | I | ENGINEERING DRAWING – I | 50 | | MATHEMATICS | 84 | 56 | 140 | **6.00** | 1.00 | 7.00 | 7 |
| AGRICULTURE | FOOD PROCESSING | I | PROCESSING AND FOOD ENGINEERING I | 50 | | SCIENCE | 108 | 72 | 180 | **7.71** | 1.29 | 9.00 | 9 |
| AGRICULTURE | FOOD PROCESSING | I | | | | SOCIAL SCIENCE | 108 | 72 | 180 | **7.71** | 1.29 | 9.00 | 9 |
| **AGRICULTURE** | **FOOD PROCESSING** | **I** | | **200** | **4.76** | | **468** | **312** | **780** | **33.43** | **5.57** | **39.00** | **44** |
| AGRICULTURE | FOOD PROCESSING | II | ENGINEERING DRAWING – II | 25 | | LANGUAGE I | 84 | 56 | 140 | **6.00** | 1.00 | 7.00 | 7 |
| AGRICULTURE | FOOD PROCESSING | II | SURVEYING AND LEVELING | 25 | | LANGUAGE II | 84 | 56 | 140 | **6.00** | 1.00 | 7.00 | 7 |
| AGRICULTURE | FOOD PROCESSING | II | GENERAL WORKSHOP PRACTICE-II WELDING SHOP, ELECTRIC SHOP | 75 | | MATHEMATICS | 84 | 56 | 140 | **6.00** | 1.00 | 7.00 | 7 |
| AGRICULTURE | FOOD PROCESSING | II | MANUFACTURING TECHNOLOGY – I FITTING SHOP | 75 | | SCIENCE | 108 | 72 | 180 | **7.71** | 1.29 | 9.00 | 9 |
| AGRICULTURE | FOOD PROCESSING | II | BASICS OF ELECTRICAL ENGINEERING - I | 50 | | SOCIAL SCIENCE | 108 | 72 | 180 | **7.71** | 1.29 | 9.00 | 9 |
| **AGRICULTURE** | **FOOD PROCESSING** | **II** | | **250** | **6.49** | | **468** | **312** | **780** | **33.43** | **5.57** | **39.00** | **46** |
| AGRICULTURE | FOOD PROCESSING | III | GENERAL WORKSHOP PRACTICE – III | 200 | | LANGUAGE I | 78 | 42 | 120 | **5.57** | 0.75 | 6.32 | 7 |
| AGRICULTURE | FOOD PROCESSING | III | MANUFACTURING TECHNOLOGY – II | 75 | | LANGUAGE II | 78 | 42 | 120 | **5.57** | 0.75 | 6.32 | 7 |
| AGRICULTURE | FOOD PROCESSING | III | BASICS OF ELECTRICAL ENGINEERING – II | 75 | | MATHEMATICS | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | PHYSICS | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | CHEMISTRY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | BIOLOGY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | BIOTECHNOLOGY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | ENGINEERING GRAPHICS | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | AGRICULTURE | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | COMPUTER SCIENCE | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | INFORMATICS PRACTICES | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | III | | | | MULITMEDIA AND WEB TECHNOLOGY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| **AGRICULTURE** | **FOOD PROCESSING** | **III** | | **350** | **10.00** | | **448.5** | **241.5** | **690** | **32.04** | **4.31** | **36.35** | **47** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGRICULTURE | FOOD PROCESSING | IV | COMMUNICATION SKILLS | 50 | | LANGUAGE I | 78 | 42 | 120 | **5.57** | 0.75 | 6.32 | 7 |
| AGRICULTURE | FOOD PROCESSING | IV | ENGINEERING DRAWING – III | 75 | | LANGUAGE II | 78 | 42 | 120 | **5.57** | 0.75 | 6.32 | 7 |
| AGRICULTURE | FOOD PROCESSING | IV | APPLIED MECHANICS | 75 | | MATHEMATICS | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | MACHINE DRAWING – II | 75 | | PHYSICS | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | MANUFACTURING TECHNOLOGY – III | 75 | | CHEMISTRY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | BIOLOGY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | BIOTECHNOLOGY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | ENGINEERING GRAPHICS | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | AGRICULTURE | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | COMPUTER SCIENCE | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | INFORMATICS PRACTICES | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| AGRICULTURE | FOOD PROCESSING | IV | | | | MULITMEDIA AND WEB TECHNOLOGY | 97.5 | 52.5 | 150 | **6.96** | 0.94 | 7.90 | 8 |
| **AGRICULTURE** | **FOOD PROCESSING** | **IV** | | **350** | **11.11** | | **448.5** | **241.5** | **690** | **32.04** | **4.31** | **36.35** | **48** |
| AGRICULTURE | FOOD PROCESSING | V | ADVANCED PROCESSING AND FOOD ENGINEERING-I | 500 | | MATHEMATICS | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | PHYSICS | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | CHEMISTRY | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | COMPUTER SCIENCE | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | APPLIED STATISTICS | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | BOTANY | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | ZOOLOGY | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | BIOCHEMISTRY | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | MICROBIOLOGY | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | | | ELECTRONICS | 126 | 54 | 180 | **9.00** | 0.96 | 9.96 | 10 |
| AGRICULTURE | FOOD PROCESSING | V | | 500 | 17.86 | | 378 | 162 | 540 | **27.00** | 2.89 | 29.89 | 48 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGRICULTURE | FOOD PROCESSING | VI | ADVANCED PROCESSING AND FOOD ENGINEERING-II | 550 | | MATHEMATICS | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | PHYSICS | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | CHEMISTRY | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | COMPUTER SCIENCE | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | APPLIED STATISTICS | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | BOTANY | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | ZOOLOGY | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | BIOCHEMISTRY | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | MICROBIOLOGY | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | | | ELECTRONICS | 175 | 75 | 250 | **12.50** | 1.34 | 13.84 | 14 |
| AGRICULTURE | FOOD PROCESSING | VI | | 550 | 22.45 | | 350 | 150 | 500 | **25.00** | 2.68 | 27.68 | 51 |
| AGRICULTURE | FOOD PROCESSING | VII | ADVANCED PROCESSING AND FOOD ENGINEERING-III | 550 | | MATHEMATICS | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | SEMINAR | 100 | | PHYSICS | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | PROJECT | 100 | | CHEMISTRY | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | COMPUTER SCIENCE | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | APPLIED STATISTICS | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | BOTANY | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | ZOOLOGY | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | BIOCHEMISTRY | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | MICROBIOLOGY | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | | | ELECTRONICS | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 17 |
| AGRICULTURE | FOOD PROCESSING | VII | | 750 | 35.71 | | 210 | 90 | 300 | **15.00** | 1.61 | 16.61 | 53 |

Department of Higher Education
MInistry of Human Resource Development
Government of Indla


**ALL INDIA COUNCIL FOR TECHNICAL EDUCATION**

7TH FLOOR, CHANDERLOK BUILDING
JANPATH, NEW DELHI – 110 001
www.aicte-india.org