SRI VENKATESWARA UNIVERSITY : TIRUPATI

B. Vocational in Food Processing Technology
Under CBCS W.E.F. 2020-21

Course Structure - Semester – II–NSQF Level -5

Sl. No	Skill/ Gen. Edu	Course	Title of the Paper/Course and code	Credits per course	Hours/ week	Total Hours/ Course	Marks		
							Internal	External	Total
1	Gen. Education component	Language	General English	3	3	45	25	75	100
2		Life skills	Information and Communication Technology	2	2	30	-	50	50
3		Skill Dev. course	Personality Development	2	2	30	-	50	50
4		Skill Dev. course	Food Adulteration	2	2	30	-	50	50
5	Domain Skill component	**Core-I**	Food Microbiology	4	4	60	25	75	100
6		Practical-I	Practical–I: Food Microbiology practicals.	2	2	30	-	50	50
7		**Core-II**	Dairy Technology	4	4	60	25	75	100
8		Practical-II	Practical–II: Dairy Technology practicals.	2	2	30	-	50	50
9		**Core-III**	Technology of Fruits and Vegetables	4	4	60	25	75	100
		Practical-III	Technology of Fruits and Vegetables practicals.	2	2	30	-	50	50
10		Industrial Internship	Industrial Training for 30 days and report &seminar presentation	3	36	144	-	50	50
Total Credits				**30**	**Total Marks**				**750**

SRI VENKATESWARA UNIVERSITY

B.A. / B.Com. / B.Sc. / B.Voc. DEGREE COURSE IN ENGLISH

FIRST YEAR - SECOND SEMESTER

(Revised Syllabus under CBCS w.e.f. 2020-21)

ENGLISH PRAXIS COURSE - II
A COURSE IN READING & WRITING SKILLS

I. UNIT		
Prose	: 1. How to Avoid Foolish Opinions	Bertrand Russell
Skills	: 2. Vocabulary: Conversion of Words	
	: 3. One Word Substitutes	
	: 4. Collocations	
II. UNIT		
Prose	: 1. The Doll's House	Katherine Mansfield
Poetry	: 2. Ode to the West Wind	P B Shelley
Non-Detailed Text	: 3. Florence Nightingale	Abrar Mohsin
Skills	: 4. Skimming and Scanning	
III. UNIT		
Prose	: 1. The Night Train at Deoli	Ruskin Bond
Poetry	: 2. Upagupta	Rabindranath Tagore
Skills	: 3. Reading Comprehension	
	: 4. Note Making/Taking	
IV. UNIT		
Poetry	: 1. Coromandel Fishers	Sarojini Naidu
Skills	: 2. Expansion of Ideas	
	: 3. Notices, Agendas and Minutes	
V.UNIT		
Non-Detailed Text	: 1. An Astrologer's Day	R K Narayan
Skills	: 2. Curriculum Vitae and Resume	
	: 3. Letters	
	: 4. E-Correspondence	

Approved by BOS (PASS)
w.e.f. 2020-2021

3/9/2020
Chairperson
BOS in ENGLISH
(PASS)

SRI VENKATESWARA UNIVERSITY
B.A. / B.Com. / B.Sc. / B.Voc. DEGREE EXAMINATION IN ENGLISH
FIRST YEAR - SECOND SEMESTER
(Revised Syllabus under CBCS w.e.f. 2020-21)

ENGLISH PRAXIS COURSE-II
A COURSE IN READING & WRITING SKILLS

Time: 3 hours **Max Marks: 75**

I) Answer any **THREE** of the following questions **(3X5=15)**

a. Summarize Russell's, "How to Avoid Foolish Opinion"

b. Write Noun forms for the following words by adding a Suffix:

i) Manage ii) free iii) pollute iv) create v) Maintain

c. Write one word substitutes for the following

i) A Government by one
ii) One who looks at the bright side of things
iii) A position for which no salary is paid
iv) One who eats too much
v) That which cannot be avoided.

d. Match the following into appropriate collocations:

A	B
i) Strong	i) Privacy
ii) Happy	ii) mistake
iii) some	iii) ending
iv) works	iv) coffee
v) Terrible	v) perfectly

e. Avoiding stupidity is easier than seeking brilliance. Explain

II) Answer any **THREE** of the following questions; **(3X5=15)**

a. Compare Torvald's and Nora's attitudes toward money
b. How does Shelley describe the power of West Wind
c. Describe Florence Nightingale
d. Define Skimming
e. Define Scanning

III) Answer any **THREE** of the following questions **(3X5=15)**

a. What's the theme of "The Night" Train at Deoli?
b. Critically appreciate the poem "Upagupta"
c. Why does the narrator say it is a game in the Night Train at Deoli
d. Read the following passage and answer the questions that follow.

Slavery can broadly be described as the ownership, buying and selling of human beings for the purpose of forced labour. The institution of slavery is as old as civilization. Many nations and empires were built by the muscles of the slaves.

Overtime people have found many reasons to justify slavery. Slaves were ususally considered somehow different than their owners. They may belong to different race, religion, nationality or ethnic background. By focussing on such differences, slave owners felt that they could deny basic human rights to their slaves.

i) What is the purpose of the institution of slavery?
ii) What is a slavery?
iii) How were the empires built?
iv) How were the slaves different from their masters?
v) Give the meaning of 'deny'

e. Make notes on the following passage.
Early rising is the secret for a happy life. We all wish to live long but we cannot. We go against Nature. Nature likes us to work during day and to rest at night. But we do not obey this law of Nature. We do not go to bed early.We read or write late into night. Some of us keep playing, dancing and drinking whole night. So, we do not rise early. Our health breaks down and we fall ill. Nature takes revenge. We have to suffer for our disobedience. But birds and animals are healthy. They do not need a doctor every day. They sleep early and rise early. This simple habit will give everything.So, it is said: "Early to bed and early to rise makes a man healthy, wealthy and wise"

IV) Answer any **THREE** of the following questions. **(3X5=15)**

a. Write a critical appreciation of the poem the Coromandel Fishers
b. Make hay while the sun shines. Expand
c. How does Sarojini Naidu a day in the lives of the fishermen?
d. Imagine that you are the manager of a company. You want to inform your employees of an important meeting. Write a suitable notice.
e. Explain minutes.

V) Answer any **THREE** of the following questions **(3X5=15)**

a. Justify the title "An Astrologer's Day"
b. Prepare a CV for the post of a Sales Executive
c. Write a letter to your friend about Carona crisis at your native place
d. Write a resume for your dream job
e. Assume that you received the letter of appointment for the post of General Manager from Splendour Pvt Ltd. Send an email to the company thanking them for the offer.

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(05.12.2020)
(Dr M.SREELATHA),
Chairman,
BOS English(PASS).

SRI VENKATESWARA UNIVERSITY :: TIRUPATI
B.VOC. DEGREE COURSE IN FOOD PROCESSING TECHNOLOGY
FIRST YEAR – SECOND SEMESTER
Under CBCS W.E.F. 2020-21

GENERAL EDUCATION COMPONENT
Life Skill Course: INFORMATION & COMMUNICATION TECHNOLOGY

Total 30 hrs (02h/wk), 02 Credits & Max Marks: 50

Objectives:

This course aims at acquainting the students with basic ICT tools which help them in their day to day and life as well as in office and research.

Course outcomes: After completion of the course, student will be able to;

1. Understand the literature of social networks and their properties.
2. Explain which network is suitable for whom.
3. Develop skills to use various social networking sites like twitter, flickr, etc.
4. Learn few GOI digital initiatives in higher education.
5. Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.
6. Get acquainted with internet threats and security mechanisms.

SYLLABUS:

UNIT-I: (08 hrs)

Fundamentals of Internet: What is Internet?, Internet applications,Internet Addressing – Entering a Web Site Address, URL–Components of URL, Searching the Internet, Browser –Types of Browsers,Introduction to Social Networking: Twitter, Tumblr, LinkedIn, Facebook, flickr, Skype, yahoo, YouTube, WhatsApp .

UNIT-II:(08 hrs)

E-mail: Definition of E-mail -Advantages and Disadvantages –User Ids, Passwords, Email Addresses, Domain Names, Mailers, Message Components, MessageComposition, Mail Management.

G-Suite: Google drive, Google documents, Google spread sheets, Google Slides and Google forms.

UNIT-III:(10 hrs)

Overview of Internet security, E-mail threats and secure E-mail, Viruses and antivirus software, Firewalls, Cryptography, Digital signatures, Copyright issues.

What are GOI digital initiatives in higher education? (SWAYAM, SwayamPrabha, National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, Virtual labs, e-acharya, e-Yantra and NPTEL).

RECOMMENDED CO-CURRICULAR ACTIVITIES: (04 hrs)

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz and Group Discussion
4. Slip Test
5. Try to solve MCQ's available Online.
6. Suggested student hands on activities :
    a. Create your accounts for the above social networking sites and explore them, establish a video conference using Skype.
    b. Create an Email account for yourself- Send an email with two attachments to another friend. Group the email addresses use address folder.
    c. Register for one online course through any of the online learning platforms like NPTEL, SWAYAM, Alison, Codecademy, Coursera. Create a registration form for your college campus placement through Google forms.

Reference Books:

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e – byRaymond Greenlaw and Ellen Hepp, Publishers : TMH
2. Internet technology and Web design, ISRD group, TMH.
3. Information Technology – The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.

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FIRST YEAR – SECOND SEMESTER

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GENERAL EDUCATION COMPONENT

Life Skill Course: INFORMATION & COMMUNICATION TECHNOLOGY

MODELQUESTIONPAPER

Time: 1 ½ hours (90 Min.) Marks: 50 marks

PART – A

Answer any **Four** of the following question. **(4X5=20M)**

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

PART – B

Answer any **Three** The Questions. Each question carries 10 marks **(3X10=30M)**

9.	
10.	
11.	
12.	
13.	
14.	

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GENERAL EDUCATION COMPONENT
Skill Development Course-I: PERSONALITY DEVELOPMENT

Total 30 hrs (02h/wk), **02 Credits & Max Marks: 50**

Syllabus:

Unit – I:(7 hrs)

Meaning of Personality – Explanations of Human Personality – Psychodynamic Explanations – Social Cognitive Explanation – Big Five traits of Personality

Unit – II: (8 hrs)

Assessment of Personality - Projective& Self Report Techniques - Building Self-Confidence – Enhancing Personality Skills

Unit – III:(10 hrs)

Leadership Characteristics – Types of Leaders – Importance of Leadership – Leadership Skills – Building and Leading Efficient Teams – Leadership Qualities of Abraham Lincoln, mahatma Gandhi, Prakasam Pantulu, Dr. B. R. Ambedkar & J.R.D.Tata

Co-curricular Activities Suggested: (05 hrs)

1. Assignments, Group discussions, Quiz etc
2. Invited Lecture by a local expert
3. Case Studies (ex., on students behavior, local leaders etc.)

Reference Books:

- Girish Batra, Experiments in Leadership, Chennai: Notion Press, 2018
- Mitesh Khatri, Awaken the Leader in You, Mumbai: Jaico Publishing House, 2013
- Carnegie Dale, Become an Effective Leader, New Delhi: Amaryllis, 2012
- Hall, C.S., Lindzey. G. & Campbell, J.B Theories of Personality. John Wiley & Sons, 1998

Syllabus Approved. by The
BOS in English (PASS)
w.e.f. 2020-2021

M Sreelatha
Chairperson
BOS in English
(PASS)

SRI VENKATESWARA UNIVERSITY :: TIRUPATI
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GENERAL EDUCATION COMPONENT
Skill Development Course-I: PERSONALITY DEVELOPMENT

MODEL QUESTION PAPER

Time: 2 hrs **Max. Marks: 50**

Section A

I. Answer any Four Questions. Each Question carries 5 marks **4 X5=20**

1. What are the characteristics of Personality?
2. What is Personality? Discuss its Nature.
3. What are the strengths and weaknesses of Projective Techniques?
4. Discuss the importance of Team.
5. What techniques can be used for effective Team Building?
6. Explain the differences between Work Groups and Work Teams.
7. What do you understand by the term "Leadership"?
8. What are the Determinants of Personality?

Section B

II. Answer any Three Questions. Each Question carries 10 marks **3 X10=30**

1. Describe the assumptions of the psychodynamic perspective on personality development, including the id, ego, and superego
2. Discuss the "Big Five Personality Traits".
3. How do culture and family determine the development of the Personality?
4. How does an individual build self-confidence?
5. What do you understand by the term Leadership? Enumerate its important characteristics.
6. Explain the different types of Leadership.

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Chairperson
BOS in English
(PASS)

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B.VOC. DEGREE COURSE IN FOOD PROCESSING TECHNOLOGY

FIRST YEAR – SECOND SEMESTER
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GENERAL EDUCATION COMPONENT

Skill Development Course-II: FOOD ADULTERATION

Total 30 hrs (02h/wk), *02 Credits & Max Marks: 50*

Learning Outcomes:
After successful completion of the course, students will be able to:

1. *Get basic knowledge on*various *foods and about adulteration.*
2. *Understand the adulteration of common foods and their adverse impact on health*
3. *Comprehend certain skills of detecting adulteration of common foods.*
4. *Be able to extend their knowledge to other kinds of adulteration, detection and remedies.*
5. *Know the basic laws and procedures regarding food adulteration and consumer protection.*

SYLLABUS:

UNIT-I – Common Foods and Adulteration: (07hrs)

Common Foods subjected to Adulteration - Adulteration – Definition – Types; Poisonous substances, Foreign matter, Cheap substitutes, Spoiled parts. Adulteration through Food Additives – Intentional and incidental. General Impact on Human Health.

UNIT-II –: Adulteration of Common Foods and Methods of Detection: (10hrs)

Means of AdulterationMethods of Detection Adulterants in the following Foods; Milk, Oil, Grain, Sugar, Spices and condiments, Processed food, Fruits and vegetables. Additives and Sweetening agents (at least three methods of detection for each food item).

UNIT-III –: Present Laws and Procedures on Adulteration: (08hrs)

Highlights of Food Safety and Standards Act 2006 (FSSA) –Food Safety and Standards Authority of India–Rules and Procedures of Local Authorities.
Role of voluntary agencies suchas, Agmark, I.S.I.Qualitycontrol laboratories of companies, Private testing laboratories,Quality controllaboratoriesofconsumerco-operatives.
Consumer education,Consumer's problemsrightsandresponsibilities, COPRA 2019 - Offenses and Penalties – Procedures to Complain – Compensation to Victims.

Recommended Co-curricular Activities (including Hands on Exercises): (05hrs)

1. Collection of information on adulteration of some common foods from local market
2. Demonstration of Adulteration detection methods for a minimum of 5 common foods (one method each)
3. Invited lecture/training by local expert.
4. Visit to a related nearby laboratory
5. Assignments, Group discussion, Quiz etc

Reference e Books and Websites:

1. A firstcourseinFoodAnalysis–A.Y.Sathe,NewAgeInternational(P)Ltd.,1999
2. FoodSafety,casestudies–Ramesh.V.Bhat,NIN,1992
3. https://old.fssai.gov.in/Portals/0/Pdf/Draft_Manuals/Beverages and confectionary.pdf
4. https://cbseportal.com/project/Download-CBSE-XII-Chemistry-Project-Food-Adulteration#gsc.tab=0 (Downloadable e material on food adulteration)
5. https://www.fssai.gov.in/
6. https://indianlegalsolution.com/laws-on-food-adulteration/
7. https://fssai.gov.in/dart/
8. https://byjus.com/biology/food-adulteration/
9. Wikiepedia
10. Vikaspedia

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GENERAL EDUCATION COMPONENT

Skill Development Course-II: FOOD ADULTERATION

MODEL QUESTION PAPER

Max. Marks: 50 *Time: 1½ hrs (90 Minutes)*

SECTION- A (4x5M=20 Marks)

Answer any four questions. Each answer carries 5 marks
(At least 1 question should be given from each Unit)

1. Define food adulteration?
2. Explain the adulteration through Food Additives
3. Name few cheap substitutes used in food adulteration
4. Give examples for food additives and sweetening agents
5. Write a short notes on processed food
6. Explain the procedures to complain about the food adulteration
7. Name the laws that governs the food adulteration
8. Explain the procedure to get ccompensation to the victims of food adulteration

SECTION B (3x10M = 30 Marks)

Answer any three questions. Each answer carries 10 marks
(At least 1 question should be given from each Unit)

9. Write an essay on the common Foods which are subjected to Adulteration and explain the types poisonous substances added for food adulteration
10. Describe the highlights of Food Safety and Standards Act 2006 (FSSAI)
11. Explain the food testing and standardized testing methods and protocols
12. Write in detail about the general Impact of food adulteration on Human Health
13. Write an essay on different types of offenses of food adulteration and the penalties imposed

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FIRST YEAR – SECOND SEMESTER
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SKILL COMPONENT
Core Paper-I: FOOD MICROBIOLOGY

Total Credits: 04 **Total hours: 60**

Learning Outcomes:

- Identify the important pathogens and spoilage microorganisms in foods and the conditions under which they will grow.
- Identify the conditions under which the important pathogens are commonly inactivated, killed or made harmless in foods.
- Utilize laboratory techniques to identify microorganisms in food.
- Know the principles involving food preservation via fermentation processes.
- Know the role and significance of microbial inactivation, adaptation and environmental factors (i.e., aW, pH, temperature) on growth and response of microorganisms in various environments.

Syllabus:

UNIT I Introduction **12 hours**

Introduction of microbiology, History, and significance of food microbiology. Classification of microorganisms, nomenclature, morphology – yeast and moulds, bacterial cells, viruses. Important microbes in food, microbial growth characteristics – Microbial reproduction, nature of growth in food.

UNIT II Moisture **12 hours**

Moisture requirement, concept of water activity, temperature, oxidation reduction potential, inhibitory substances, and biological structure. Factors influencing microbial growth in food: Intrinsic and extrinsic factors, Food spoilage. Definition - food infection and food intoxication.

UNIT III Food microbiology and spoilage **12 hours**

Food microbiology and spoilage of cereals, vegetables and fruits, meat, eggs, poultry, fish, milk and milk products, canned foods, nuts and oil seeds, fats and oil seeds. Industrial microbiology: Industrial application of microbes. Beneficial uses of microorganisms. Probiotics and prebiotics.

UNIT IV Thermal inactivation **12 hours**

Thermal inactivation of microbes: pasteurization, sterilization etc. concept of TDT, F, Z and D values. Factors affecting heat resistance. Antimicrobial agents: mechanism and action microbiological quality assurance systems in food industry.

UNIT V Microbial analysis techniques **12 hours**

Staining Technology and Bright-Field Microscope Use, Enumeration of Bacteria in Broth Suspension by Spread and Pour Plating, Isolation of Foodborne Pathogens on Selective, Differential, and Enriched Medium by Streak Plating

Reference Books:

1. Food microbiology by W.C. Frazier, Ist Edition by Mcgraw Hill Pub. Co. New York.
2. Modern Food Microbiology, J.M. Jay. CBS publisher.
3. Modern food Microbiology by James M. Jay.
4. Food borne bacterial pathogens by M.P. Doyle
5. Basic Food Microbiology by G.J. Banwart

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SKILL COMPONENT

Practical Paper-I: FOOD MICROBIOLOGY

Credits: 02 **Total hours: 30**

1. Preparation of commonly used growth media liquid and solid: simple and differential media.
2. Differential staining (Gram, spore, acid fast)
3. Isolation technique for microorganisms - Streak & pour plate Enumeration of microorganisms in air and soil.
4. Enumeration of microorganisms in water: total viable count, coliform (MPN).
5. Detection and determination of Aerobic Mesophilic Plate count, Aciduric Flat Sour Spore-formers, Bacillus cereus
6. Detection and Determination of Anaerobic Mesophilic Spore Formers in Foods (Clostridium perfringens)
7. Detection and Determination of Coliforms, Faecal coliforms and *E.coli* in Foods and Beverages
8. Detection and Confirmation of Salmonella species in Foods
9. Detection and Confirmation of Shigella species in Foods
10. Observation and Enumeration of Molds from Spoiled Bread

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SKILL COMPONENT
Core Paper-II: DAIRY TECHNOLOGY

Total Credits: 04 **Total hours: 60**

Learning Outcomes:

- To understand about the products that can be made from milk.
- To understand the processing and storage of dairy products
- To know about the quality control measures applied in dairy industries.
- To have a basic idea about their processing and products which can be made at a small scale.

Syllabus

Unit I: Milk and its properties **12 hours**

Milk, Types of milk, sources and composition of milk,factors effecting composition of milk, physiochemical properties of milk, grading of milk-definition and types of grades, collection, and transportation of milk.Color, taste, pH and buffering capacity, refractive index, viscosity, surface tension, freezing, boiling point, specific heat, electrical conductivity

Unit II: Processing of Milk **12 hours**

Processing of market milk, Flowchart of milk processing, Reception, Different types of cooling systems. Clarification and filtration process, standardization- Pearson's square method, pasteurization-LTLT, HTST and UHT process- continuous pasteurizer, Sterilization and Homogenization, Cream separation- centrifugal cream separator, bactofugation. Spray drying.

Unit III: Special milks, Indigenous and Fermented milk products **12 hours**

Skim milk, evaporated milk, condensed milk, standardized milk, toned milk, double toned milk, flavoured milk, reconstituted milk. Product description, methods for manufacture of butter, cheese, ice cream, khoa, channa, paneer, shrikhand, ghee. Spray drying system: dried milk- whole milk and Skim milk powder. Instantization of milk.

Unit IV: Equipment in Dairy Industry **12 hours**

Basic principles of Machinery, in Dairy industry – Operation and Operational procedures

Unit V: Food safety and sanitation in Dairy industry **12 hours**

Sanitary requirements for equipment's, guidelines for cleaning equipment, cleaning procedures, pest control, water supply, storage and waste disposal, environmental pollution, Waste management. By products in waste management, solid and liquid waste management.

References

1. Y.H.Hui, (2005), "Handbook of Food Science, Technology and Engineering" (vol.1-4), Marcel Dekker Publishers.
2. Food Science by N.N. Potter, CBS publishing.
3. H.Pandey, H.K. Sharma, R.C.Chouhan, B.C. Sarkar and M.C. Bera, (2004),"Experiments in Food Process Engineering", CBS Publishers and Distributors.
4. R.P.Singh and D.R.Heldman, (2001), "Introduction to Food E
5. gineering", 3rd ed.,
6. Albert Ibarz, Cannovas, G.V. Unit Operations in Food Engineering. CRC Press.2003. 7. J.M. Coulson, J.F. Richardson, J.H. Harker - Coulson & Richardson's
7. Chemical Engineering - Vol 2 Particle Technology and Separation Processes, Fifth Edition, 2002. Butterworth & Heinemann - Elsevier science Ltd.
8. Aneja RP, Mathur BN, Chandhan RC & Banerjee AK. 2002. Technology of Indian Milk Products.Dairy India Publ., Delhi.
9. Robinson, R. K., (2012), "Modern Dairy Technology: Volume 2 Advances in Milk Products", Springer Science & Business Media Publishers
10. Alan H. Varnam, (2012), "Milk and Milk Products: Technology, chemistry and microbiology", Springer Science & Business Media Publishers.

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SKILL COMPONENT
Practical Paper-II: DAIRY TECHNOLOGY

Credits: 02 **Total hours: 30**

1. Determination of density and specific gravity of milk using pycnometer, hydrometer and lactometer.
2. Determination of total solids and solids not fat in milk.
3. Determination of casein, whey proteins and NPN in milk.
4. Estimation of alkaline phosphatase and lipase in milk.
5. Determination of lactose in milk.
6. Adulteration in milk and milk products
7. Estimation of P^H of milk
8. Determination of fat by Gerber method
9. Preparations of ice-cream,khoa, khalakand and other milk products
10. Industrial visit to Dairy industries

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SKILL COMPONENT

Core Paper-III: TECHNOLOGY OF FRUITS AND VEGETABLES

Total Credits: 04 **Total hours: 60**

Learning Outcomes:

- To know about the status of fruit and vegetable production in India with importance to losses.
- To study about the processing of fruits and vegetables
- To impart knowledge about the various products from them.
- To study the various methods of preservation of fruits and vegetables

Syllabus:

Unit I: Introduction **12 hours**

Composition and nutritive value of fruits and vegetable. Factors effecting composition and quality of fruits and vegetables. Quality requirements of raw materials for processing; sourcing and receiving at processing plants, primary processing: grading, sorting, cleaning, washing, peeling, slicing and blanching

Unit II: **Manufacture of Fruit products** **12 hours**

Manufacturing process of juice, soup, puree, and paste. Jams, Jellies and marmalades: selection, preparation, production. Difference between jam and jelly. Theory of jell formation, failure and remedies in jam and jelly making. General principles and manufacturing processes of preserves, candied fruits, glazed fruits, crystallized fruits Manufacture of vegetable products- sauce, ketchup, vegetable juices and concentrated products

Unit III: Spoilage of fruits and vegetables **12 hours**

Different types of spoilages in fruits and vegetables. Spoilage during storage of fruits and vegetables and their prevention.General methods of preservation of whole fruits/vegetables and processed fruits andvegetables. Spoilage of pickles. Methods of preparation, curing techniques, defects and remedies. Types of preservatives commonly used in Fruits and vegetables processing industry, limits of usage of preservatives.

Unit IV: Processing and Preservation of fruits and vegetables **12 hours**

Dehydration of fruits and vegetables - sun drying, solar drying (natural and forced convection), osmotic, tunnel drying, fluidized bed drying, freeze drying, convectional and adiabatic drying; applications to raisins, dried figs, vegetables, intermediate moisture fruits and vegetables. Fruit powders using spray drying. Pre-packaging of fresh fruits and vegetables.

Storage techniques for fresh fruits and vegetables. Preparation of preserve and candied fruits, Pickling of fruits and vegetables. Waste management in fruits and vegetable processing units

Unit V: Equipment of fruits and vegetables industry, Sanitation and Hygiene **12 hours**

Basic principles of Machinery, in Fruits and vegetables industry – Operation and Operational procedures

Reference

1. Nirmal Sinha, Y. H. Hui, et al; (2010), "Handbook of Vegetables and Vegetable
2. Processing", John Wiley & Sons. 2. Olga Martin-Belloso, Robert SolivaFortuny, (2010), "Advances in Fresh-Cut Fruits and Vegetables Processing". CRC Press.
3. W Jongen (2002), "Fruit and Vegetable Processing: Improving Quality", Elsevier Publications. 4.
4. Food Science by S. Manay, New Age International (P) ltd. Publications
5. Food Science by N.N. Potter, CBS publishing.
6. Salunkhe DK, Bolia HR & Reddy NR. 1991. Storage, Processing and Nutritional Quality of Fruits and Vegetables. Vol. I. Fruits and Vegetables. CRC. 6. Thompson AK. 1995.
7. Post-Harvest Technology of Fruits and Vegetables. Blackwell Sci. 7. Verma LR. & Joshi VK. 2000. Post-Harvest Technology of Fruits and Vegetables. Indus Publ.

SRI VENKATESWARA UNIVERSITY :: TIRUPATI
B.VOC. DEGREE COURSE IN FOOD PROCESSING TECHNOLOGY

FIRST YEAR – SECOND SEMESTER
Under CBCS W.E.F. 2020-21

SKILL COMPONENT
Practical Paper-III: TECHNOLOGY OF FRUITS AND VEGETABLES

Credits: 02 **Total hours: 30**

1. Market Survey for available Fruits & Vegetables at Local markets
2. Fruits and Vegetables maturity indexes at post harvesting stages
3. Physico-chemical and biological changes in fruits and vegetables
4. Market survey for Fruit and Vegetable processed products
5. Identifying the Preservatives used in Fruits and Vegetable processing
6. Preparation of fruit products
7. Traditional methods drying fruits and vegetables
8. Preparation of vegetable products.
9. Visit to ripening and packing houses
10. Visit to Fruits and Vegetable Processing Industry

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FIRST YEAR – SECOND SEMESTER
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INDUSTRIAL INTERNSHIP

Industrial Training for 30 days

Total Credits	Total hours / week	Total hour / semester
03	36	144

1. **Industrial Training for 30 days**

   30 days of internship to provide industrial exposure to the students through internship with various food processing industries to develop good practical knowledge beyond the classroom experience.

2. **Report writing.**

3. **Seminar presentation**

SRI VENKATESWARA UNIVERSITY :: TIRUPATI
B.VOC. EXAMNATION IN FOOD PROCESSING TECHNOLOGY

FIRST YEAR – SECOND SEMESTER
Under CBCS W.E.F. 2020-21

CORE PAPERS - I, II & III
MODEL QUESTION PAPER

Time: 3 hours **Marks: 75**

SECTION – A

Answer **ALL** of the following **5X2=10Marks**

1.

2.

3.

4.

5.

SECTION – B

Answer any **THREE** of the following **3X5=15Marks**

6.

7.

8.

9.

10.

SECTION – C

Answer **ALL** of the following **5X10=50Marks**

11. A
(or)
B

12. A
(or)
B

13. A
(or)
B

14. A
(or)
B

15. A
(or)
B