



PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)

OUTLINES OF TESTS SYLLABI AND COURSES OF READING

FOR

Bachelor of Vocation (Food Processing and Preservation)

Session 2017-18

(1st to 4th Semester)

***Refer to Generic Components Common to all B.Voc. Courses**

**** Summer Industrial Training of 4-6 weeks in a relevant Industry after 2nd Semester**

Job Role:---

Semester I

Code	Skill Component	Job Description
FPP103	Baking Confectionary	Baking Technician: responsible for the production and maintenance of bakery products.
FPP 104	Dairy Technology	Dairy Technologist: responsible for the production and processing of dairy products.
FPP105	Food Quality Assurance	Food quality assurance manager: responsible for the implementation and maintenance of food quality assurance systems.

Semester II

Code	Skill Component	Job Role
FPP 203	Food Packaging Technology	Food Packaging technician: responsible for the production and maintenance of food packaging materials.
FPP 204	Instrumentation and Control	Responsible for the operation and maintenance of instrumentation and control systems.
FPP 205	Food Plant Layout	Food Plant layout officer: responsible for the design and layout of food processing plants.

***Refer to Generic Components Common to all B.Voc. Courses**

Job Role:-----

Semester III

Code	Skill Component	Job role
FPP-T- 303	Food Fermentation Beverages	Fermentation microbiologists work in a laboratory as an application specialist for the study of fermentation processes of food and beverages. Develop and provide professional services and research on food products.
FPP –T-304	Dairy Food Development	Dairy scientist Analyze milk quality test dairy products test and evaluate nutritional
FPP-T- 305	Ultrafiltration process	working with special strains of microorganisms and developing new supplements and nutrients to provide overall health and wellness products.

Semester IV

Code	Skill Component	Job role
FPP-T- 303	Food Processing	work in a factory or plant at production of food products.
FPP –T-304	Food Engineering	Food engineers use their knowledge to process and preserve food products. They work on national and international standards and ensure food safety and quality.
FPP-T- 305	Food Packaging	work in a factory or plant at production of food packaging.

Semester I

Text books/ References

- A a s an oss l Foo /ro o q an a u /n q /orporat on w D /n E ton
- Fras r Foo /ro o q ata /Graw H E u/at on
- Ba r I tu nt an oo an pra/t/a anua pu / CB E
- rna nta Con /t onar an / Art o Ba n a ts Bran /s H r an Hu q
- Br a A a r s oo o t /n qu s an r /p s J r Ha an
- A pro s s on a t to a r an /on /t onar J n n s

Practical based on FPP103

Time: 3 hours

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- > F u n ustr J Han rson A I u ng Co pan A
- > H n n pro u/it on pro/ ss ng an str ut on FA u at on

Practical based on FPP 104

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- > a p ng o an pro u/its or /ro o o /a ana s s
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- > s t an stu a n ar un on' a r an pr par a / / st o pro s n pro/ur nt an str ut on
- > J l l n u u n a n l s l / a onn l a r l / r / t l a on

FPP105: FOOD QUALITY ASSURANCE

Job Role:-Food quality assurance manager o t r n an sta / pro/ ur s an stan ar s or
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oo pro u/ ts pro u/ t stan ar s s t o / / on an at on an r / u ator au/ or t s

Course Objectives

- o un r stan / r nt pr n/ p s o oo qua t / ontro
- o ass ss / oo qua t assuran/ o a r pro u/ ts

Instructions for paper setters

- / s a us o / s pap r/ as n v nto our un ts
- E a n r w s t a tota n n qu st ons / o pr s ng two qu st ons ro a/ un t
an on / o pu sor qu st on o / ort answ r t p / ov r ng / w o s a us
- / stu nts ar r qu r to att pt on qu st on ro a/
- A qu st ons / arr qua ar s

Unit 1

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qua t assuran/ qua t / ontro an ass ss nt n oo at r a s us n a ng n ustr an
n / a r pro u/ ts

Unit II

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Unit III

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prosp / ts ro o var ous nat ona an nt rnat ona / n/ s

Unit IV

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/ onst tu nts o a r pro u/ ts

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an nstru nta ana s s n qua t / ontro

Practical based on FPP 105

- In quibus quaeritur assensum non esse in natura et processum
1. In intentione rationis operum productum
In intentione rationis operum productum
- Insorsio operum assensum quaeritur assensum non esse in natura et processum
a. r. productum
5. Instrumta operum assensum quaeritur assensum non esse in natura et processum
productum a. r. productum
- In quo operum assensum non esse in natura et processum
- Doctrinae operum assensum non esse in natura et processum
n. ustr.

Text books/ References

- Intra Assensum Operum Assensum non esse in natura et processum
- Intra Assensum Operum Assensum non esse in natura et processum
Approach C C r ss

Semester II

FPP 203: FOOD PACKAGING TECHNOLOGY

Job Role:-Food Packaging technician: performs various packaging operations and handles a variety of products to packaging materials and processes.

Course Objective:

enable students to understand about packaging and packaging materials.

Instructions for paper setters

- This is a set of papers given to our students.
- Each row is a total of 10 questions, 5 per side, two questions on each side and 10 questions on the other side of the page.
- Students are required to attempt questions on each side.
- All questions are compulsory.

Unit I

Introduction to Food Packaging. Functions of Packaging. Environmental factors on quality.

Estimation of anaerobic storage requirement for airtight storage. Inert Gas packaging. Storing of packaging materials. Analytical methods for determining water vapor transmission rate.

Unit II

Types of Cans and their applications. Properties of Cans. Airtightness. Atmospheric pressure. Atmospheric pressure. Atmospheric pressure. Atmospheric pressure.

Introduction to Canning operations. Canning of Fruits and Vegetables. Canning of Meats and Poultry. Canning of Dairy products. Canning of Beverages.

Unit III

Food Preservation. Factors affecting food preservation. Methods of food preservation.

Properties of different types of containers. Materials used in the manufacture of containers. Design of containers. Corrugated cardboard packaging.

Unit IV

Fingering and articulation for various passages

FPP204: INDUSTRIAL SAFETY, HAZARDS & PREVENTION

Job Role:- o va uat va u s o n u s t r a s a t a n t

Is r s p o n s o r o n t o r n g a n a s s s n g a a r o u s a a r o u s a n u n s a s t u a t o n s a n v o p n g a s u r s t o a s s u r w o r r s a t

Course Objectives

- o / r a t a w a r n s s a o u t a a a a r s o n u s t r a s u s t a n s
- o v a u a t r o v a u o n u s t r a n a n s a t

Instructions for paper setters

- s a u s o s p a p r a s n v n t o o u r u n t s
- E a n r w s t a t o t a o n n q u s t o n s o p r s n g t w o q u s t o n s r o a u n t a n o n o p u s o r q u s t o n o f o r t a n s w r t p o v r n g w o s a u s
- s t u n t s a r r q u r t o a t t p t o n q u s t o n r o a
- A q u s t o n s a r r q u a a r s

- Craw D.A. An ouv r J.A. l G /à ro/ss a t Fun a nta s ..
- App /at ons r nt / Ha
- l - nt C.A l - a t H a / An Env ron nta rot /t on /Graw H
- / BD l - D s n Equ r u tat ro/ss /Graw H

Practical based on FPP 204

Time: 3 hours

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- l - / o s o st r at on an pr parat on o a
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- Enu rat on an so at on o a /t r a an un ro wat r an /onta nat oo
- l - D onstrat on o r nt sa t asp /ts an a nt nan / o at r a sa t ata / ts
- o ow n oo n ustr

FPP205: FOOD PLANT LAYOUT

Job Role:-Food Plant layout officer: analysing and preparing layout plans to assist in the design and construction of food plants.

Course objective:

- Enable students to assist in the design of a food plant.
- Develop the student's ability to analyse and prepare layout plans for food plants.

Instructions for paper setters

- The student should be able to assist in the design of a food plant.
- The student should be able to assist in the design of a food plant.
- The student should be able to assist in the design of a food plant.
- The student should be able to assist in the design of a food plant.

Unit I

Basic concepts of food plant layout and design. Introduction to food plant layout design. Food plant layout design. Food plant layout design. Food plant layout design.

Semester III

GC-302 E-COMMERCE

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porulation & re-nat on- I portan/ o spor s n oo s I portan/ o str ss a apt /ro s
n oo

Unit III

Beneficial role of microbes in food Fer ntat on pro/ ss Bat/ /ont nuous an at/
t p s an /n /an/

Fermented Food: v / ta s ar pro u/ ts at pou tr an / pro u/ ts Co/ oa /o
wn ran / r/ a/ n ts Con/ pt an app /at on o pr ot /s an pro ot /s

Unit IV

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spo a/ a/ t r a n raw an past ur oo s /ann oo s so t r n s a

FPP-304: Food analysis: Tools and Techniques

Total Marks:50

Theory: 40

Internal:10

Job Role:-Dairy scientist Analyzing milk quality testing dairy products and
Evaluating nutrition

Course Objectives

Enable students to understand properties and functions of various

Unit-III

Techniques in food analysis -II:

Control and treatment of food for safety and quality assurance
Instruments and methods for analysis of food

Unit-IV

Advanced lab equipments and their application in food analysis: Gas chromatography

HPLC, GC, AAS, Atomic absorption spectroscopy, EIA, C and C
and their applications

Practical based on FPP-304

Total marks: 50

Practical: 40

FPP-305: Documentation and Record Keeping

Total marks: 50

Theory: 40

Internal: 10

Job Role: - to provide a framework for the development of new products and services to the organization.

Course Objectives

- 1. To enable students to understand the concepts of nutrition and its importance.
- 2. To enable students to understand the importance of food and its role in health.

Instructions to paper setters

- 1. The questions should be set in a way that covers the entire syllabus.
- 2. The questions should be set in a way that is fair and equitable to all students.
- 3. The questions should be set in a way that is relevant to the current industry practices.
- 4. The questions should be set in a way that is challenging and tests the students' understanding of the subject.

UNIT I

Documents and records: Documents and records are essential for the organization to maintain its operations and to provide a clear and concise record of its activities. Documents and records are also essential for the organization to comply with the relevant laws and regulations. Documents and records are also essential for the organization to improve its performance and to identify areas for improvement.

UNIT II tud/R10 1(e)4 (s)-21(y)20(l)-2(4na)4(bl l)-2(4na)43(m)-3.96679

Practical based on FPP-305

Total marks: 50

Practical: 40

Internal: 10

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- < s a s s s n t n o u r a o r a t o r a n r p o r t a n t n a n / s <
- < p o r t p r p a r a t o n o r o n n E n / o g a n a t o n <
- < t u o q u p n t a n u a s <

FPP-403: Essentials of Food Hygiene

Total marks: 50

Practical: 40

Int

Total marks: 50
Practical: 40
Internal: 10

Toxigenic Fungi and mycotoxins: *Aspergillus* and *Fusarium* are associated with various food safety concerns. Control of mycotoxins in food.

Bacterial toxins: Enterotoxins and enterohemorrhagic toxins are associated with food safety. **Methods to control foodborne diseases outbreaks**

Practical based on FPP 404

Total marks: 50
Practical: 40
Internal: 10

- Analysis of mycotoxins in ungerminated and germinated rice
- Rapid test for aflatoxin in rice
- Determination of aflatoxin B₁ in rice
- Determination of aflatoxin G₁ in rice
- Control of aflatoxin production in rice

FPP--405: Food Safety Standards and Regulations

Objective: - o a f stu nts /on/ rsant w f at st ru s an r g u at on n Foo sa t as p r F Al g u n s sp / a a n g w f wor p a /

Total Marks: 50

Theory: 40

Internal:10

UNIT I

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Overview of Food Safety and Standards Act, 2006 : a nt atur s o Foo a t tan ar s A/ t l f , for asp /ts o f a/ t w prov s ons f , for v at ons ro f st n g r g u at ons an f p /at ons o G ang w Con/ pts an f r g a p /at ons

UNIT II

Food safety and Standards (Licensing and Registration of Food businesses) regulation, 2011:

Salient feature of schedule 1, 2, 3

Salient feature of schedule 4 G n ra H g n /an an tar pra/ t/ s to o ow Foo Bus n ss op rators

art 1 G n ra H g n /an an tar ra/ t/ s to o ow tt Foo Bus n ss p rators

art II G n ra qu r nts on H g n /an an tar ra/ t/ s to o ow a Foo Bus n ss p rators

A III p / / H g n /an an tar ra/ t/ s to o ow Foo Bus n ss p rators n g a n anu a/ tur pro/ s s n g stor n g an s n g o , an , ro u/ ts

A I , p / / H g n /an an tar ra/ t/ s to o ow Foo Bus n ss p rators n g a n anu a/ tur pro/ s s n g stor n g an s n g o , at an , at ro u/ ts

art 5 p / / H g n /an an tar ra/ t/ s to o ow ra/ t/ s to o ow Foo Bus n ss p rators n g a n /at r n g | oo s rv / sta f nts

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UNIT III