



विवेकानन्द कॉलेज
VIVEKANANDA COLLEGE
(दिल्ली विश्वविद्यालय)
(UNIVERSITY OF DELHI)
विवेक विहार, दिल्ली-110095
VIVEK VIHAR, DELHI-110095
GRADE 'A' ACCREDITED By NAAC

VIVEKANANDA COLLEGE UNIVERSITY OF DELHI

SUPPORTING DOCUMENTS FOR 1.3.2

Whether the COURSE includes experiential learning through PROJECT WORK/FIELD WORK/INTERNSHIP during the year (Code 1.3.2)

S. No.	Name of the courses	Page no.
1	Financial Literacy	1 - 8
2	Personal Financial Planning	9 - 17
3	Finance for Everyone	18 - 24
4	Basic Computational Techniques for data Analysis	25 - 28
5	Research Methodology	29 - 31
6	Advance Baking Technology	32 -35
7	Food Safety Hygiene and Quality testing	36 - 39
8	DSC FT-3(Basic Baking Technology)	40 - 44
9	Introduction to Food Safety & Preservation	45 - 49
10	DSC FT-2 (Food Science :part -1)	50 - 52
11	DSC-1 FT (Basics in food and Nutrition)	53 - 54
12	VAC (Ayurveda and Nutrition)	55 - 57
13	Therapeutic Nutrition	58 - 64
14	Public Nutrition	65 - 67
15	Research Methodology in Home Science	68 - 70
16	Socio Economic Environment	71 - 77
17	Life Science	78 - 81

18	Physical Sciences	82
19	Nutritional Biochemistry	83
20	Food science	84 - 87
21	Home Based Catering	88 - 89
22	Fashion studies	90 - 93
23	Nutrition – A lifecycle Approach	94 - 98
24	Personal Finance and Consumer studies	99 - 104
25	Introduction to Textile Sciences	105 - 109
26	Communication system and Mass Media	110 - 113
27	Food science and Nutrition	114 - 116
28	Human development 1:The Early years	117 - 118
29	Communication concept and Theories	119 - 121
30	Applied Social Psychology	122 - 124
31	Counselling Psychology	125
32	Understanding Psychological Disorders -1	126 - 127
33	Foundation of Industrial Organizational Psychology-1	128
34	Understanding Psychological Disorders - II	129 - 130

Proofs 1.3.2

Syllabus of the courses

1. Financial Literacy

UNIVERSITY OF DELHI

CNC-II/093/1(22)/2022-23/ 197

Dated: 14.09.2022

NOTIFICATION

Sub: Amendment to Ordinance V

[E.C Resolution No. 18-1-20 dated 18.08.2022]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

**VALUE ADDITION COURSES (SECs)
UNDER
UGC-F-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

In pursuance of the objectives outlined in the National Education Policy 2020, the Value Addition Courses (VACs) seek to fulfil the mandate of providing holistic education to the students. As the NEP elucidates, "the purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values." The Value Addition Courses will introduce students to the rich heritage of the nation as well as to important social concerns of the current times, helping them to make connections between what they learn and how they live.

The courses have a sound theoretical base as well as appropriate hands-on components. At the same time, they clearly set out measurable and attainable Learning Outcomes. Knowledge, in essence, being integrated, these courses are essentially multidisciplinary in nature.

Designed to ignite the intellectual curiosity of the learners, the Value Addition courses will inspire and guide them in their journey of personal and professional development making them thoughtful, well-rounded, and creative individuals, with a sense of service and responsibility towards the Nation.

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Value Addition Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

SL.NO.	COURSE TITLE	TOTAL CREDITS: 2
1	Ayurveda and Nutrition	
2	Constitutional Values and Fundamental Duties	
3	Culture and Communication	
4	Digital Empowerment	
5	Emotional Intelligence	
6	Ethics and Culture	
7	Ethics and Values in Ancient Indian Traditions	
8	Financial Literacy	
9	Fit India	
10	Gandhi and Education	
11	Language and Literature	
12	National Cadet Corps-I	
13	Panchkosha: Holistic Development of Personality	
14	Reading Indian Fiction in English	
15	Science and Society	
16	Social and Emotional Learning	
17	Sports for Life-I	
18	Swachh Bharat	
19	The Art of Being Happy	
20	Vedic Mathematics-I	
21	Yoga: Philosophy and Practice	

**VALUE ADDITION COURSES (SECs)
UNDER
UGCF-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

In pursuance of the objectives outlined in the National Education Policy 2020, the Value Addition Courses (VACs) seek to fulfil the mandate of providing holistic education to students. As per the NEP elucidates, "the purpose of the education system is to develop good human beings who are capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values." The Value Addition Courses will introduce students to the rich heritage of the nation as well as to important social concerns of the current times, helping them to make connections between what they learn and how they live.

2/90

The courses have a sound theoretical base as well as appropriate hands-on components. At the same time, they clearly set out measurable and attainable Learning Outcomes. Knowledge, in essence, being integrated, these courses are essentially multidisciplinary in nature.

Designed to ignite the intellectual curiosity of the learners, the Value Addition courses will inspire and guide them in their journey of personal and professional development making them thoughtful, well-rounded, and creative individuals, with a sense of service and responsibility towards the Nation.

✓

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Value Addition Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

SL.NO.	COURSE TITLE	TOTAL CREDITS: 2
1	Ayurveda and Nutrition	
2	Constitutional Values and Fundamental Duties	
3	Culture and Communication	
4	Digital Empowerment	
5	Emotional Intelligence	
6	Ethics and Culture	
7	Ethics and Values in Ancient Indian Traditions	
8	Financial Literacy	
9	Fit India	
10	Gandhi and Education	
11	Language and Literature	
12	National Cadet Corps-I	
13	Panchkosha: Holistic Development of Personality	
14	Reading Indian Fiction in English	
15	Science and Society	
16	Social and Emotional Learning	
17	Sports for Life-I	
18	Swachh Bharat	
19	The Art of Being Happy	
20	Vedic Mathematics-I	
21	Yoga: Philosophy and Practice	
22	भारतीय भक्ति : परम्परा और मानव मूल्य	
23	साहित्य संस्कृति और सिनेमा	
24	सृजनात्मक लेख के आयाम	



VAC 1: FINANCIAL LITERACY**Credit distribution, Eligibility and Pre-requisites of the Course**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Financial Literacy	02	1	0	1	Pass in Class 12 th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- Familiarity with different aspects of financial literacy such as savings, investment, taxation, and insurance
- Understand the relevance and process of financial planning
- Promote financial well-being

Learning outcomes

The Learning Outcomes of this course are as follows:

- Develop proficiency for personal and family financial planning
- Apply the concept of investment planning
- Ability to analyse banking and insurance products
- Personal tax planning

SYLLABUS OF FINANCIAL LITERACY**UNIT – I Financial Planning and Financial Products (3 Weeks)**

- Introduction to Saving
- Time value of money
- Management of spending and financial discipline

UNIT – II Banking and Digital Payment (4 Weeks)

- Banking products and services

- Digitisation of financial transactions: Debit Cards (ATM Cards) and Credit Cards., Net banking and UPI, digital wallets
- Security and precautions against Ponzi schemes and online frauds

UNIT – III Investment Planning and Management (4 Weeks)

- Investment opportunity and financial products
- Insurance Planning: Life and non-life including medical insurance schemes

UNIT – IV Personal Tax (4 Weeks)

- Introduction to basic Tax Structure in India for personal taxation
- Aspects of Personal tax planning
- Exemptions and deductions for individuals
- e-filing

Note: Some of the theoretical concepts would be dealt with during practice hours.

Practical component (if any) – (15 Weeks)

- Regular class activities to enhance students' understanding of topics and the application of concepts. The case study method may be followed as a teaching pedagogy.
- Numerical questions pertaining to each unit wherever applicable should be practiced.
- For the second unit, students may be assigned a project wherein they can log on to the website of various banks and conduct an in-depth analysis and comparison of various financial products offered.
- For Unit III, a Project related to building a dummy portfolio of stocks and tracking their returns may be given.
- An investment budget may be given to the students to select investment options that maximize the return and minimize the tax implications.
- For the last unit, students may also file a dummy IT return to get hands-on experience with e-filing.
- Students may conduct a financial literacy survey among at least 25 respondents to measure the level of financial literacy and share the findings in the awareness in the form of a report.
- Any other Practical/Practice as decided from time to time

- Digitisation of financial transactions: Debit Cards (ATM Cards) and Credit Cards., Net banking and UPI, digital wallets
- Security and precautions against Ponzi schemes and online frauds

UNIT – III Investment Planning and Management (4 Weeks)

- Investment opportunity and financial products
- Insurance Planning: Life and non-life including medical insurance schemes

UNIT – IV Personal Tax (4 Weeks)

- Introduction to basic Tax Structure in India for personal taxation
- Aspects of Personal tax planning
- Exemptions and deductions for individuals
- e-filing

Note: Some of the theoretical concepts would be dealt with during practice hours.

Practical component (if any) – (15 Weeks)

- Regular class activities to enhance students' understanding of topics and the application of concepts. The case study method may be followed as a teaching pedagogy.
- Numerical questions pertaining to each unit wherever applicable should be practiced.
- For the second unit, students may be assigned a project wherein they visit the website of various banks and conduct an in-depth analysis and compare various financial products offered.
- For Unit III, a Project related to building a dummy portfolio of stocks and tracking their returns may be given.
- An investment budget may be given to the students to select investment options that maximize the return and minimize the tax implications.
- For the last unit, students may also file a dummy IT return to get hands-on experience with e-filing.
- Students may conduct a financial literacy survey among at least 25 respondents to measure the level of financial literacy and share the findings in the awareness in the form of a report.
- Any other Practical/Practice as decided from time to time

27/90

Essential/recommended readings

- Introduction to Financial Planning (4th Edition 2017) – Indian Institute of Banking



& Finance.

- Sinha, Madhu. Financial Planning: A Ready Reckoner July 2017, McGraw Hill.

Suggested readings

- Halan, Monika, Lets Talk Money: You've Worked Hard for It, Now Make It Work for You, July 2018 Harper Business.
- Pandit, Amar The Only Financial Planning Book that You Will Ever Need , Network 18 Publications Ltd.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



2. Personal Financial Planning

UNIVERSITY OF DELHI

CNC-II/093/1(22)/2022-23/198

Dated: 06.09.2022

NOTIFICATION

Sub: Amendment to Ordinance V

[E.C Resolution No. 18-1-21 dated 18.08.2022]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

**SKILL ENHANCEMENT COURSES (SECS)
UNDER
UGCF-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

The NEP 2020 envisages imparting life skills as well as technical and professional skills as part of holistic education. University of Delhi has prepared various Skill Enhancement Courses in different domains to provide kinds of skills to the students, such as Communication Skills, Computer related skills, Coding skills, financial management skills, etc. with higher degree of hands on learning so as to equip them with the skills of their choice suitable to the academic path they choose.

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

SL.NO.	COURSE TITLE	TOTAL CREDITS: 2
1	Advanced Spreadsheets Tools	
2	Analytics/ Computing With Python	
3	APP Development using Flutter	
4	Back-End Web Development	
5	Basic IT Tools	

6	Big Data Analytics
7	Beginners Course to Calligraphy
8	Business Communication
9	Business Intelligence and Data Visualisation
10	CAD for Fashion
11	Communication in Everyday Life
12	Communication in Professional Life
13	Creative Writing
14	Cyber Sphere and Security : Global Concern
15	Developing sustainability plans for a business
16	Digital Film Production
17	Digital Marketing
18	Essentials of Python
19	E-Tourism
20	Finance for Everyone
21	Financial Database and Analysis Software
22	Front End Web Design and Development
23	Graphics Design & Animation
24	Harmonium
25	Introduction to Arabic Calligraphy
26	Introduction to Blockchain
27	Introduction to Cloud Computing (AWS)
28	Negotiations and Leadership
29	Personal Financial Planning
30	Personality Development and Communication
31	Political Leadership and Communication
32	Programing with Python
33	Prospecting E-Waste for Sustainability
34	Public Speaking in English Language and Leadership
35	Statistical Software Package
36	Statistics with 'R'
37	Sustainable Ecotourism and Entrepreneurship
38	Visual Communication and Photography
39	पटकथा लेखन
40	रंगमंच
41	रचनात्मक लेखन



ADVANCED SPREADSHEETS TOOLS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Advanced Spreadsheets Tools	2	0	0	2	12 th Pass	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students to use Excel for advanced data analysis
- To equip the students to with automation skills on excel
- To enable the students to use excel for informed decision making

Personal Financial Planning

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Personal Financial Planning	2	1	0	1	12 th Pass	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with different aspects of personal financial planning like savings, investment, taxation, insurance, and retirement planning
- To develop the necessary knowledge and skills for effective financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the meaning and appreciate the relevance of financial planning.
- After studying this course, students will be able to understand the concept of investment planning and its methods.
- After studying this course, students will be able to examine the scope and ways of personal tax planning.
- After studying this course, students will be able to analyse insurance planning and its relevance.
- After studying this course, students will be able to develop insight into retirement planning and its relevance.

SYLLABUS

Unit 1: Introduction to Financial Planning: (3 weeks)

Financial goals, steps in financial planning, budgeting incomes and payments, time value of money. Introduction to savings, benefits of savings, management of spending & financial discipline, Setting alerts and maintaining sufficient funds for fixed commitments.

Unit 2: Investment Planning: (3 weeks)

Process and objectives of investment, concept and measurement of return & risk for various asset classes, measurement of portfolio risk and return, diversification & portfolio formation. Gold bond; Real estate; Investment in greenfield and brownfield Projects; Investment in fixed income instruments, financial derivatives & commodity market in India. Mutual fund schemes; International investment avenues. Currency derivatives and digital currency.

Unit 3: Personal Tax Planning: (3 weeks)

Tax structure in India for personal taxation, Scope of personal tax planning, exemptions and deductions available to individuals under different heads of income and gross total income. Comparison of benefits - Special provision u/s 115 BAC vis-à-vis General provisions of the Income-tax Act, 1961, tax avoidance versus tax evasion.

Unit 4: Insurance Planning: (3 weeks)

Need for insurance. Life insurance, health insurance, property insurance, credit life insurance and professional liability insurance.

Unit 5: Retirement Benefits Planning: (3 weeks)

Retirement planning goals, process of retirement planning, Pension plans available in India, Reverse mortgage, Estate planning.

SYLLABUS

Unit 1: Introduction to Financial Planning: (3 weeks)

Financial goals, steps in financial planning, budgeting incomes and payments, time value of money. Introduction to savings, benefits of savings, management of spending & financial discipline, Setting alerts and maintaining sufficient funds for fixed commitments.

Unit 2: Investment Planning: (3 weeks)

Process and objectives of investment, concept and measurement of return & risk for various asset classes, measurement of portfolio risk and return, diversification & portfolio formation. Gold bond; Real estate; Investment in greenfield and brownfield Projects; Investment in fixed income instruments, financial derivatives & commodity market in India. Mutual fund schemes; International investment avenues. Currency derivatives and digital currency.

Unit 3: Personal Tax Planning: (3 weeks)

Tax structure in India for personal taxation, Scope of personal tax planning, exemptions and deductions available to individuals under different heads of income and gross total income. Comparison of benefits - Special provision u/s 115 BAC vis-à-vis General provisions of the Income-tax Act, 1961, tax avoidance versus tax evasion.

Unit 4: Insurance Planning: (3 weeks)

Need for insurance. Life insurance, health insurance, property insurance, credit life insurance and professional liability insurance.

Unit 5: Retirement Benefits Planning: (3 weeks)

Retirement planning goals, process of retirement planning, Pension plans available in India, Reverse mortgage, Estate planning.

Practical Exercises: (15 Weeks)

The learners are required to:

- Perform electronic fund transfers through net banking and UPI.
- Identify certain recent Ponzi schemes in the market.
- Prepare tax planning for a hypothetical individual.

Suggested Readings:

- Halan, M. "Let's Talk Money: You've Worked Hard for It, Now Make It Work for You" Harper Collins Publishers, New York.
- Indian Institute of Banking & Finance. "Introduction to Financial Planning" Taxmann Publication, New Delhi.
- Keown A.J. "Personal Finance" Pearson, New York.
- Madura, J. "Personal Finance", Pearson
- Pandit, A. "The Only Financial Planning Book that You Will Ever Need" Network 18 Publications Ltd., Mumbai.
- Sinha, M. "Financial Planning: A Ready Reckoner" McGraw Hill Education, New York.
- Tripathi, V. "Fundamentals of Investment" Taxmann Publication, New Delhi.



Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



- Digitisation of financial transactions: Debit Cards (ATM Cards) and Credit Cards, Net banking and UPI, digital wallets
- Security and precautions against Ponzi schemes and online frauds

UNIT – III Investment Planning and Management (4 Weeks)

- Investment opportunity and financial products
- Insurance Planning: Life and non-life including medical insurance schemes

UNIT – IV Personal Tax (4 Weeks)

- Introduction to basic Tax Structure in India for personal taxation
- Aspects of Personal tax planning
- Exemptions and deductions for individuals
- e-filing

Note: Some of the theoretical concepts would be dealt with during practice hours.

Practical component (if any) – (15 Weeks)

- Regular class activities to enhance students' understanding of topics and the application of concepts. The case study method may be followed as a teaching pedagogy.
- Numerical questions pertaining to each unit wherever applicable should be practiced.
- For the second unit, students may be assigned a project wherein they visit the website of various banks and conduct an in-depth analysis and compare various financial products offered.
- For Unit III, a Project related to building a dummy portfolio of stocks and tracking their returns may be given.
- An investment budget may be given to the students to select investment options that maximize the return and minimize the tax implications.
- For the last unit, students may also file a dummy IT return to get hands-on experience with e-filing.
- Students may conduct a financial literacy survey among at least 25 respondents to measure the level of financial literacy and share the findings in the awareness in the form of a report.
- Any other Practical/Practice as decided from time to time

27/90

Essential/recommended readings

- Introduction to Financial Planning (4th Edition 2017) – Indian Institute of Banking

& Finance.

- Sinha, Madhu. Financial Planning: A Ready Reckoner July 2017, McGraw Hill.

Suggested readings

- Halan, Monika, Lets Talk Money: You've Worked Hard for It, Now Make It Work for You, July 2018 Harper Business.
- Pandit, Amar The Only Financial Planning Book that You Will Ever Need , Network 18 Publications Ltd.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



3. Finance for Everyone

UNIVERSITY OF DELHI

CNC-II/093/1(22)/2022-23/198

Dated: 06.09.2022

NOTIFICATION

Sub: Amendment to Ordinance V

[E.C Resolution No. 18-1-21 dated 18.08.2022]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

**SKILL ENHANCEMENT COURSES (SECS)
UNDER
UGC-F-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

The NEP 2020 envisages imparting life skills as well as technical and professional skills as part of holistic education. University of Delhi has prepared various Skill Enhancement Courses in different domains to provide kinds of skills to the students, such as Communication Skills, Computer related skills, Coding skills, financial management skills, etc. with higher degree of hands on learning so as to equip them with the skills of their choice suitable to the academic path they choose.

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

SL.NO.	COURSE TITLE	TOTAL CREDITS: 2
1	Advanced Spreadsheets Tools	
2	Analytics/ Computing With Python	
3	APP Development using Flutter	
4	Back-End Web Development	
5	Basic IT Tools	

6	Big Data Analytics
7	Beginners Course to Calligraphy
8	Business Communication
9	Business Intelligence and Data Visualisation
10	CAD for Fashion
11	Communication in Everyday Life
12	Communication in Professional Life
13	Creative Writing
14	Cyber Sphere and Security : Global Concern
15	Developing sustainability plans for a business
16	Digital Film Production
17	Digital Marketing
18	Essentials of Python
19	E-Tourism
20	Finance for Everyone
21	Financial Database and Analysis Software
22	Front End Web Design and Development
23	Graphics Design & Animation
24	Harmonium
25	Introduction to Arabic Calligraphy
26	Introduction to Blockchain
27	Introduction to Cloud Computing (AWS)
28	Negotiations and Leadership
29	Personal Financial Planning
30	Personality Development and Communication
31	Political Leadership and Communication
32	Programing with Python
33	Prospecting E-Waste for Sustainability
34	Public Speaking in English Language and Leadership
35	Statistical Software Package
36	Statistics with 'R'
37	Sustainable Ecotourism and Entrepreneurship
38	Visual Communication and Photography
39	पटकथा लेखन
40	रंगमंच
41	रचनात्मक लेखन



Finance for Everyone

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Finance for Everyone	2	1	0	1	12 th Pass	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer an integrated approach to the understanding of concepts and applications of financial planning.
- To help the students in their financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of financial literacy and the institutions providing financial services.
- After studying this course, students will be able to prepare a financial plan, budget and manage personal finances.
- After studying this course, students will be able to open, avail and manage services offered by banks.
- After studying this course, students will be able to open, avail and manage services offered by post offices.
- After studying this course, students will be able to plan for life insurance and property insurance.
- After studying this course, students will be able to choose instruments for investment in shares.



SYLLABUS

Unit 1: Introduction, Financial Planning and Budgeting

(3 weeks)

Meaning, importance and scope of financial literacy; Prerequisites of financial literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, post offices, mobile app based services. Need of availing of financial services from banks, insurance companies and postal services. Concept of economic wants and means for satisfying these needs; Balancing between economic wants and resources; Meaning, importance and need for financial planning; Personal budget, family budget, business budget and national budget; Procedure for financial planning and preparing a budget; Budget surplus and budget deficit, Avenues for savings from surplus, Sources for meeting the deficit.

Unit 2: Banking Services

(3 weeks)

Types of banks; Banking products and services – Various services offered by banks; Types of bank deposit accounts – savings bank account, term deposit, current account, recurring deposit; pan card, address proof, KYC norm; Various types of loans – education loan, consumer durable loan, vehicle loan, housing loan, short term, medium term, long term, microfinance, bank overdraft, cash credit, mortgage, reverse mortgage, hypothecation, pledge, Agricultural and related interest rates offered by various nationalized banks; Cashless banking, e-banking, check counterfeit currency; CIBIL, ATM, net banking, RTGS, NEFT, IMPS, electronic clearance services (ECS), debit and credit card, app based payment system, bank draft and pay order; banking complaints and ombudsman.

Unit 3: Financial Services from India Post Office

(3 weeks)

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme, sukanya samriddhi yojana; india post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, indian postal order.

Unit 4: Insurance Services

(3 weeks)

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

Unit 5: Stock Markets – Some Basic Concepts

(3 weeks)

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary initial public offering(IPO), follow-on public offering (FPO), offer for sale (deal, equity shares, preference shares, debentures, bonus shares, stock spl. buyback, DEMAT

51/112

account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

Practical Exercises:

(15 weeks)

The learners are required to:

- Visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure for availing of these services.
- Carry out the comparative analysis of different types of life insurance policies.
- Carry out the comparative analysis of different types of health insurance policies.
- Prepare a personal and family budget for one/six/ twelve months on imaginary figures.

Suggested Readings:

- Avadhani, V. A. "Investment Management" Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J.K., Accounting and Finance for Non-finance Managers, Sage Textbook
- Chandra, P. "Investment Game: How to Win" Tata McGraw Hill Education, New Delhi.
- Kothari, R. "Financial Services in India-Concept and Application" Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. "The Basics of Finance: Financial Tools for Non-Financial Managers" Universe Company, Indiana,
- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. "Financial Planning" Sage Publications India Pvt. Ltd., New Delhi.
- Zokaityte, A. "Financial Literacy Education" Palgrave Macmillan, London.

Note: Learners are advised to use the latest edition of readings.

bank draft and pay order; banking complaints and ombudsman.

Unit 3: Financial Services from India Post Office (3 weeks)

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme, sukanya samriddhi yojana; india post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, indian postal order.

Unit 4: Insurance Services (3 weeks)

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

Unit 5: Stock Markets – Some Basic Concepts (3 weeks)

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary markets, initial public offering (IPO), follow-on public offering (FPO), offer for sale (OFS), block deal, equity shares, preference shares, debentures, bonus shares, stock split, dividend, buyback, DEMAT

account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

Practical Exercises:

(15 weeks)

The learners are required to:

- Visit banks, post offices, and insurance companies to collect information required documents related to the services offered by these institutions and the procedure for availing of these services.
- Carry out the comparative analysis of different types of life insurance policies.
- Carry out the comparative analysis of different types of health insurance policies.
- Prepare a personal and family budget for one/six/ twelve months on imaginary figures.

52/112

Suggested Readings:

- Avadhani, V. A. "Investment Management" Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J.K., Accounting and Finance for Non-finance Managers, Sage Textbook
- Chandra, P. "Investment Game: How to Win" Tata McGraw Hill Education, New Delhi.
- Kothari, R. "Financial Services in India-Concept and Application" Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. "The Basics of Finance: Financial Tools for Non-Financial Managers" Universe Company, Indiana,
- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. "Financial Planning" Sage Publications India Pvt. Ltd., New Delhi.
- Zokaityte, A. "Financial Literacy Education" Palgrave Macmillan, London.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



4. Basic Computational Techniques for Data Analysis

Department of Economics
SEC IV (6th semester) for B.A. Program
BASIC COMPUTATIONAL TECHNIQUES FOR DATA ANALYSIS

Purpose / Objective of the paper:

The main purpose of this Skill Enhancement Course (SEC) in Economics is to provide B.A. Program students with hands-on experience in developing skills in statistical techniques involving computer applications. The course would enable students to become familiar with different data sources relating to various aspects of the economy, with estimation of simple relationship between economic variables, and with interpretation of the estimation results.

This course is an extension of the previous semester's course SEC: Data Analysis, which is a prerequisite for taking this course. This course develops computational skills based on the knowledge of Statistics developed in the previous semester. Along with the previous semester's SEC papers (i.e. 'Understanding the Economic Survey and the Union Budget', 'Research Methodology' and 'Data Analysis'), this course aims to equip students with the ability to undertake basic research projects pertaining to the Indian economy, which in turn, would prove helpful in a variety of professions.

Course outline:

Unit -I

Introduction to MS Excel: Spreadsheet basics and inputting of data, word processing and presentation of data using graphs and tables.

This unit should cover: (i) Inputting data; (ii) Selecting data; (iii) Multiplication, Division and Addition; (iv) Formatting Cells; (v) Hide/unhide columns; (vi) Sorting Data; (vii) Filtering Data; (viii) Freezing and Unfreezing Headers; (ix) AUTO SUM and SUMIF commands; (x) Using MAX, MIN, COUNT, COUNTIF and POWER command; (xi) Pivot Tables; (xii) Line Graph, Column Chart, Histogram, Pie Chart and Scatter Plot.

References: MS EXCEL 2010 manual (available free online), or other Excel manuals.

Unit - II

Review of (i) Measures of Central Tendency - Mean, Median and Mode; Arithmetic Mean, Geometric Mean and Harmonic Mean; (ii) Measures of Dispersion – Standard Deviation and Variance;

(iii) Skewness; (iv) Kurtosis.

Focus should be on computation techniques in MS Excel, and interpretation of numbers based on what has been covered in the BA Program Semester V SEC paper 'Data Analysis'.

References:

1. P.H. Karmel and M. Polasek (1978), Applied Statistics for Economists, 4th edition, Pitman

**UNIVERSITY OF DELHI
DELHI SCHOOL OF ECONOMICS
DEPARTMENT OF ECONOMICS**

Minutes of the Meeting

Subject: B.A. Program, SEC IV (6th Semester)
Course: BASIC COMPUTATIONAL TECHNIQUES FOR DATA ANALYSIS
Date of Meetings: 16th January 2020
Venue: Department of Economics, Delhi School of Economics,
University of Delhi
Chair: Prof. Sunil Kanwar

Attended by:

S.N	Name	College
1	Anita	Kalindi College
2	Renu Kumari Verma	Motilal Nehru College (E)
3	Joginder Singh	SSN
4	Vickey Mehriya	MAC
5	Sharad Ranjan	ZHC (E)
6	Amit Kr Jha	SVC
7	Abhishek Jaiswal	SPM
8	Rakhi Solanki	Sri Aurobindo College (M)
9	Nupur Kataria	Maitreyi College
10	Meenakshi Sinha Swami	Mata Sundri College
11	Anjali Agarwal	MLNC (E)
12	Sakshi Jindal	MSC
13	Aniruddha Prasad	PGDAV (M)

Decisions:

The teachers present decided to finalize the detailed syllabus given below:

2. M.R. Spiegel, L.J. Stephens and N. Kumar (2010), Statistics, 4th edition, Schaum Series, McGraw Hill

3. Dr. K. L. Dahiya, Adhyayan Samagri 1 (1-12), chapters 1 to 8, B.Com (H), 1st year, Vyavsaahik Sankhiki, Department of Commerce, Mukta Shiksha Parishad, Dilli Vishwavidhyalaya (Reference in HINDI)

4. MS EXCEL 2010 (available free online), and/or other excel manuals

Introduction to calculation of financial formulae: Net Present Value (NPV), Internal Rate of Return, Future Value, Equated Monthly Installment (EMI), Compound Growth Rate

c. Using spreadsheet to perform the above mathematical/statistical/financial functions

References:

Financial Management, Chapter 6; Investment Decisions, Chapter 7, Institute of Chartered Accountants of India study material.

Pamela Drake and Frank Fabozzi, 2009, Foundations and Applications of the Time Value of Money, John Wiley and Sons, Chapters 1, 2, 5, 9 (NOTE: This is a TEACHERS' REFERENCE)

MS EXCEL 2010 (available free online), and/or other excel manuals.

Unit III

Review of Correlation and Rank Correlation.

Introduction to simple Ordinary Least Squares (OLS) (i.e. only one explanatory variable); Testing hypotheses related to regression coefficients; Goodness of fit (R^2); Reporting the estimation results.

Focus should be on the use of MS Excel for the above computation techniques.

References::

1. P.H. Karmel and M. Polasek (1978), Applied Statistics for Economists, 4th edition, Pitman

2. M.R. Spiegel, L.J. Stephens and N. Kumar (2010), Statistics, 4th edition, Schaum Series, McGraw Hill

3. Coursera Lectures by Sharad Borle (available free on Coursera.org)

4. MS EXCEL 2010 (available free online), and/or other Excel manuals

5. Dr. K.L. Dahiya, Adhyayan Samagri 1 (1-12), Chapters 1 to 8, B.Com (H), 1st year, Vyavsaahik Sankhiki, Department of Commerce, Mukta Shiksha Parishad, Dilli Vishwavidhyalaya (HINDI)

Unit IV

Introduction to economic and business data sets available in the public domain, such as from the NSE, BSE, RBI, MOSPI, World Bank, UN, etc.

Any of these datasets may be used for demonstrating the statistical concepts studied in the course

Unit V

Preparation of a project report based on data available in the public domain, using concepts studied in units II and III.

Marking scheme:

Internal assessment of 25 marks, comprising: (a) 5 marks for attendance, (b) 10 marks for written test, (c) 10 marks for computer based test

End Semester assessment of 75 marks, comprising: (a) 25 marks for project to be submitted before the final exam, and (b) 50 marks for a written final exam

5. Research Methodology

Course: BA Prog. Semester-IV LOCF
Subject: SEC Research Methodology PS41

The following teachers attended the online meeting held on 03/01/2022 at 5.00 pm.

1. Bir Singh, DCAC
3. Nivedita Mullick, Gargi College
4. Nishtha Dhawan, KNC
5. Hema Nagpal, Sri Aurobindo College
6. Trisha Jolly, JDMC
7. Rakesh Kumar, Dyal Singh
8. Swati Malik, Rajdhani College
9. Renu Kumari Verma, Moti Lal Nehru College(Evening)
10. Padma Suresh, Sri Venkateswara College
11. Madhuri Singh, Kalindi College
12. Akshay Garg, PGDAV
13. Divya Singh, St. Stephen's College
14. Shweta Nanda, ARSD College

The matters relating to internal assessment and reference material for the course were discussed. It was decided and resolved to stick to the existing reading list for study material. It was also resolved that the scheme of internal assessment will comprise of assignments/class tests and a research project. The research project will be a compulsory group activity. The meeting concluded with thanks to the participants and organisational support of Bir Singh was acknowledged.

Professor Paramjit
(Course Co-ordinator)

Reading List

Unit 1

Data types and sources-Formulating a research problem, reviewing the literature, Qualitative and quantitative data, measurement and scales, overview of some secondary data sources, writing a research proposal

Kumar(2014) Chapters- 1, 2, 4, 5, 6, 13
Flick(2012) Chapter 3

Secondary data sources can be from any relevant source like www.data.gov.in , www.mospi.gov.in , www.dbie.rbi.org.in <http://www.worldbank.org> , IMF etc.

Unit 2

Questionnaire design-Selecting a study design and a method of data collection, Measurement and scales, ordering of questions, coding responses

Kumar(2014) Chapters-7, 8, 9, 10

Unit 3

Sampling techniques-Simple random sampling, stratification, sequential sampling. Size and cost trade-offs

Cochran(1977) Chapter1-1.1 to 1.6; Chapter 2- 2.1 to 2.3;Chapter 5-5.1 & 5A.10; Chapter 8-8.1

Kumar(2014) Chapter 12

Unit 4

Processing of survey data-Data cleaning, checking for consistency, coding responses

Kumar(2014) Chapters-11, 15

Unit 5

Analysing data- Generating sample statistics and representing them in an easily comprehensible manner, Writing a research report

Kumar(2014) Chapters-16, 17

Unit 6

Ethics and scientific integrity- Respecting respondent privacy, ethical standards of conduct

Kumar(2014) Chapter 14

Note: It was suggested that teachers go through Groves et al(2009) and give suggestions for inclusion of the same to be considered next year.

References

1. Cochran, W. (1977). *Sampling techniques*, 3rd ed. Wiley
2. Groves, R., Fowler, F., Couper, M., Lepkowski, J., Singer, E., Tourangeau, R. (2009). *Survey Methodology*. Wiley.
3. Kumar, R. (2014). *Research Methodology: A step-by-step guide for beginners*, 4th ed. Sage Publications.
4. Uwe Flick. (2012). *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*. Sage Publications.

Teaching Learning Process

Combination of labs and lectures. Lab sessions can be utilized to teach students how to access data sources and for data analysis and presentation using Tables, Charts, etc. using EXCEL or any other software.

Assessment

Internal Assessment: Project(15 Marks) and Assignments/Tests
(10 Marks)
Final Exam-75 marks

6. Advanced Baking Technology

DSE FT 1: ADVANCED BAKING TECHNOLOGY (CREDITS- THEORY: 4; PRACTICAL: 2)

OBJECTIVES:

- To impart students with knowledge related to processing of breads, biscuits and cookies.
- To familiarize them with basics of food packaging, marketing and cost control.

COURSE LEARNING OUTCOMES:

- Describe the role of ingredients and steps of preparation of bread and biscuits.
- Illustrate techniques of marketing and cost control.
- Compare various food packaging materials and their characteristics.
- Justify label regulations and need for nutritional labeling.
- Demonstrate skills to prepare various kinds of breads and biscuits.
- Conduct sensory evaluation of prepared baked products.
- Perform quality tests of wheat flour and yeast.
- Produce bakery products in bulk and organize an exhibition cum sale.

THEORY

PERIODS: 60 (CREDITS 4)

UNIT I: BREAD TECHNOLOGY

14

- Preparation of bread - ingredients used, methods of dough preparation, steps in bread processing, evaluation of the baked bread, staling of bread, diseases of bread
- Dubey, S. C. (2016). *Basic Baking-Science and Craft*. Delhi: Society of Indian Bakers. Unit 1, Chapter 1- 8, pg 8-85
- Dubey, S. C. (2009). *Bakery Vighan*. Delhi: Society of Indian Bakers, Unit 1, Chapter 1-8, pg 3-97

UNIT II: BISCUIT AND COOKIES TECHNOLOGY

12

- Preparation of biscuits and cookies – types, ingredients, processing and evaluation
 - Crackers
- Dubey, S. C. (2016). *Basic Baking-Science and Craft*. Delhi: Society of Indian Bakers. Unit 2, Chapter 6, pg 132- 137
- Dubey, S. C. (2009). *Bakery Vighan*. Delhi: Society of Indian Bakers, Unit 2, Chapter 6, pg 166-174

UNIT III: FOOD PACKAGING

14

- Packaging – its importance, essential features of an ideal package, various food packaging materials and their characteristics
 - Recent trends in the field of packaging (active packaging, intelligent packaging, RFID)
 - Label regulations and designing labels for packaged foods, nutritional labeling.
- Potter, N., & Hotchkiss, J.H. (2006). *Food Science*. Delhi: CBS Publishers, Chapter 21, pg 478-508
- Food Safety and Standards Authority of India: <http://www.fssai.gov.in>

UNIT IV: MARKETING AND COST CONTROL

20

- Marketing - definition, scope, understanding the 4Ps (Product, Price, Place, Promotion), marketing techniques, marketing and distribution of processed products
 - Cost control – food cost, labour cost and other costs; costing of processed products
- Sethi, M. (2005). *Institutional Food Management*. Delhi: New Age International Publishers. Chapter 22, pg 381-404; Chapter 32, pg 579- 588

PRACTICAL

PERIODS: 60 (CREDITS 2)

- Determination of gluten content in refined wheat flour.
- Qualitative assessment of bran content in various wheat flours.
- Determination of dough raising capacity (DRC) of yeast and factors affecting the yeast activity.
- Preparation and sensory evaluation of breads (white and brown bread), buns and dinner rolls, pizza base.
- Preparation and sensory evaluation of various biscuits and cookies: Dropped biscuits, Rolled biscuits, Moulded biscuits
- Preparing any of the baked products in bulk and organizing an exhibition-cum-sale.

COMPULSORY READING:

- Dubey S. C. (2016). *Basic Baking: Science and Craft*. Delhi: The Society of Indian Bakers.
- Dubey S. C. (2009). *Bakery Vigyan*. Delhi: The Society of Indian Bakers.
- Matz A. (2008). *Bakery Technology and Engineering*. 10th Edition. Delhi: CBS Publishers.

ADDITIONAL RESOURCES:

- Athalye, A.S. (1992). *Plastics in Food Packaging*. Delhi: Tata McGraw Hill Publishing Company.
- Booth, G.R. (2003). *Snack Foods*. Delhi: CBS Publishers.
- Faridi, H. (2004). *The Science of Cookie and Crackers Production*. Delhi: CBS Publishers.
- Griffin, S. (1997). *Principles of Food Packaging*. Connecticut: The AVI Publishing Company.
- Ketrapaul, N., Grewal, R.B., Jood, S. (2005). *Bakery Science and Cereal Technology*. Delhi: Daya Publishing House.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., & Rekhi, T. (2004). *The Art and Science of Cooking*. Delhi: Phoenix Publishing House Private Limited.
- Potter, N., & Hotchkiss, J.H. (2006). *Food Science*. Delhi: CBS Publishers.
- Raina, U., Kashyap, S., Narula, V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). *Basic Food Preparation – A Complete Manual*. Delhi: Orient Longman.
- Sharma, S., Aggarwal, M. & Sharma, S. (2018). *Food Frontiers*. Delhi: New Delhi Publishers.
- Sethi, M. (2005). *Institutional Food Management*. Delhi: New Age International Publishers.

27

WEBSITES:

- Food Safety and Standards Authority of India: <http://www.fssai.gov.in>.
- Baking courses: <https://www.udemy.com/topic/baking/>.
- Baking guide: <http://www.reviewlab.com/baking-guide/>.

TEACHING LEARNING PROCESS:

- Lecture
- Demonstration
- Experimental learning
- Market Survey
- Power Point Presentation
- Videos
- Quiz
- Assignments
- Handouts

ASSESSMENT METHODS:

As per University of Delhi norms for each course the assessment is as follows:

For theory (maximum marks 100):

-End semester exam: 75 marks

-Internal Assessment: 25 marks (Class test- 10 marks; Assignment- 10 marks; Attendance – 5 marks)

For practical (where applicable) (maximum marks 50):

-End-semester practical exam: 25 marks

-Continuous evaluation of practical: 25 marks

Result is declared in terms of letter grade and grade points for each course.

KEYWORDS:

- Department of Food Technology
- Bread technology
- Biscuits and cookies technology
- Food packaging
- Marketing
- Cost control
- Qualitative tests of wheat flour and yeast

Facilitating the achievement of Course Learning Objectives

Unit	Course Learning Outcomes	Teaching and Learning	Assessment Tasks
------	--------------------------	-----------------------	------------------

No.		Activities	
1	Students will have gained knowledge on role of ingredients, steps of processing and evaluation of bread. They will be aware of causes of staling and diseases of bread.	Lecture classes on role of ingredients, methods of dough preparation, steps in processing and evaluation of bread, Video and demonstration on processing of bread.	Class test focusing on role of ingredients and steps of processing of bread. Power point presentation by students on topics covered under this unit. Evaluating the breads.
2	Students will have gained knowledge on types on cookies, and biscuits, role of ingredients, processing and evaluation of biscuits. They will also acquire information on crackers.	Theory classes on preparation of biscuits and cookies, ingredients required, steps of processing and evaluation. Discussion about crackers. Video and Demonstration on processing of biscuits and power point presentation.	Assignments, Market surveys on types of biscuits. Evaluating the biscuits
3	Students will have gathered detailed information on importance of packaging, essential features of an ideal package and characteristics of various food packaging materials. Students will have a broad perspective of recent trends in packaging, label regulations and nutritional labeling.	Theory lectures on packaging materials, importance of packaging and essential features of an ideal package. Detailed discussion on recent trends in packaging, label regulations and nutritional labeling.	Quiz on packaging requirements, market survey on packaging of processes foods, Assignment on nutritional labeling.
4	Students will have gained detailed information on marketing and distribution of processed products. They will be aware of different aspects of cost control and costing.	Interactive lectures on techniques of marketing and distribution. Detailed discussion on scope of 4P's of marketing. Discussion about cost control and techniques.	Test on marketing and distribution. Assignment on cost control measures in food industry. Power Point presentation on marketing.

*Assessment tasks listed here are indicative and may vary.

7. Food safety Hygiene And Quality Testing

DSE-FT 3: FOOD SAFETY, HYGIENE AND QUALITY TESTING (CREDITS- THEORY: 4; PRACTICAL: 2)

COURSE OBJECTIVES:

- To support the supply of safe and wholesome food
- To provide in-depth understanding to students regarding food safety and hygiene
- To increase knowledge related to management and enhancement of quality
- To gain knowledge related to food quality assessment tests using simple

After studying the paper, the students will be able to:

- Gain basic understanding of food safety and its related issues
- Illustrate risk factors and newer challenges associated with food safety
- Understand and apply general principles of food hygiene
- Relate the relevance of various quality management systems/ approaches and training for weaving the culture of food safety at various levels
- Have knowledge regarding the role of various global and national regulatory agencies in maintaining food quality and harmonizing international trade
- Describe salient physical, sensory and chemical methods of food quality testing.
- Scientifically assess the quality of food using sensory, physical and microbiological methods.

THEORY:

PERIODS: 60 (CREDITS 4)

UNIT I: FOOD LAWS AND REGULATIONS

12

- Introduction to food acts laws and standards
- National food safety and standard act
- International standards, regulatory agencies
- Consumer protection act

Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd, Chapter 27, pg 361-375

UNIT II FOOD QUALITY MANAGEMENT

12

- Characteristics of quality
- Quality Control,
- Quality Assurance
- Total Quality Management
- Quality Management System
- Good Manufacturing Practices
- Hazard Analysis Critical Control Point System (HACCP)

Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd, Chapter 28, pg 376- 390

UNIT III INTRODUCTION TO FOOD SAFETY AND HYGIENE

10

- Food hygiene
- Factors affecting food safety
- Food spoilage
- Food handling
- Special requirements for high-risk foods,
- Safe food cooking temperature and storage techniques.

Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd, Chapter 20, pg 263-270; Chapter 29, pg 392-400

UNIT IV HYGIENE AND SANITATION IN FOOD SERVICE INSTITUTIONS

8

35

- Cleaning and disinfection
- Personal hygiene
- Pest control
- Waste disposal

Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd, Chapter 29, pg 401-406

UNIT V SENSORY METHODS OF FOOD QUALITY TESTING 8

- Sensation of taste, smell, appearance and flavor, sensory evaluation techniques

Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd, Chapter 6, pg 75-80

UNIT VI OBJECTIVE METHODS OF FOOD QUALITY TESTING 10

- Physical test methods (moisture, acidity, water activity, texture, viscosity, colour)
- Simple methods of chemical analysis (protein, fat, water, ash)
- Microbiological sampling and testing.

Food Safety and Standards Authority of India: <http://www.fssai.gov.in>

Srilakshmi, B. (2012). *Food Science*. Delhi: New Age International Pvt. Ltd, Chapter 13, pg 289-312

PRACTICAL:

PERIODS: 60 (CREDITS 2)

- Presentation on food hygiene and sanitation practices in any local food outlet.
- Sensory evaluation tests for processed foods
- Determination of the quality of an egg (whole and open egg).
- Determination of the moisture content of various flours
- Determination of viscosity of various food gruels (porridge, custards, batters etc.) using viscometer.
- Assessing the texture of raw and cooked food using penetrometer.
- Measurement of the water activity (a_w) of raw and cooked food using AW – meter.
- Detection of pathogens in food using microbiological detection kits

COMPULSORY READING:

- Mathur, P. (2018). *Food Safety and Quality Control*. Delhi: Orient Blackswan.
- Srilakshmi, B. (2016). *Food Science*. 2016. Delhi: New Age International Pvt. Ltd.
- Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.

ADDITIONAL RESOURCES:

- Frazier, W.C. & Wethoff, D.C. (2014). *Food Microbiology*. Chennai: McGraw Hill.

- IFST. (2012). *Food and Drink – GMP: a guide to its responsible Management*. UK: UK Institute of Food Science and Technology.
- Marriott, N.G. & Gravani, R.B. (2006). *Principles of Food Sanitation*. USA: Springer.
- Sethi, M. & Malhan, S. (2018). *Catering management – an integrated approach*. Delhi: New Age International Publishers.
- Prabhakar, K. A. (2016). *Practical Guide to Food Laws and Regulations*. Delhi: Bloomsburg India.

WEBSITES:

- Codex Alimentarius: <http://www.codexalimentarius.org>
- Hand Hygiene Resource Center: <http://www.handhygiene.org>
- Food Safety and Standards Authority of India: <http://www.fssai.gov.in>
- International Center of Excellence in Food Risk Communication: <http://www.foodriskcommunications.com>
- International Food Information Council: <http://www.ific.org>

TEACHING LEARNING PROCESS:

- Use of ICT especially e graphics such as power point presentations
- Lectures
- Group discussions
- Assignment work
- MOOCs, Videos
- Conduct of practicals by students
- Field visits (optional)

ASSESSMENT METHODS:

As per University of Delhi norms for each course the assessment is as follows:

For theory (maximum marks 100):

-End semester exam: 75 marks

-Internal Assessment: 25 marks (Class test- 10 marks; Assignment- 10 marks; Attendance – 5 marks)

For practical (where applicable) (maximum marks 50):

-End-semester practical exam: 25 marks

-Continuous evaluation of practical: 25 marks

Result is declared in terms of letter grade and grade points for each course.

KEYWORDS:

- Food Safety
- Food Hygiene

- FSSAI
- HACCP
- Food Quality Management
- Food Hygiene

Facilitating the Achievement of Course Learning Objectives

Unit No.	Course Learning Outcomes	Teaching and Learning Activities	Assessment Tasks
1	Students will have gained knowledge about the latest Acts, Laws and Standards related to food safety.	Lecture, website of national and international regulatory bodies, survey, e-resources.	Assignment/project work, quiz, multiple choice questions, oral/written exam.
2	Students will have gained understanding on planning and executing total quality management system for food processing/food service units	Lecture, e-resources, case study approach, planning of quality management system for a food product available in college canteen.	Assignment/project work, oral/written exam, identification of critical control points for a food product.
3	Students will have gained understanding on role and scope of safety and hygiene during handling of food	Lecture, e-resources, group discussions, survey of food service unit.	Assignment work/oral/written exam, group presentation using e-graphics.
4	Students will have gained knowledge on implementation of various hygiene and sanitation practices	Lecture, group discussions, case study approach, videos.	Problem solving exercises, posters, charts, skit/role play.
5	To apply the knowledge related to sensory methods of food quality testing to conduct/evaluate food.	Lecture, practical on implementing and evaluating the sensory characteristics of food using various test of sensory evaluation.	Oral/written work, Assignment work, evaluation of practical exercise.
6	Students will have gained knowledge on using various physical, chemical and microbiological methods for evaluating food quality.	Lecture, e-resources, Manuals related to methods of food analysis such as FSSAI, Codex etc., perform food quality assessment tests using instruments such as viscometer, penetrometer, water activity meter etc.	Oral/written work, presentation using e-graphics, evaluation of practical work.

***Assessment tasks listed here are indicative and may vary.**

8. DSC - FT-3 : Basic Baking Technology.

DSC- FT 3: BASIC BAKING TECHNOLOGY (CREDITS- THEORY: 4; PRACTICAL: 2)

COURSE OBJECTIVES:

- To impart students basic knowledge related to the principles of baking
- To introduce them to the techniques and skills of cake and pastry making and their decoration
- To introduce the concept of proximate analysis of wheat flour

COURSE LEARNING OUTCOMES:

After successfully completing the course, the students will be able to:

- Describe the present and future trends of the bakery industry.
- Illustrate the basic ingredients and equipment used for baking along with their significance
- Describe the process of cake and pastry preparation, their decoration and evaluation.

- Demonstrate the skills for making cakes and pastries.
- Test wheat flour and conduct labeling, packaging and costing of prepared bakery products.
- Initiate the entrepreneurial journey in the field of bakery.

THEORY

PERIODS: 60 (CREDITS 4)

UNIT I: BAKING INDUSTRY

8

- Baking industry and its scope in the Indian economy
- History of bakery - present trends and prospects
- Nutrition facts about bakery products

https://shodhganga.inflibnet.ac.in/bitstream/10603/53842/10/10_chapter%202.pdf

UNIT II: WHEAT GRAIN, BAKING INGREDIENTS AND EQUIPMENT

22

- Wheat grain– its structure
- Milling of wheat, types of refined wheat flour; composition of refined wheat flour (gluten, amylose/ amylopectin, enzyme activity, moisture) and its storage
- Ingredients – flour, sugar, fat, egg, leavening agents and other bakery additives
- Equipment- oven, mixing tools and icing tools

Potter, N., & Hotchkiss, J.H. (2006). *Food Science*. Delhi: CBS Publishers, Chapter 17, pg 381-401

UNIT III: CAKE TECHNOLOGY

15

- Preparation of cakes - types of cakes, methods of batter preparation, steps in cake making, balancing of cake formula, evaluation of the baked cake, operational faults in cake processing and the remedial measures.
- Packaging, labeling, and costing
- Cake decoration- different methods

Dubey, S. C. (2016). *Basic Baking-Science and Craft*. Delhi: Society of Indian Bakers, Unit 2, Chapter 1 – 5, pg 98-121

Dubey, S. C. (2009). *Bakery Vighan*. Delhi: Society of Indian Bakers, Unit 2, Chapter 1 – 5, pg 117-150

UNIT IV: PASTRY TECHNOLOGY

15

- Preparation of pastry - types of pastries (short crust, puff/flaky and choux pastry), processing and evaluation, faults and remedies.

Dubey, S. C. (2016). *Basic Baking-Science and Craft*. Delhi: Society of Indian Bakers, Unit 2, Chapter 7, pg 138-143

- Dubey, S. C. (2009). *Bakery Vighan*. Delhi: Society of Indian Bakers, Unit 2, Chapter 7, pg 175-182.

PRACTICAL

PERIODS: 60 (CREDITS 2)

- Quality Testing of Flour
 - Determination of water absorption power (WAP) of refined wheat flour and whole wheat flour
- Determination of ash content in refined wheat flour
- Determination of moisture content of refined wheat flour
- Sensory evaluation (by Hedonic scale) for various processed food products
- Preparation and sensory evaluation of cakes
 - Fatless sponge (pineapple sponge, chocolate sponge and Swiss roll)
 - Shortened cake (plain tea cake, Dundee cake, marble cake, fruit cake and innovative cakes)
 - Eggless cake
- Cake Icing
- Preparation and sensory evaluation of pastry
 - Short crust (jam tarts)
 - Puff/flaky (Bombay khari, vegetable patties)
 - Choux pastry (chocolate éclairs)

COMPULSORY READINGS:

- Dubey, S. C. (2016). *Basic Baking-Science and Craft*. Delhi: Society of Indian Bakers.
- Dubey, S. C. (2009). *Bakery Vighan*. Delhi: Society of Indian Bakers.
- Ketrapaul, N., Grewal, R.B., & Jood, S. (2005). *Bakery Science and Cereal Technology*. Delhi: Daya Publishing House.
- Potter, N., & Hotchkiss, J.H. (2006). *Food Science*. Delhi: CBS Publishers.

ADDITIONAL RESOURCES:

- Cornell, Hugh, J. & Hoveling, Alber. W. (1998). *Wheat Chemistry and Utilization*, Delhi: CRC Press.
- Edward, W. P. (2007). *The Science of Bakery Products*. Cambridge: RSC Publishing.
- Kent, N.L. (2004). *Technology of Cereals*. London: Pergamon Press.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., & Rekhi, T. (2004). *The Art and Science of Cooking*. Delhi: Phoenix Publishing House Private Limited.
- Mathur, P. (2018). *Food Safety and Quality Control*. Delhi: Orient Blackswan.
- Matz A. (2004). *The Chemistry and Technology of Cereals as Food and Feed*. Delhi: CBS Publishers.
- Matz, A. (1998). *Bakery Technology and Engineering*. Delhi: CBS Publishers.

- Raina, U., Kashyap, S., Narula, V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). *Basic Food Preparation – A Complete Manual*. Delhi: Orient Longman.
- Srilakshmi, B. (2018). *Food Science*. Delhi: New Age International Publishers.

TEACHING LEARNING PROCESS:

- Lectures
- Power point presentations
- Experiential learning through demonstrations
- Market survey
- Experimental learning

ASSESSMENT METHODS:

As per University of Delhi norms for each course the assessment is as follows:

For theory (maximum marks 100):

-End semester exam: 75 marks

-Internal Assessment: 25 marks (Class test- 10 marks; Assignment- 10 marks; Attendance – 5 marks)

For practical (where applicable) (maximum marks 50):

-End-semester practical exam: 25 marks

-Continuous evaluation of practical: 25 marks

Result is declared in terms of letter grade and grade points for each course.

KEYWORDS:

- Department of Food Technology.
- Baking industry
- Wheat milling
- Bakery ingredients
- Bakery equipment
- Cake technology
- Pastry technology

Facilitating the achievement of course learning objectives

Unit No.	Course learning outcomes	Teaching and learning activities	Assessment tasks
1.	Students will have gained knowledge on the history and scope of the baking industry in	Lecture on the Baking industry in India.	Market survey of bakery products and a class test.

	India.		
2.	Students will have gained understanding about ingredients and equipment required for baking.	Lecture and demonstration of ingredients and equipment required for baking. Diagram of wheat.	Assignment submission.
3.	Students will have gained knowledge on cake making and decoration techniques	Lecture, demonstration; cake making and decoration videos shown in the class. Learning about labeling, packaging and costing of cakes.	Assignment and power point presentations. Evaluating the cakes. Making labels. Class test.
4.	Students will learn about different types of pastries and their evaluation.	Interactive session on pastries, demonstration; audio visual presentation on making short crust pastry, puff pastry and choux pastry.	Preparing and evaluating the different pastries. Class test and quiz on pastries.

***Assessment tasks listed here are indicative and may vary.**

9. Introduction to Food Safety & Preservation

DSC-FT 4: INTRODUCTION TO FOOD SAFETY & PRESERVATION (CREDITS- THEORY: 4; PRACTICAL: 2)

COURSE OBJECTIVES:

- To impart students basic knowledge relating to food safety and principles of preservation
- To introduce them to the concept of processing and preservation of fruits and vegetables
- To familiarize the students with preserved fruit and vegetable products available in the market
- To equip them with skills required for preservation, packaging and evaluation of fruit beverages, ketchup, sauce and chutney

COURSE LEARNING OUTCOMES:

After successfully completing the course, the students will be able to:

- Describe the purpose and scope of the food preservation industry along with a market survey of preserved products.
- Illustrate the post-harvest changes in fruits and vegetables.
- Explain the different objectives, principles and methods of food preservation
- Demonstrate skills for processing of fruits and vegetable chutneys, sauces and beverages along with labeling

- Prepare safe and hygienic preserves using appropriate techniques of preservation
- Be conversant with FSSAI regulations and functions
- Develop the attitude and values imperative for a micro entrepreneur in food industry.

THEORY

PERIODS: 60 (CREDITS 4)

UNIT I: PURPOSE AND SCOPE OF PRESERVATION

5

- Objectives of preservation and processing
- Scope of preservation industry in India

Srivastava, S.S. (2011). *Phal Parirakshan*. Lucknow: Kitab Mahal, Chapter 4, pg 72- 88

Srivastava, R.P. & Kumar, S. (2005). *Fruit and Vegetable Preservation*. Lucknow: International Book Distributing Co. Chapter 3, pg 11- 18

UNIT II: POST-HARVEST CHANGES AND SPOILAGE

10

- Physical, chemical and microbiological changes in fruits and vegetables
- Factors affecting growth of microorganisms and the control measures

Srivastava, R.P. & Kumar, S. (2005). *Fruit and Vegetable Preservation*. Lucknow: International Book Distributing Co. Chapter 9, pg 61-72

UNIT III: FOOD SAFETY

20

- Key terms, factors affecting food safety, recent concerns
- FSSAI: Regulations and functions
- Food additives and contaminants
- Hygiene and Sanitation
- HACCP

Suri, S. & Malhotra, A. (2014). *Food Science, Nutrition and Safety*. Delhi: Pearson India Ltd, Chapter 20, pg 263-270; Chapter 25, 26, pg 335-357

UNIT IV: PRINCIPLES AND METHODS OF PRESERVATION

12

- Asepsis
- Use of low temperature
- Use of high temperature
- Removal of moisture
- Removal of air
- Use of chemical preservatives
- Fermentation

22

- Irradiation
- Gas preservation
- Newer methods

Srivastava, R.P. & Kumar, S. (2005). *Fruit and Vegetable Preservation*. Lucknow: International Book Distributing Co. Chapter 12, pg 85-100

UNIT V: FRUIT AND VEGETABLE PROCESSING – SAUCES AND BEVERAGES

13

- Chutney and sauces- definition, method of preservation, steps in preparation of chutney and sauces
- Fruit beverages- definition and classification, method of preservation (with special emphasis on pasteurization, use of chemical preservatives, sugar), role of various ingredients

Srivastava, S.S. (2011). *Phal Parirakshan*. Lucknow: Kitab Mahal, Chapter 13, pg 339-400; Chapter 17, pg 482-496

Lal, G., Siddhapa, G.S., & Tandon, G.L. (2016). *Preservation of Fruits and Vegetables*. New Delhi: Indian Council of Agriculture Research, Chapter 9, pg 124-151; Chapter 14, pg 235- 249

PRACTICALS

PERIODS: 60 (CREDITS 2)

- Sterilization of bottles
- Market survey of preserved fruit and vegetable products
- Preparation, packaging, sensory/objective (TSS, pH) evaluation and costing of:
 - Sauces (chilli sauce and tomato sauce)
 - Ketchup (tomato)
 - Chutney (tomato chutney and *imli* chutney)
 - Squash (lemon squash, orange squash, pineapple squash)
 - Syrup (rose syrup and almond syrup)
 - Fermented beverage (*Kanji*)
- Preparation of labels for preserved foods

COMPULSORY READING:

- Frazier, W.C. & Westhoff, D.C. (2014). *Food Microbiology*. Chennai: Tata McGraw-Hill Publishing Company Limited.
- Srivastava, S.S. (2006). *Phal Parirakshan*. Lucknow: Kitab Mahal.
- Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.

ADDITIONAL RESOURCES:

- Khurdia, D.S. (1995). *Preservation of fruits and vegetables*. New Delhi: Indian Council of Agriculture Research.
- Knechtges, L.I. (2012). *Food Safety-Theory and Practice*, USA: Jones and Barlette Learning.
- Lal, G., Siddhapa, G.S., & Tandon, G.L. (2009). *Preservation of Fruits and Vegetables*. New Delhi: Indian Council of Agriculture Research.
- Mathur, P. (2018). *Food Safety and Quality Control*. Delhi: Orient Blackswan.
- Ramaswamy, H. and Marcotte, M. (2009). *Food Processing–Principles and Applications*. Boca Raton : Taylor and Francis.
- Subbalakshmi, G., & Udipi, S.A. (2007). *Food Processing and Preservation*. Delhi: New Age International Publishers.
- *The Food Safety and Standards Act along with Rules and Regulations*. (2011) Delhi: Commercial Law Publishers (India) Pvt. Ltd.

WEBSITES:

- Food Safety and Standards Authority of India. www.fssai.gov.in
- National Center for Home Food Preservation. <http://nchfp.uga.edu/>
- Ministry of Food Processing Industry website <http://mofpi.nic.in/>

TEACHING LEARNING PROCESS:

- Lectures
- Power point presentations.
- Market survey
- Experiential learning through demonstrations
- Experimental learning

ASSESSMENT METHODS:

As per University of Delhi norms for each course the assessment is as follows:

For theory (maximum marks 100):

-End semester exam: 75 marks

-Internal Assessment: 25 marks (Class test- 10 marks; Assignment- 10 marks; Attendance – 5 marks)

For practical (where applicable) (maximum marks 50):

-End-semester practical exam: 25 marks

-Continuous evaluation of practical: 25 marks

Result is declared in terms of letter grade and grade points for each course.

KEYWORDS:

- Department of Food Technology
- Postharvest changes
- Principles of preservation
- FSSAI
- HACCP
- Processing of sauces
- Processing of beverages

Facilitating the achievement of course learning objectives

Unit No	Course learning outcomes	Teaching learning activities	Assessment tasks
1.	Students will have gained the understanding of preservation industry in India.	Lecture on the preservation industry in India. Use of e-resource while explaining the scope.	Market survey of preserved products. Class test. Essay writing
2.	Students will have gained understanding on different kind of changes occurring in fruits and vegetables after harvesting and their control measures.	Discussion on physical, chemical and microbiological changes followed by viewing of video.	Written assignment to be submitted.
3.	Students will become conversant with regulations and functions of FSSAI, Food safety and HACCP.	Lectures on Food safety, FSSAI, Food additives and contaminants; hygiene and sanitation and HACCP followed by audio visual presentation.	Quiz and presentations on different aspects of Food safety.
4.	Students will have gained understanding on the Principles and different methods of preservation.	Lectures and Poster presentation on the different techniques of preservation.	Class test, Assignment.
5.	Students will have learnt the methodology of making chutney, sauces and beverages.	Lecture cum demonstration of the methodology of making chutneys sauces and beverages and making their labels.	Practically preparing and evaluating the chutneys sauces and beverages. Assignments on fruit beverages, making labels.

***Assessment tasks listed here are indicative and may vary**

10.DSC-2- FT: Food Science Part.1

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-FT: FOOD SCIENCE PART-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Food Science Part-I	4	3	0	1	Class XII Pass	NIL

LEARNING OBJECTIVES:

1. To introduce the students to the vibrant field of food science and food technology
2. To impart theoretical and practical knowledge about composition, nutritive value and processing of cereals, pulses, fruits, vegetables and meat.
3. To familiarize students with basics of food adulteration.

LEARNING OUTCOMES:

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

1. Define food science and describe its association with other related fields; and understand the role of food science in food and health industry.
2. Describe composition, nutritive value and processing of cereals, pulses, fruits, Vegetables, meat, fish and poultry.
3. Justify scientifically the changes occurring in food during processing, handling and Storage. Describe enzymatic and non-enzymatic browning reactions in various foods.
4. Describe harmful effects of adulteration on health and will be able to detect presence of common adulterants in food.

THEORY:

UNIT I: Introduction to Food Science and Technology

(15 Hours)

- *Unit Description:* This unit will introduce the students to the field of Food Science and Technology. It will also give information on basics of nutrition and food adulteration.
- *Subtopics:*
 - Definition, scope and current trends in food science and technology.
 - Basic introduction to macro and micronutrients-classification

250

and functions of various nutrients

- Definitions- food, safe food, nutrient, nutrition, balanced diet
- Commonly found food adulterants and their effect on health

UNIT II: Cereals and Pulses

(10 Hours)

- *Unit Description:* The unit will focus on various aspects of composition, nutritive value and processing of cereals, millets and pulses.
- *Subtopics:*
 - Composition and nutritive value, types of cereals and millets
 - Gelatinization of starch and the factors affecting it, dextrinization, germination and fermentation
 - Toxic constituents in pulses.

UNIT III: Fruits and Vegetables

(12 Hours)

- *Unit Description:* The unit is about composition, nutritive value and processing aspects fruits and vegetables. It also describes about various browning reactions that take place during food processing.
- *Subtopics:*
 - Classification of fruits and vegetables, composition and nutritive value; effect of processing on pigments.
 - Browning Reactions- enzymatic & non-enzymatic, role in food preparation and prevention of undesirable browning.

UNIT IV: Meat, Fish and Poultry

(8 Hours)

- *Unit Description:* The unit will focus on composition, nutritive value and processing aspects of meat, fish and poultry.
- *Subtopics:*
 - Composition and nutritive value
 - Types of meat, fish and poultry and their selection/purchasing criteria Rigor mortis, Tenderization and Curing.

PRACTICAL:

No. of Students per Practical Class Group: 10-15

- | | |
|--|-----------|
| 1. Weights and Measures. | (2 Hours) |
| 2. Detection of adulterants in food | (2 Hours) |
| 3. Gelatinization of starch and the factors affecting it. | (2 Hours) |
| 4. Preparation of dish using gelatinization of starch | (2 Hours) |
| 5. Dextrinization of starch and its application | (2 Hours) |
| 6. Germination of pulses and cereals | (2 Hours) |
| 7. Preparation of products using sprouts | (2 Hours) |
| 8. Fermentation of cereals and pulses | (2 Hours) |
| 9. Preparation of cereal-pulse fermented products | (2 Hours) |
| 10. Effect of heat, acid and alkali on water soluble plant pigments. | (2 Hours) |
| 11. Effect of heat, acid and alkali on fat soluble plant pigments. | (2 Hours) |
| 12. Maillard browning during food preparation. | (2 Hours) |
| 13. Enzymatic browning and its prevention. | (3 Hours) |
| 14. Caramelization reaction in food. | (2 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

1. Sethi, P. & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt.Ltd.
2. Srilakshmi, B. (2012). *Food Science*. Delhi: New Age International Pvt. Ltd.
3. Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.
 - i. Online Question Bank and student E Resources:
https://wps.pearsoned.co.in/suri_fsns_1/ Online Instructor Resources:
www.pearsoned.co.in/sukhneetsuri
4. Potter, N., & Hotchkiss, J.H. (2007). *Food Science*. 5th Edition. Delhi: CBS Publishers.
5. Rekhi, T. & Yadav, H. (2014). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt. Ltd.

SUGGESTED READINGS:

1. Avantina S (2019). *Textbook of Food Science and Technology*, 3rd Edition, CBS Publishers and Distributors Pvt Limited

11. DSC-1- FT: Basics in Food And Nutrition

B.A. (Prog.) with Food Technology (FT) as Major Category-II

DISCIPLINE SPECIFIC CORE COURSE – DSC-1-FT: BASICS IN FOOD AND NUTRITION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basics in Food and Nutrition	4	3	0	1	Class XII Pass	NIL

LEARNING OBJECTIVES:

1. To familiarize students with the relationship between food, nutrition, nutrients and health
2. To describe the functions, sources, deficiencies and excess of various nutrients
3. To make students understand the principles and methods of conserving and enhancing nutrients during cooking food
4. Prepare dishes using basic principles of food science and nutrition.

LEARNING OUTCOMES:

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

1. Understand the basic concepts related to of the vibrant field of nutrition
2. Gain theoretical and practical knowledge about balanced diet, energy, macro nutrients and micro-nutrients
3. Judiciously adopt healthier methods of cooking based on the available resources
4. Adopt methods of processing food which would help to conserving/ enhancing nutrients while processing food.

SYLLABUS OF DSC-1-FT

THEORY:

UNIT I: Basic Concepts and Introduction to Food and Nutrition (5 Hours)

- *Unit Description:* This unit will introduce the vibrant field of nutrition to the

SUGGESTED READINGS:

1. Bamji MS, Krishnaswamy K, Brahman GNV (2016). *Textbook of Human Nutrition*, 4th edition. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Chadha R and Mathur P (2015). *Nutrition: A Lifecycle Approach*. Hyderabad: Orient BlackSwan.
3. Roday, S (2018). *Food Science and Nutrition*. UK: Oxford University Press.
4. Lanham, SA, Hill, TR, Gallagher, AM, Vorster, HH. (2019). *Introduction to Human Nutrition*, Third Edition, Wiley Blackwell, USA.
5. Whitney, E.N., Rolfes, S.R. (2016). *Understanding Nutrition*. 14th Edition; USA: Elsevier.
6. Pike, R.L. and Brown, M.L. (1984) *An Integrated Approach. Nutrition*, John Wiley & Sons, Hoboken, 197.
7. Swaminathan, M. (2021). *Advanced Textbook on Food and Nutrition*. Bangalore Press.
8. Desai. (2019). *Handbook of Nutrition and Diet*. CRC Press

7. Kishore B, Gupta S, Gupta S, Gupta S, Gupta S (2007). *The Art and Science of Cooking: A Practical Manual*, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.

12. VAC 1: Ayurveda And Nutrition

VAC 1: AYURVEDA AND NUTRITION

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Ayurveda and Nutrition	02	1	0	1	Pass in Class 12 th	NIL

Learning Objectives

The Learning Objectives of the course are:

- To introduce the basic principles of nutrition in Ayurveda
- To link the Ayurvedic nutrition with modern dietary practices for health
- To analyse basic tenets of traditional diets and health recipes
- To understand the contemporary food habits in everyday life

Learning outcomes

The Learning outcomes of the Course are:

- Awareness of traditional food cultures of India
- Evaluate changing food patterns and lifestyle over the years
- Understand Indian Knowledge Systems (IKS) and key Vedic principles with respect to Food and Nutrition
- Apply basic tenets of traditional diets for health and disease
- Prepare selected healthy recipes based on Ayurvedic principles

SYLLABUS OF AYURVEDA AND NUTRITION

UNIT – I Introduction to Ayurvedic Nutrition

(4 Weeks)

- Ayurveda and Indian food cultures
- Nutrition and lifestyle transition over the years
- Regional Food Traditions of India

UNIT – II Basic principles of Food and Nutrition and Ayurveda (6 Weeks)

- Understanding rich sources of nutrients
- Concept of Doshas & assessment
- Ayurvedic Principles of food habits and factors determining quality of food (Ahara vidhi visheshaayatana)
- FSSAI regulations on Ayurvedic Aahar

UNIT – III Ayurvedic Diets (5 Weeks)

- Principles of Diet: Aharavidhi vidhan, Sattvic, Rajasi, Tamasic foods
- Incompatible food (Viruddha Ahara), Pathya; Apathya; Viprita Ahaar
- Lifestyle Management with Dincharya and Ritucharya
- Application of Ayurvedic diets to stress linked food behaviour

Practical component (if any) – (15 Weeks)

- Visit your local market and classify the available food items according to Sattvic, Rajasi, Tamasic foods
- Conduct a survey of 10-15 households in your locality:
 - i. to study food behaviour and analyse them in light of Ayurvedic dietary principles of Sattvic, Rajasi, Tamasic
 - ii. to study the food consumption patterns and intake of incompatible food: Viruddha Ahara, Pathya; Apathya; Viprita Ahaar
 - iii To know about their adopted lifestyle Dincharya and Ritucharya
- Students are required to visit available e-resources of University of Delhi, Ministry of Ayush with regard to Ayurveda and Nutrition.
- If required, students can share their experiences in the form of a Project Report.
- The students may share their experiences in the form of audio-visual presentations of 15-30 minutes.
- Any other Practical/Practice as decided from time to time

Essential Readings

- Rastogi S (2014) Ayurvedic Science of Food and Nutrition. ASIN: BOOHWMV094, Springer: ISBN-13:978-1461496274
- Rastogi S (2010) Building bridges between Ayurveda and modern science. Int J Ayurveda Res. 1(1):41-46.
- FSSAI regulations on Ayurveda Aahar Regulations 2022. Gazette of India CG-DL-E-07052022-235642. New Delhi, Friday, May 6, 2022/ Vaisakha 16, 1944.
- Frawley D (2012) Ayurvedic healing: A comprehensive guide. Lotus Press, India.
- <https://iksindia.org/>: Indian Knowledge Systems

Suggested Readings

- Charaka Samhita, Charaka (1998) In: Tripathi BN (ed) Sutra Stahan Maharashitiya Adhyay. Chaukhamba Orientelia, Varanasi.
- Kapoor Kapil & Singh AK Indian Knowledge Systems Volume – 1. Indian Institute of Advanced Study Shimla. Published by DK Printworld (P) Ltd, N.Delhi.
<https://www.lkouniv.ac.in>.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



13. Therapeutic Nutrition

DSE HH 11: THERAPEUTIC NUTRITION (CREDITS: THEORY- 4, PRACTICAL- 2)

COURSE OBJECTIVES

- To understand the principles of Nutrition Care.
- To develop the ability to modify normal diets for therapeutic purposes.
- To understand the etiology, patho-physiology, metabolic changes, clinical symptoms and management of some common disorders / diseases.
- To imbibe the skill to plan, prepare and serve therapeutically modified diets for some diseases/ disorders.

COURSE LEARNING OUTCOMES

- A basic Understanding of the principles of Nutrition Care. An ability to modify the normal diet for therapeutic purposes.
- An understanding of the etiology, patho-physiology, metabolic changes, clinical symptoms and management of some common disorders / diseases.
- The skill to plan, prepare and serve therapeutically modified diets for some diseases/ disorders.

THEORY	CONTENT	DURATION: 60 HRS (Credits 4)
	UNIT I: Principles of Nutrition Care	6
	<ul style="list-style-type: none"> • Nutrition Care Process • Therapeutic adaptations of a Normal Diet • Progressive Diets: Clear fluid, Full fluid, soft and regular <p>Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Chapter:10 – 11, pg 159-164, 165-180.</p> <p>Mahan, L.K. & Escott Stump, S. (2013). Krause's Food & Nutrition Therapy, 13th ed. Saunders Elsevier, Chapter 10, 30, pg 159-172, 604-612</p>	
	UNIT II: Etiology, patho-physiology, metabolic changes, clinical features and nutritional management of Infection and Fevers	10
	<ul style="list-style-type: none"> • Typhoid • Tuberculosis • HIV • Malaria/Dengue/Chikungunia <p>Joshi, S.A. (2015). Nutrition and Dietetics, 4th ed. Mc Graw Hill education. Chapter:14,15 pg 388-395,396-409.</p> <p>Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Chapter:12, pg181-199.</p> <p>Mahan, L.K. & Escott Stump, S. (2013). Krause's Food & Nutrition Therapy, 13th ed. Saunders Elsevier, Chapter 37, pg,757- 773</p> <p>WHO information on Dengue/ Chikungunia/ Malaria</p> <p>https://www.who.int/denguecontrol/arbo-viral/other_arboviral_chikungunya/en/</p> <p>https://www.who.int/news-room/fact-sheets/detail/malaria</p> <p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2675814/</p>	
	UNIT III: Etiology, patho-physiology, metabolic changes, clinical features and nutritional management of the following	18
	<ul style="list-style-type: none"> • G I Tract disorders o Diarrhea • Constipation • Lactose Intolerance • Celiac disease • Peptic ulcers • Cholelithiasis • Liver- Infective Hepatitis <p>Joshi, S.A. (2015). Nutrition and Dietetics, 4th ed. Mc Graw Hill education. Chapters 12,13, pg 358-374, 375-387.</p> <p>Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Chapters 14, 15, pg 220-254, 255-276.</p>	

UNIT IV: Etiology, pathophysiology, metabolic changes, clinical features and nutritional management of the following **10**

- Weight imbalances – Overweight and obesity, underweight
- Eating disorders – Anorexia nervosa, Bulimia nervosa, EDNOS

Joshi, S.A. (2015). Nutrition and Dietetics, 4th ed. Mc Graw Hill education, Chapter 8, pg256-275.

Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Chapter 13, pg 200-219.

Mahan, L.K. & Escott Stump, S. (2013). Krause's Food & Nutrition Therapy, 13th ed. Saunders Elsevier, Chapter 22, pg 407-413.

UNIT V: Etiology, patho-physiology, metabolic changes, clinical features, diagnosis and nutritional management of the following **12**

- Type 1 and Type 2 Diabetes Mellitus
- Metabolic Syndrome
- Hypertension and coronary heart disease

Joshi, S.A. (2015). Nutrition and Dietetics, 4th ed. Mc Graw Hill education. Chapter:14,15 pg 388-395,396-409.

Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Chapter:12, pg181-199.

Mahan, L.K. & Escott Stump, S. (2013). Krause's Food & Nutrition Therapy, 13th ed. Saunders Elsevier, Chapter 37, pg,757- 773

UNIT VI: Etiology, patho-physiology, clinical features, diagnosis and nutritional management of the following: **4**

- Food allergy and food intolerance

Joshi, S.A. (2015). Nutrition and Dietetics, 4th ed. Mc Graw Hill education. Chapter:14,15 pg 388-395,396-409.

Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Chapter:12, pg181-199.

Mahan, L.K. & Escott Stump, S. (2013). Krause's Food & Nutrition Therapy, 13th ed. Saunders Elsevier, Chapter 37, pg,757- 773

PRACTICAL CONTENT DURATION: 60 HRS (Credits 2)

Planning, preparation and service of diets for the following:

- Therapeutic modifications of diets: Normal, soft, clear- and full- fluid
- Fevers: acute and chronic
- Diarrhea
- Obesity
- Type 2 Diabetes
- Hypertension and CHD References

COMPULSORY READING

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2675814/>

- https://www.who.int/denguecontrol/arbo-viral/other_arboviral_chikungunya/en/
- <https://www.who.int/news-room/fact-sheets/detail/malaria>
- Joshi, S.A. (2015). *Nutrition and Dietetics*, 4th ed. Mc Graw Hill education
- Khanna, K., Gupta, S., Seth, R., Passi, S.J., Mahna, R., Puri, S. (2013). *Textbook of Nutrition and Dietetics*. Phoenix Publishing House Pvt. Ltd.
- WHO information on Dengue/ Chikungunia/ Malaria /Metabolic syndrome

ADDITIONAL RESOURCES

- Bagchi, D. & Nair, S. (2018). *Nutritional and Therapeutic Interventions for Diabetes and Metabolic Syndrome*, 2nd ed. Academic Press. eBook ISBN: 9780128120088/ Paperback ISBN: 9780128120194.
- Mahan, L.K. & Escott Stump, S. (2013). *Krause's Food & Nutrition Therapy*, 13th ed. Saunders Elsevier

TEACHING LEARNING PROCESS

- Classroom teaching for theory periods
- Lectures and Power-point presentations will be the main method of transaction
- Special lectures/ visits/ interactions with professionals will be undertaken
- Classroom quiz sessions for revision
- For practical, laboratory work for planning, preparation and serving of food products, will be undertaken
- Extension activities will be encouraged for application oriented learning
- Any other method may be added, as per university norms and discretion of the teaching faculty

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

KEYWORDS

- Department of Food and Nutrition
- Therapeutic Diets
- Dietary management in diseases
- Nutritional management of disease conditions
- Nutrition care
- Nutritional management

Facilitating the achievement of course learning objectives

Unit No.	Course Learning Outcomes	Teaching and Learning Activities	Assessment Tasks
1.	<ul style="list-style-type: none"> Students will gain knowledge of the basics of the Nutrition Care Process- its principles, steps involved and role of the dietitian. Students will learn in-depth, regarding modifications of diets based on therapeutic principles 	<ul style="list-style-type: none"> Classroom teaching for theory periods Lectures and PowerPoint presentations Visit to the hospital Discussions/ sharing of experience on various aspects of patient-care, perceptions of students as attendants for their family's hospitalization (if any) 	<ul style="list-style-type: none"> Unit will be added to syllabus for Class test Informal assessment via- Quiz for revision
2	<ul style="list-style-type: none"> Students will study the etiology, metabolic changes and clinical features of Infection and Fevers :Typhoid, Tuberculosis, HIV, Malaria/ dengue/ Chikungunia Students will learn in-depth, the nutritional management and principles of making appropriate dietary modifications for these diseases. 	<ul style="list-style-type: none"> Classroom teaching for theory periods Lectures and presentations Special lectures/ visits to specific wards/ interactions with professionals dealing with infectious disorders will be undertaken Any other method may be added, as per university norms and discretion of the teaching faculty 	<ul style="list-style-type: none"> Unit will be added to syllabus for Class test Informal assessment via- Quiz for revision
3.	<ul style="list-style-type: none"> Students will study the etiology, metabolic changes and clinical features of G I Tract disorders: Diarrhea, Constipation, Lactose Intolerance, Celiac disease, Peptic ulcers, Cholelithiasis and Infective Hepatitis Students will learn in-depth, the nutritional management and 	<ul style="list-style-type: none"> Classroom teaching for theory periods Lectures and presentations Special lectures/ visits to specific wards/ interactions with professionals dealing with GIT disorders will be undertaken Any other method may be added, as per university norms and 	<ul style="list-style-type: none"> Unit may be added to syllabus for Class test – as per syllabus covered Informal assessment via - Quiz for revision

	principles of making appropriate dietary modifications for these diseases.	discretion of the teaching faculty	
4	<ul style="list-style-type: none"> Students will study the etiology, metabolic changes and clinical features of Weight imbalances – Overweight and obesity, underweight and Eating disorders – Anorexia nervosa, Bulimia nervosa, EDNOS Students will learn in-depth, the nutritional management and principles of making appropriate dietary modifications for these diseases. 	<ul style="list-style-type: none"> Classroom teaching for theory periods Lectures and presentations Special lectures/ visits to specific wards/ interactions with professionals dealing with weight imbalances will be undertaken 	This unit may be allotted for essay writing for assignment 2.
5.	<ul style="list-style-type: none"> Students will study the etiology, metabolic changes and clinical features of Type 1 and Type 2 Diabetes Mellitus, Metabolic Syndrome, Hypertension and coronary heart disease The Diagnostic criteria for these NCDs will be taught with cut-offs given by standard international bodies 	<ul style="list-style-type: none"> Classroom teaching for theory periods Lectures and presentations Special lectures/ visits to specific wards/ interactions with professionals dealing with the mentioned NCDs will be undertaken Extension activities will be encouraged for application oriented learning Any other method may be added, as per university norms and discretion of the teaching faculty 	<ul style="list-style-type: none"> This unit may also be allotted for essay writing for assignment 2. Participation and Report on the extension activity will be assessed
6.	<ul style="list-style-type: none"> Students will study the etiology, metabolic changes and clinical features of Food allergy and food intolerance 	<ul style="list-style-type: none"> Classroom teaching Lectures and presentations Special lectures/ visits to specific wards/ 	<ul style="list-style-type: none"> This unit may be allotted for essay writing for assignment

	<ul style="list-style-type: none"> • The differences between these two disorders and the diagnostic criteria will be taught • Students will learn how to provide dietary management for these two disorders 	<p>interactions with professionals dealing with food allergy/intolerance will be undertaken</p> <ul style="list-style-type: none"> • Any other method may be added, as per university norms and discretion of the teaching faculty 	
	<p>Practicals: Students will apply principles learnt in theory, to plan diets for the above mentioned diseases in a practical manual. Using this method, students will imbibe the skill of making therapeutic dietary plans.</p>	<ul style="list-style-type: none"> • Planning of diets will be undertaken based on theory interactions and principles of application. • Laboratory work will be undertaken for preparation and serving of food products. 	Continuous evaluation for each diet plan and food product prepared.

* Assessment tasks listed here are indicative and may vary

14. Public Nutrition

DSE HH 12: PUBLIC NUTRITION (CREDITS: THEORY- 4, PRACTICAL- 2)

COURSE OBJECTIVES

- Give an overview of the nutritional problems affecting the community.
- Familiarize students with the methods of nutritional assessment.
- Make the students conversant with various aspects of nutrition education and promotion.
- Create awareness regarding policy and intervention programmes operating in India to overcome malnutrition.

COURSE LEARNING OUTCOMES

- Understand the multi-faceted nature of problems in public nutrition.
- Gain knowledge about techniques of assessment of nutritional status especially at the community level.
- Be aware of the various aspects of nutrition education and promotion.
- Be familiar with the policy and intervention programmes operating in India to overcome malnutrition.

UNIT I: Concept and scope of public nutrition	5
--	----------

- Definition and multidisciplinary nature of public nutrition
- Concept and scope
- Role of public nutritionist

Wadhwa A. and Sharma S (2003). *Nutrition in the Community-A Textbook*. Elite Publishing House Pvt. Ltd. New Delhi, Chapter 1.1, pg 3 – 16.

UNIT II: Nutritional problems, their implications and related nutrition programmes	
---	--

22

Etiology, prevalence, clinical features and preventive strategies of-

- Protein energy malnutrition, nutritional anaemias, vitamin A deficiency, iodine deficiency disorders
- Obesity, coronary heart disease, diabetes
- Fluorosis

National Nutrition Policy and Programmes - Integrated Child Development Services (ICDS) Scheme, Mid day Meal Programme (MDMP), National programmes for prevention of Anaemia, Vitamin A deficiency, Iodine Deficiency Disorders

Bamji MS, Krishnaswamy K and Brahmam GNV (Eds) (2016). *Textbook of Human Nutrition, 4th edition*. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi, Chapter 17, 18, 19, 20, pg 267 – 329, Chapter 22, 23, pg 359 – 393, Chapter 29, pg 491 – 499, Chapter 31, pg 517 – 522, Chapter 32, pg 537 – 548.

Wadhwa A. and Sharma S (2003). *Nutrition in the Community-A Textbook*. Elite Publishing House Pvt. Ltd. New Delhi, Chapter 7.2, pg 301 – 320.

UNIT III: Assessment of nutritional status	18
---	-----------

- Objectives and importance
- Methods of assessment : Clinical signs, Nutritional anthropometry, Biochemical tests, Biophysical tests, Diet surveys, Vital statistics

Bamji MS, Krishnaswamy K and Brahmam GNV (Eds) (2016). *Textbook of Human Nutrition, 4th edition*. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi, Chapter 8, 9, 10, pg 121 – 163.

Wadhwa A. and Sharma S (2003). *Nutrition in the Community-A Textbook*. Elite Publishing House Pvt. Ltd. New Delhi, Chapter 5.1, pg 165 – 190.

UNIT IV: Nutrition Education	15
-------------------------------------	-----------

- Objectives, principles and scope of nutrition and health education and promotion
- Behaviour Change Communication : concept and process

Bamji MS, Krishnaswamy K and Brahmam GNV (Eds) (2016). *Textbook of Human Nutrition, 4th edition*. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi, Chapter 34, pg 563 – 575,

Wadhwa A. and Sharma S (2003). *Nutrition in the Community-A Textbook*. Elite Publishing House Pvt. Ltd. New Delhi, Chapter 6.2, pg 261 – 275.

PRACTICAL	CONTENT	DURATION: 60 HRS (Credits 2)
------------------	----------------	-------------------------------------

- Planning of low cost nutritious recipes for infants, preschoolers, pregnant/nursing mothers for nutrition education.
- Assessment of nutritional status:
 - Anthropometry – weight and height measurements
 - Plotting and interpretation of growth charts for children below 5 years
 - Identification of clinical signs of common nutritional disorders
 - Dietary assessment – FFQ and 24 hour diet recall and diet diversity
- Preparation of a communication aid for nutrition promotion.
- Planning and conducting a food demonstration.
- Visit to an ongoing nutrition and health promotion programme.

COMPULSORY READING

- Bamji MS, Krishnaswamy K and Brahmam GNV (Eds) (2016). *Textbook of Human Nutrition, 4th edition*. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.
- Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). *Indian Food Composition Tables*. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
- Wadhwa A. and Sharma S (2003). *Nutrition in the Community-A Textbook*. Elite Publishing House Pvt. Ltd. New Delhi.

ADDITIONAL RESOURCES

- Gibney M.J., Margetts, B.M., Kearney, J. M. Arab, I., (Eds) (2004). *Public Health Nutrition*, NS Blackwell Publishing.
- Park K (2017) *Park's Textbook of Preventive and Social Medicine, 24th Edition*. M/s Banarsidas Bhanot Publishers, Jabalpur, India.
- Vir, S.C. (2011). *Public health nutrition in developing countries Part 1*. Woodhead Publishing India limited.
- Vir, S.C. (2011). *Public Health Nutrition in Developing Countries. Part 2*. Woodhead Publishing India.

TEACHING LEARNING PROCESS

- Class Discussions/ Demonstrations
- Power point presentations
- Class activities/ assignments
- Field visits

15. Research Methodology in Home Science

CC HH 601: RESEARCH METHODOLOGY IN HOME SCIENCE (CREDITS: THEORY-4, PRACTICAL-2)

COURSE OBJECTIVES

- To compare and contrast quantitative and qualitative research approaches
- To identify appropriate sampling methods, measurement scales and tools of data collection and appropriate uses of each
- To demonstrate knowledge of the key steps of a research process in both experimental and observational research

COURSE LEARNING OUTCOMES

- Compare and contrast quantitative and qualitative research approaches
- Identify appropriate sampling methods, measurement scales and tools of data collection and appropriate uses of each
- Demonstrate knowledge of the key steps of a research process in both experimental and observational research

THEORY CONTENT DURATION: 60 HRS (Credits 4)

UNIT I: Research- Meaning, purpose and approaches 20

- Exploration, Description, Explanation
- Scientific method and research
- Quantitative and Qualitative approaches
- Research Designs –Experimental and Observational

Conceptualization and Measurement

- Variables, concepts and measurement
- Levels of measurement
- Units of analysis

Kerlinger F. N. and Lee, H.B. (2000) Foundations of Behavioural Research 4th Ed. Harcourt College Publishers, Chapter 1,3,18,26.

Kumar, R. (2005) *Research Methodology: A Step by Step Guide for Beginners*. Sage Publications, New Delhi. Chapter-1,5,8

Ramamurthy, G.C., (2011), *Research Methodology*, Dreamtech Press India Private Limited, New Delhi. Chapter -1,3,5

UNIT II: Sampling & Tools 20

- Role of sampling in research
- Types of sampling

Research Tools and Techniques

- Validity and reliability
- Interviewing and observational methods

- Scales

Kumar, R. (2005) *Research Methodology: A Step by Step Guide for Beginners*. Sage Publications, New Delhi. Chapter-9,11,12

Ramamurthy, G.C., (2011), *Research Methodology*, Dreamtech Press India Private Limited, New Delhi. Pages 85,86,88,89,89-98.

UNIT III: The Research Process

20

- Defining the problem, research questions, objectives, hypotheses
- Review of related literature and originality in writing
- Planning the research
- Subjects context and ethics
- Methodology and tools
- Data reduction, analysis and representation
- Citation formats: in medical sciences, social sciences

Kumar, R. (2005) *Research Methodology: A Step by Step Guide for Beginners*. Sage Publications, New Delhi .Chapter-2,3,4,6,9,10,14,17.

Ramamurthy, G.C., (2011), *Research Methodology*, Dreamtech Press India Private Limited, New Delhi. Chapter -2

PRACTICAL

CONTENT

DURATION: 60 HRS (Credits 2)

- Probability and Non Probability sampling methods
- Designing data collection tools and planning their analysis: Indepth interviews, questionnaire, FGDs, Case studies.
- Data collection process: conducting interviews, FGDs, case studies
- Compiling data and data reduction
- Making and analysis of tables and graphs.

COMPULSORY READING

- Kerlinger F. N. and Lee, H.B. (2000) *Foundations of Behavioural Research 4th Ed*. Harcourt College Publishers
- Kumar, R. (2005) *Research Methodology: A Step by Step Guide for Beginners*. Sage Publications, New Delhi.
- Ramamurthy, G.C., (2011), *Research Methodology*, Dreamtech Press India Private Limited, New Delhi.

ADDITIONAL RESOURCES

- Black, J.A. and Champion, D. J. (1976) *Methods and Issues in Social Research*. New York: John Wiley and Sons.
- Kothari, C. R. (2008) *Research Methodology: Methods and Techniques 2nd Ed*. New Age International Private Ltd, New Delhi.

TEACHING LEARNING PROCESS

- Lecture method, Videos, PowerPoint Presentations, Discussion, Puzzles, Games etc.

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

KEYWORDS

•Research Methods, Qualitative quantitative approaches, Research Designs, Sampling, Research Tools, Data collection

Facilitating the achievement of Course Learning Objectives

Unit. No	Course Learning Outcomes	Teaching and Learning activities	Assessment tasks
1	Compare and contrast quantitative and qualitative research approaches	Presentation on research approaches and research designs, identification of types of approaches and designs through journal articles, discussion on various levels of measurement	Quiz, match the following
2	Identify appropriate sampling methods, measurement scales and tools of data collection and appropriate uses of each	Presentations on role of sampling in research, types of sampling, scales, validity and reliability	Quiz, class test
3	Demonstrate knowledge of the key steps of a research process in both experimental and observational research	Presentations on Defining the problem, research questions, objectives, hypotheses Review of related literature and originality in writing Discussion on Planning the research , Methodology and tools Data reduction, analysis	assignments, quiz, MCQs, Preparing a list of references

70

		and representation Presentation on Citation formats: in medical sciences, social sciences	
--	--	--	--

*Assessment tasks listed here are indicative and may vary

16. Socio Economic Environment

CC HH 602: SOCIO ECONOMIC ENVIRONMENT (CREDITS: THEORY-4, PRACTICAL-2)

COURSE OBJECTIVES

- To gain and understand the various roles and responsibilities of family.
- Discuss various issues in community life of Indian society : Rural, urban and tribe
- Understand the major economic problems of India and their implications in society.
- To gain knowledge about various development policy measures adopted in the country.

COURSE LEARNING OUTCOMES

- Understand various dimensions of the family changing roles and responsibilities.
- Unfold perspectives and issues in community life of Indian society: Rural, urban and tribal.
- Gain knowledge about various dimensions of society and culture.
- Apprehend the basic concepts of economics and their utilization in day today life.
- Gain an understanding of National Income in India, working of the banking structure, monetary and fiscal policy and the balance of payment situation in India.
- Comprehend the major economic problems of India and their implications in society.
- Understand various development policy measures adopted in the country.

THEORY	CONTENT	DURATION: 60 HRS (Credits 4)
---------------	----------------	-------------------------------------

UNIT I: Sociological Orientation		15
---	--	-----------

- Society ,Culture and Institution
- Family, Kinship and Relationships
- Social Groups and Multiplicity
- Cultural diversity in contemporary life

Abraham, M.F. (2006). Contemporary Sociology: An introduction to concepts and theories: New York:Oxford University Press. (Chapter 11,4,5,9,7)

Das.V. (Ed.) (2003) .The Oxford companion to sociology and social anthropology: volume 1 and 2. New Delhi:Oxford University Press. (Chapter 2,7)

Davis,K.(1978) Human Society. University of California ,Berkeley.
(Chapter1,8,11,14,15)

UNIT II: Emergence of New Ideological Orientations**15**

- Social mobility and social change
- Emergent cultural stereotype
- Ethnographic approaches to study the groups
- Appreciating cultural plurality, interconnection between the spheres
- Sociological studies of children, youth and women: problems and challenges

Beattie, J. (1964). *Other Cultures*. Cohen and West. (Chapter 5,9, 14)

Das.V. (Ed.) (2003) .*The Oxford companion to sociology and social anthropology: volume 1 and 2*. New Delhi:Oxford University Press. (Chapter 2,3,4)

UNIT III: Introduction to Economics**15**

- Definition, scope of Economics.
- Central problems of an economy
- Wants – Classification and Characteristics.
- Utility – Law of Diminishing Marginal Utility, Law of Equi-Marginal Utility
- Law of Demand & supply, Elasticity.
- Engel's Law of Consumption.
- Consumer's Surplus
- Equilibrium of Demand and Supply, market.
- Factors of Production– land, labour, capital and organisation
- National Income estimates
- Money-Types & functions of money, Measurement of the value of money-Index number, Inflation
- Types & functions of Banks
- Revenue, Taxation and International trade, Balance of payment problems in India

Ahuja H.L. Latest edition. *Modern Micro Economics*. Sultan Chand & Sons (bilingual)

UNIT IV: Indian Economic Environment**15**

- Indian Economy: Changing structure, Economic planning & NITI Aayog
- Growth and Development indicators
- Constraints on growth: Issues of population, income distribution, poverty, unemployment, inequality and migration, food security, health, education, gender and environment
- Current developmental policies of the Government of India

Mishra & Puri. Latest edition. *Indian Economy*. Himalaya Publishing House.

PRACTICAL CONTENT DURATION: 60 HRS (Credits 2)

A. Sociology practical

- Changing family roles and responsibilities in society.
- Individual facing conflicts and consensus in society.
- Field visit to different communities (urban/ rural/ Slum)
- Visit to Religious places of worship.
- Case study, narratives, films, field trips to study different cultures of India.

B. Economics Practical

- Field visit: To gain knowledge for entrepreneurship, to do market survey from both Consumers' and producers' point of view
- Case studies on current economic issues
- Organizing workshop/ seminar
- Debate and discussion on various economic issues

COMPULSORY READING

- Abhraham, M.F.(2006) . *Contemporary Sociology : An introduction to concepts and*
 - Ahuja H.L. Latest edition. *Modern Micro Economics*. Sultan Chand & Sons (bilingual)
 - Mishra & Puri. Latest edition. *Indian Economy*. Himalaya Publishing House.
- Theories*. New York : Oxford University Press.

ADDITIONAL RESOURCES

- Beattie, J. (1964). *Other cultures*. Cohen and West
- Bhushan Vidya & Sachdeva .D.R. (2011). *An Introduction to Sociology*: New Delhi: Kitab Mahal Publishers.
- Das.V.(Ed.) (2003) .*The Oxford companion to sociology and social anthropology* :
- Datt; Sundharam, latest edition, *Indian economy*, S. Chand.
- Dewett, K. K.; Navalur, M.H. latest edition. *Modern economic theory*. S. Chand
- Jhigan , M.L. latest edition. *Money, banking, international trade and public finance*. VrindaPublications
- Mithani D.M., latest edition, *Macro-Economics*. Himalaya Publishing House Penguin.
- Rawat. H.K. (2007) . *Sociology: Basic concepts*. New Delhi: Rawat Publications.
- Srinivas, M.N. (Ed.) 1996. *Caste: Its twentieth century avatar*. New Delhi: Viking
- Sundaram K.P.M., latest edition, *Introduction to Economics*. Ratan Prakashan volume 1 and 2 . New Delhi : Oxford University Press.

TEACHING LEARNING PROCESS

- Lecture method

- Power- Point presentations
- Debate and Discussions
- Survey
- Case Study

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

KEYWORDS

- Department of Resource Management & Design Application
- Department of Human Development & Childhood Studies
- Sociological
- Kinship
- Cultural diversity
- Ethnographic approaches
- Micro Economics
- Macro Economics
- Indian Economic Environment

Facilitating the achievement of course learning objectives

Unit	Course Learning Outcomes	Teaching and Learning Activities	Assessment Tasks
I	Students will be acquainted with the sociological orientation of the concept of society and contemporary life	Discussion on the effect of changing family roles and responsibility and its effect on the society more emphasis will be given on the individual understanding and facing conflicts and consensus in the society. In-depth understanding of the cultural diversity will be covered to learn about various components of culture, institution and groups	Case study method, documentary movies, newspaper article review, objective questions and written test will be conducted to execute the learning outcome
II	Students will have gained knowledge on	Theory classes on different system of social	Students presentation with specific case study, essay

	different cultural stereotypes	mobility and social change with ethnographic approaches will be covered in visual aids and power point presentations. Secondly discussion will take place on sociological studies of children youth and women focusing on the portrayal of women and youth in the contemporary world with visual aids.	writing and poster making on different social cause to have better understanding about the topic
III	Apprehend the basic concepts of economics and their utilization in day to day life.	Theory classes on concept of economics, wants, utility, demand, consumer surplus, engels law of consumption, supply and factors of production	Class test focusing on definitions, short notes, match the following
IV	Comprehend the major economic problems of India and their implications in society. Understand various development policy measures adopted in the country.	Theory classes on Indian Economy, growth and developmental indicators, current developmental policies and constraints on growth	Student presentations, case study evaluation quiz and, debate
Field Visit	Students will gain knowledge to understand the changing families and its effect in the society	To study effect of changing family roles and responsibility and its effect on the society (interview method) To study the role of youth facing conflicts and consensus in the society (questionnaire method) To study the problems and challenges faced due to the changing roles and responsibility of elderly in the society across culture (Interview method, Observation) Visit an art gallery/ culture-specific area like “Delhi Haat” and use	Students will do field visit and conduct interviews observation questionnaire to study various topics. File work will be maintained. Discussion will take place after every practical and analysis will be done in depth

		<p>observation technique to get an understanding of various dimensions of specific societies, their social and cultural norms (for example- work culture, the role of gender, art forms and the foods).</p> <p>Visit any religious place of worship to comprehend (through non-participant observation) the rituals, beliefs, practices, norms, and taboos of the particular setting.</p>	
Audio visual aids and workshop	Students will gain knowledge to understand the cultural diversity in India which reflects unity in diversity and gender stereotypes	<p>Review of diverse Indian socio-cultural context through Audio-Visual aids and Print media.</p> <p>Make a poster to highlight the newly evolved and persisted stereotypes related to a particular gender in the family, workplace and largely in the Indian society.</p> <p>Organize a workshop to comprehend how to use ethnography as a research method.</p>	Students presentations, report writing
Field visit	To gain knowledge for entrepreneurship, to do market survey from both Consumers' and producers' point of view	Discussion on various opportunities and problems faced by the Indian entrepreneurs and also the rights and problems of the consumers.	Student Presentations.
Case studies on current economic issues	Understand various development policy measures adopted in the country.	Practical classes on current developmental policies and constraints on growth.	Student presentations, case study evaluation.
Organizing workshop/ seminar	To gain the understanding of various economic issues.	Discussion on various economic issues.	Student Presentations

Debate and discussion on various economic issues	Comprehend the major economic problems of India and their implications in society.	Practical classes on Indian Economy, growth and developmental indicators.	quiz and, debate
--	--	---	------------------

*** Assessment tasks listed here are indicative and may vary**

17. Life Science For Home Science

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC HS 206): LIFE SCIENCE FOR HOME SCIENCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
LIFE SCIENCE FOR HOME SCIENCE DSC HS 206	4	2	0	2	12th Pass	NIL

Learning Objectives

- To impart the basic knowledge of animal diversity, plant diversity and its significance for human life.
- To make students aware of the fundamental process of plant growth and its regulation.
- To enable students to learn about methods of sustainable agriculture, plant conservation and propagation.
- To make students aware of immunology, genetics and biotechnology.

Learning Outcomes

- The students would be able to identify and appreciate some common plant and animal diversity in their vicinity.
- The students would understand the fundamentals of genetics and its significance in human life.
- The students would gain hands-on experience and training on gardening and plant propagation techniques along with the artificial methods of vegetative propagation.
- The students would acquire the basic knowledge of biotechnology along with recent trends and its applications in agriculture, animal husbandry and human welfare and associated ethical and social issues.
- The students would acquire knowledge about various zoonotic diseases, pandemics and learn about its control and management.
- The students would understand the importance prenatal screening and natal health.

THEORY

Section A – Botany

Unit I: Introduction to Plant Kingdom

(08 Hours)

Plant kingdom, plant growth and regulation, Economically Important Plants

- Introduction to Plant Diversity
- Economic importance of Microbes (Industrial & Household Products, Sewage treatment, Biogas production, Biocontrol agents, Bio-fertilizers)
- Angiosperm plants: Morphology (Parts of plants with modifications and Life cycle)
- Plant Nutrition and Soil: Essential Elements and Functions, Nutrient cycles, Human Impact on nutrient cycles and effects of pollution
- Plant growth and Development- Regulation and control (Hormones)
- Enzymes: principles and biotechnological applications
- Introduction to Economically important plants: Food Crops, Fibre Crops, Medicinal Plants, Oil Crops, Timber Plants

Unit II: Propagation, Gardening and Conservation of Plants

(06 Hours)

Plant propagation methods, Sustainable Agriculture, Biotechnology in Agriculture

- Seed Propagation
- Vegetative Propagation: Cuttings – stem leaf and root, Layering, Grafting, Tissue Culture
- Gardening: Concept and Types with example of Kitchen Garden, Green Roofs, Maintenance of plants
- Sustainable Agriculture: Concept of Organic farming, IPM, Biopesticides, Climate smart agriculture, Seed bank, Urban Agriculture
- Concept of Sustainable development with Sustainability Indicators
- Role of Plants in Air Pollution Control
- Principles and Applications of biotechnology in agricultural crops

Section B – Zoology

Unit III: Animal Diversity and Human Needs

(08 Hours)

Animal diversity and its importance to humans

- Types, Structure and Function of Animal Cell and its components (Chromosomes and Nucleus)
- Animal diversity and its distribution
- Animals and their ecosystem services: role of animals in soil health, pollination, biological control of pests, food security
- Threatened species of animals and their conservation
- Zoonotic and Parasitic diseases- Life cycle, pathogenesis and control. (*Plasmodium*, *Giardia*, *Entamoeba*, *Taenia*, *Ascaris*, *Covid-19*, *malaria*, *tuberculosis*)
- Animals as economic resources: sericulture, apiculture, aquaponics (concept and applications)

Unit IV: Immunity, Genetics and Biotechnology

(08 Hours)

Basics of human immunity, Pandemics, genetic diseases, application of biotechnology, developmental biology

- Basics of Human Immunity: introduction to humoral and cell mediated immunity; Vaccination
- Introduction to Pandemics and its management
- Genetic diseases and importance of Genetic counselling
- Birth defects and its causes (genetic and environmental factors)
- Application of biotechnology: Stem cells, cloning and animal improvements

PRACTICAL – 60 Hours

SECTION A- BOTANY

1. Preparation of soil mixture, potting and re-potting
2. Raising of healthy seedlings in a nursery bed
3. Assessment of soil quality: determination of soil pH, test for nitrates, nitrites
4. Propagation of plants through stem cutting, air layering and underground layering
5. Propagation of plants by approach grafting and veneer grafting
6. Identification and classification of economically important Food crops, Medicinal plants
7. Identification and classification of economically important plants: Fibre crops, Timber plants and Oil crops
8. Identification, Care and maintenance of important plants in controlling air pollution
9. A visit to Home Garden/ Organic farm/ Tissue culture Lab
10. Demonstration of Urban Home Gardens/ Kitchen Garden / Nutrition Garden
11. Study of techniques of biotechnology through audio visual aids

SECTION B- ZOOLOGY

1. Study of cell Structure through temporary slides: Blood Cells
2. Study of cell Structure through temporary slides: Neurons
3. Study of cell cycle stages through permanent slides: Mitosis
4. Study of cell cycle stages through permanent slides: Meiosis
5. Identification of few common animals and birds in the human environment
6. Estimation of species richness and abundance of animal/ birds in the human environment using point count method
7. Estimation of species richness and abundance of animal/ birds in the human environment using transect method
8. Soil biomonitoring using Burlese-Tullgren method: concept and importance of micro and macrofauna in soil health
9. Detection of chromosomal abnormalities: concepts and interpretation of diagnostic tests: Karyotyping
10. Detection of chromosomal abnormalities: concepts and interpretation of diagnostic tests: Dual marker test
11. Visit to any one of the following: Aquaponic facility/organic farm/ bee farm
12. Case study of a zoonotic/ parasitic disease: COVID-19 pandemics/ bird flu

Essential Readings

- Jordan E. L. and Verma P. S., 2009. Invertebrate Zoology, S. Chand and Co. Ltd, New Delhi.
- Park K., 2016. Textbook of preventive and social medicine. Banarsidas Bhanot Publishers.
- Raven P. and Johnson G., 2010. Biology. Tata McGraw Hill Publication, New Delhi.
- Singh J. S, Singh S. P. and Gupta S. R., 2017. Ecology, Environment Science and Resource Conservation. S. Chand (G/L) & Company Ltd, India.
- Soni N. K. and Soni V., 2010. Fundamentals of Botany. Tata McGraw Hill Publication, New Delhi.

Suggested Readings

- Chadha K. L. 2012. Handbook of Horticulture. ICAR Publication, New Delhi.
 - Gopalaswamianger K.S. 1991. Complete gardening in India, Messers Nagaraj and Co., Madras.
 - Gupta R. 2015. Fundamentals of Zoology: Theory and Practice. Elite Publishing House Pvt. Ltd., New Delhi.
 - Hartman H.T and Kester D. 1986. Plant Propagation: Principles and Practices Prentice Hall of India Pvt. Ltd., New Delhi.
 - Kotpal R. L. 2000. Modern Textbook of Zoology, Rastogi Publications, Meerut.
 - Magurran, A. E. 1988. Ecological Diversity and Measurement. Croom Helm Limited, Australia.
 - Upadhyay R. 2017. Elements of Plant Science, Elite Publishing House, New Delhi.
- Vij, U. and Gupta, R. 2011. Applied Zoology Phoenix Publishing House, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

18. Physical Sciences

CC HH 502: PHYSICAL SCIENCES (CREDITS: THEORY-4, PRACTICAL-2)

COURSE OBJECTIVES

- To develop understanding of the working and principle of different household and scientific equipment and to familiarize with the precautions while handling them.
- To acquire knowledge of different compounds and their importance in day to day life.
- To enhance their skills in handling different equipment.

COURSE LEARNING OUTCOMES

- They acquire the ability to correlate structures of different compounds like biomolecules, polymers and dyes etc with their properties and functions.

19. Nutritional Biochemistry

DSE HH 02: NUTRITIONAL BIOCHEMISTRY (CREDITS: THEORY- 4, PRACTICAL- 2)

COURSE OBJECTIVES

- To attain knowledge on basic concepts of biochemistry.
- To obtain an insight into the role of biomolecules in biological processes.
- To develop an understanding of metabolism.

COURSE LEARNING OUTCOMES

- Develop an understanding of the principles of biochemistry (as applicable to human nutrition).
- Obtain an insight into chemistry of major nutrients and physiologically important biomolecules.
- Understand the biological processes and systems as applicable to nutrition.
- Apply the knowledge acquired to human nutrition and dietetics.

THEORY	CONTENT	DURATION: 60 HRS (Credits 4)
---------------	----------------	-------------------------------------

UNIT I: Carbohydrate Metabolism

22

- Basic concepts of Enzymes: Active site, coenzymes, prosthetic groups
 - Factors affecting enzyme activity: pH, temperature, substrate concentration
 - Enzyme inhibitions: Competitive, non-competitive and allosteric
 - Carbohydrate structures
 - Glycolysis and oxidation of pyruvate
 - Citric Acid Cycle and ATP synthesis
 - Glycogenolysis
 - Gluconeogenesis and the control of blood glucose
- Murray, R. K. 1. (2012). *Harper's illustrated biochemistry* (29th ed.). New York: McGraw-Hill Medical, Chapter 7,8,9,14,17,18,19,20.
- Nelson, D. L. 1. Lehninger, A. L., & Cox, M. M. (2013). *Lehninger Principles of Biochemistry* (6th ed.). New York: W.H. Freeman, Chapter 7.

UNIT II: Lipid Metabolism

12

- Fatty acids
 - β -Oxidation of fatty acids
 - Ketogenesis and ketosis
- Murray, R. K. 1. (2012). *Harper's illustrated biochemistry* (29th ed.). New York: McGraw-Hill Medical, Chapter 15,22.
- Nelson, D. L. 1. Lehninger, A. L., & Cox, M. M. (2013). *Lehninger Principles of Biochemistry* (6th ed.). New York: W.H. Freeman, Chapter 10.

UNIT III: Protein Metabolism

12

- Structures of amino acids and proteins
- Transamination of amino acids and formation of glutamate

20. Food science

DISCIPLINE SPECIFIC ELECTIVE (DSE)

DSE HH 01: FOOD SCIENCE (CREDITS: THEORY- 4, PRACTICAL- 2)

COURSE OBJECTIVES

- To understand the basic concepts of food science and its applications in processing of food.
- To gain coherent and systematic knowledge of basic food chemistry.
- To understand basic principles involved in preservation and spoilage.
- To impart knowledge about the national and international food laws.

COURSE LEARNING OUTCOMES

- Understand the basic concepts of food science and its applications in processing of food.
- Gain coherent and systematic knowledge of basic food chemistry.
- Understand role of micro-organisms in relation to processing and spoilage.
- Understand basic principles involved in preservation and spoilage.
- Impart knowledge about the national and international food laws
- Perform basic sensory and objective evaluation of food.

THEORY	CONTENT	DURATION: 60 HRS (Credits 4)
---------------	----------------	-------------------------------------

UNIT I: Introduction to Food Science	6
---	----------

- Definition, importance and applications
- Basic terminology used in food science

Potter NN and Hotchkiss H J (1996). *Food Science*, Fifth Edition. CBS Publication, New Delhi, Chapter 1, pg 1-12.

UNIT II: Basic Food Chemistry	10
--------------------------------------	-----------

- Sources, chemistry and functional properties of Carbohydrates, Lipids and Proteins.
- Colloidal chemistry: Definition, classification, properties and applications of sols, gels, foams and emulsions.

Manay NS and Shadaksharaswamy M (2008). *Food-Facts and Principles, Third Edition*. New Age International (P) Ltd. Publishers, New Delhi, Chapter 2, pg 11-26; Chapter 3, pg 27-34; Chapter 4, pg 35-49.

UNIT III: Basic Food Microbiology	8
--	----------

- Introduction to yeast, mold and bacteria - Characteristics and their role in preservation and spoilage of food.
- Hygiene and sanitation practices in food processing and waste disposal

Frazier WC and Westhoff DC (2014). *Food Microbiology, Fifth Edition*. TMH Publication, New Delhi, Chapter 27, pg 451-455.

Potter NN and Hotchkiss H J (1996). *Food Science, Fifth Edition*. CBS Publication, New Delhi, Chapter 22, pg 520-526.
Sivashankar. B (2002). *Food Processing and Preservation*. PHI learning Pvt. Ltd., Chapter 9, pg 120-131.

UNIT IV: Preservation Techniques, Principles and Their Applications 20

- High temperature, low temperature, removal of moisture, irradiation and additives.
 - Food packaging and labeling: FSSAI, Codex
- Chadha R and Mathur P (eds)(2015). *Nutrition: A Lifecycle Approach*. Orient Blackswan, Hyderabad, Chapter 14, pg 204-219.
Manay NS and Shadaksharaswamy M (2008). *Food-Facts and Principles, Third Edition*. New Age International (P) Ltd. Publishers, New Delhi, Chapter 30, pg 421-445; Chapter 29, pg 402-416.
Mathur P. (2018). *Food Safety and Quality Control*. Orient BlackSwan Pvt. Ltd., Hyderabad, Chapter 3, pg 57-65.
Potter NN and Hotchkiss H J (1996). *Food Science, Fifth Edition*. CBS Publication, New Delhi, Chapter 21, pg 478-509.

UNIT V: Sensory Science 8

- Physiological basis of sensory evaluation and sensory attributes of food.
 - Sensory evaluation: Assessment, subjective and objective.
- Srilakshmi B (2014). *Food Science, 6th Edition*. New Age International Ltd., Delhi, Chapter 13, pg 308-336.

UNIT VI: Food Laws and Quality Assurance 8

- National and International food laws – FSSAI, BIS, AGMARK, Codex and ISO: 22000, ISO: 9000, ISO:14000.
 - Quality Assurance procedures - GMP, GHP, HACCP
- Mathur P. (2018). *Food Safety and Quality Control*. Orient BlackSwan Pvt. Ltd., Hyderabad, Chapter 12, pg 197-206; Chapter 16, pg 268-271.

PRACTICAL CONTENT DURATION: 60 HRS (Credits 2)

- Applications and factors affecting formation of Sols, gels, foams and emulsions
- Study of microscopic structure of different food starches and their gelatinization properties.
- Slide preparation and identification of bacteria, yeast and mold.
- Assessment of hygienic practices of food handlers.
- Preservation of food using different methods (Blanching, Dehydration, Freezing).
- Basic principle involved in food preservation using additives
- Sensory evaluation methods and their applications.
- Food analysis: Moisture, pH, acidity, Total soluble solids by refractometer.
- Evaluation of food labels.

COMPULSORY READING

- Frazier WC and Westhoff DC (2014). *Food Microbiology, Fifth Edition*. TMH Publication, New Delhi.
- Manay NS and Shadaksharaswamy M (2008). *Food-Facts and Principles, Third Edition*. New Age International (P) Ltd. Publishers, New Delhi.
- Mathur P. (2018). *Food Safety and Quality Control*. Orient BlackSwan Pvt. Ltd., Hyderabad.
- Potter NN and Hotchkiss H J (1996). *Food Science, Fifth Edition*. CBS Publication, New Delhi.
- Srilakshmi B (2014). *Food Science, 6th Edition*. New Age International Ltd., Delhi.

ADDITIONAL RESOURCES

- Mohini Sethi, Eram Rao (2011). *Food science- Experiments and applications, Second Edition*. CBSpublishers & Distributors Pvt Ltd.
- Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). *Basic Food Preparation: A Complete Manual, Fourth Edition*. Orient Black Swan Ltd.
- Sivashankar. B (2002). *Food Processing and Preservation*. PHI learning Pvt. Ltd.

TEACHING LEARNING PROCESS

- Lecture methods
- Power point presentations
- Demonstrations

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

Facilitating the achievement of course learning objectives

Unit No.	Course Learning Outcomes	Teaching and Learning activities	Assessment tasks
1.	Students will gain knowledge about scope, importance and applications of Food Science.	Detailed discussion on basic terms used in Food Science, its scope, importance and recent developments in the field of Food Science with examples.	Class test focusing on definitions and Assignment on scope and recent advancement in the field of Food Science.

2	Students will have acquired in-depth knowledge of basic food chemistry	ed discussions on chemistry and functional properties of Carbohydrates, Lipids and Proteins. Interactive lectures on Colloidal chemistry	Student presentations, Quiz, match the following
3	Students will be acquainted with basic concepts of food microbiology and hygiene and sanitation in food processing industries	Detailed discussion on the basic food microbiology and characteristics of microorganisms and their role in preservation and spoilage of food and Hygiene and sanitation practices in food processing and waste disposal	Quiz, Multiple choice questions
4	Students will be acquainted with basic principles involved in food preservation and Food packaging as per food laws.	Detailed discussion on principle, methods and applications of various Food Preservation Techniques using Power point presentations. Discussion on various types of food packaging material, their advantages, disadvantages and applications in food industry.	Quiz, Multiple choice questions and student presentations
5.	Students will acquire in-depth knowledge on Evaluation of Food Quality by sensory and objective methods.	Interactive session with class discussing about Physiological basis of sensory evaluation , sensory attributes of food, requirements for conducting sensory evaluation, tests used for subjective and objective evaluation.	Multiple choice questions, Project.
6	Students will acquire knowledge of the national and international food laws.	Interactive session with class discussing National and International food laws and Quality Assurance procedures	Case studies of various regulatory bodies, quiz and projects

* Assessment tasks listed here are indicative and may vary

21. Home Based Catering

SKILL ENHANCEMENT COURSES (SEC)

SEC HH 01: HOME BASED CATERING (CREDITS: PRACTICAL-4)

COURSE OBJECTIVES

- To comprehend fundamentals of menu planning through management of resources in a food service establishment.
- To develop insight for recipe standardization and to apply acquired skills in menu planning and quantity food production.
- To use knowledge of preliminary steps for starting a home based catering unit.

COURSE LEARNING OUTCOMES

- Comprehend fundamentals of menu planning through management of resources in a food service establishment.
- Develop insight for recipe standardization and quantity food production.
- Use knowledge of preliminary steps for starting a home based catering unit.
- Apply acquired skills in menu planning and quantity food production.

PRACTICAL	CONTENT	DURATION: 120 HRS (Credits 4)
------------------	----------------	--------------------------------------

UNIT I: Introduction to food service

- Kinds of food service establishments
 - a. Market survey of various food products raw and processed in different kind of markets.
 - b. Survey of a nearby home based catering unit.

UNIT II: Food Production

- Menu planning: Importance of menu, Factors affecting menu planning, Menu planning for different kinds of food service units
 - a. Planning menus within specified budget for the following:
 - i. Menu for a birthday party/ nursery school.
 - ii. Packed tiffin lunch for MNC employees.
 - iii. Cyclic menu for catering breakfast, lunch and dinner for PG/ hostel girls.
- Food purchase and storage
- Quantity food production: standardization of recipes, quantity food preparation techniques, recipe adjustments and portion control
 - a. Standardization of a recipe
 - b. Scaling up of recipe for large number of customers

- c. Food stall/ Event catering
 - d. Demonstration of a specialized cuisine
- Hygiene and Sanitation
 - a. Develop a checklist for good hygiene practices

UNIT III: Planning of a Food Service Unit

- Preliminary Planning Survey of types of units, identifying clientele, menu, operations and delivery
- Planning the set up:
 - a. Identifying resources (money, manpower, time, facilities and equipment, utilities)
 - b. Developing Project plan
 - c. Determining investments
 - d. Project Proposal
- FSSAI regulations & licences

COMPULSORY READING

- Knight, J.B. &Kotschevar, L.H. (2000). *Quantity Food Production Planning & Management. 3rd edition* John Wiley & Sons.
- Mohini, S. (2005) *Institution Food Management* New Age International Publishers.
- West, B.B.& Wood, L. (1988) *Food Service in Institutions 6th Edition* Revised By Hargar FV, Shuggart SG, &Palgne Palacio June, Macmillian Publishing Company New York.

ADDITIONAL RESOURCES

- Payne-Palacio, J. &Theis, M. (2011) *Foodservice Management: Principles and Practices 12th ed.*
- Taneja, S. & Gupta, S.L. *Entrepreneur Development- New Venture Creation.* Galgotia Publishing Company.

TEACHING LEARNING PROCESS

- Lecture method
- Power point presentations
- Experiential learning through planning and demonstration

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- Feedback given to students for improving

22. Fashion Studies

DEPARTMENT OF HOME SCIENCE

Category I

B.Sc. (Hons.) Home Science

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC HS 204): FASHION STUDIES

COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
FASHION STUDIES DSC HS 204	4	3	0	1	12th Pass	NIL

Learning Objectives

1. To understand the basics of fashion and the fashion industry.
2. To impart knowledge about functions and theories of clothing.
3. To develop sensitivity towards selection of garments and garment design.

Learning Outcomes

The student will be able to:

1. Identify the role and functions of clothing and recognize the factors affecting the selection and evaluation of clothing.
2. Explain the concept of fashion, its terminology, sources and factors affecting it.
3. Being aware of global fashion centres.
4. Apply the knowledge of elements and principles in design interpretation.

SYLLABUS OF DSC-4

Unit I: Clothes and us

(12 Hours)

This unit introduces the student to key concepts of how and why people started to wear clothes, and what factors are at play in the current times for selecting clothing for the individual.

- Clothing functions and theories of origin
- Clothing terminology
- Individuality and conformity, conspicuous consumption and emulation
- Body shapes
- Selection and Evaluation of quality of ready-made garments
- Selection of clothes for self

Unit II: Understanding fashion

(12

Hours)

This unit will deal with the basic concepts in understanding fashion, from key terms to the why and how of fashion and more contemporary knowledge of fast and slow fashions.

- Fashion cycle
- Terminology
- Theories of fashion adoption
- Sources of fashion research
- Factors favoring and retarding fashion
- Role of a Designer
- Fast Fashion: Characteristics of Fast Fashion, Fast Fashion and Consumer
- Slow Fashion: Characteristics, Slow Fashion as a process, importance of changing from fast to slow fashion

Unit III: Design in Garments**(09 Hours)**

This unit orients the student from a design perspective in garments; the various elements that comprise a garment and the various principles that govern and guide in developing a good design.

- Structural and Decorative Design
- Elements of Design
- Principles of Design

Unit IV: Fashion**(12 Hours)**

This unit will apprise the student on the forecasting process for fashions, functioning of the industry and various garment categories for production.

- Structure and Functioning of Fashion Industry
- Forecasting: Fashion seasons
- Garment Categories
- Fashion Centers
- Careers in Fashion

ESSENTIAL READINGS

- Brown, Patty, Rice J., 1998, *Ready to Wear Apparel Analysis*. Prentice Hall.
- Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, *Individuality in Clothing & Personal Appearance, 6th Edition*, Pearson Education, USA.
- Tate S.L., Edwards M.S., 1982, *The Complete Book of Fashion Design*, Harper and Row Publications, New York.
- Fringes G.S., 1994, *Fashion From Concept to Consumer, 6th edition*, Prentice Hall, New Jersey.

SUGGESTED READINGS:

- R. Andrew, 2018, *Key Concepts for Fashion Industry*, Bloomsbury Publishing, India

PRACTICAL

(30 Hours)

Unit I: Hand stitches

(14 Hours)

This unit will impart hands-on skill for making small products using upcycling of used articles of clothing or home textiles and how value addition may be achieved in garments by using popular embroidery stitches.

- Prepare samples of –
 - Basic hand stitches for creating a seam and edge finishing.
 - Decorative Hand Stitches
- Develop an upcycled product

Unit II: Elements & Principles of Design

(16 Hours)

This unit will train the students to identify the various elements of a design that a garment uses and the principles that are creating an aesthetic design. Eventually a student will be able to effectively use these elements and principles of design to create well designed garments.

- Create a collection of garments for analysis from print and visual media.
- Analyze the various elements that comprise the garments.
Identify the various principles of design used in the selected garments

Essential Readings

- Fringes G.S., 1994, *Fashion From Concept to Consumer*, 6th edition, Prentice Hall, New Jersey.
- Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, *Individuality in Clothing & Personal Appearance*, 6th Edition, Pearson Education, USA.

Suggested Readings:

- Reader's Digest (Eds.). 2002, *New Complete Guide to Sewing*, (Canada) Ltd. Montreal.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

23. Nutrition – A lifecycle Approach

CC HH 402: NUTRITION - A LIFECYCLE APPROACH (CREDITS: THEORY- 4, PRACTICAL- 2)

COURSE OBJECTIVES

- To enable students in understanding the principles of planning nutritionally adequate diets and acquiring knowledge about the nutritional needs and concerns of an individual throughout the life cycle.
- To make them exercise food choices consonant with good health based on sound knowledge of principles of nutrition.
- To provide an overview of nutrition considerations during special conditions for children and adults.

COURSE LEARNING OUTCOMES

- Comprehend the principles of planning nutritionally adequate diets.
- Acquire knowledge about the nutritional needs and concerns of an individual throughout the life cycle.

- Exercise food choices consonant with good health based on sound knowledge of principles of nutrition.
- Understand nutrition considerations during special conditions for children and adults.

THEORY CONTENT

DURATION: 60 HRS (Credits 4)

UNIT I: Principles of meal planning

12

- Food groups and Food exchange list
- Factors affecting meal planning and food related behavior
- Methods of assessment of nutrient requirements
- Dietary guidelines for Indians

Chadha R and Mathur P eds. (2015). *Nutrition : A Lifecycle Approach*. Orient Blackswan, New Delhi. Chapter , pg 15-30

ICMR(2010). *Recommended Dietary Allowances for Indians*. Published by National Institute of Nutrition, Hyderabad.

Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). *Textbook of Nutrition and Dietetics*. Phoenix Publishing House Pvt. Ltd. Unit I, Chapter 2, pg: 7-13

NIN (2011). *Dietary Guidelines for Indians- A Manual. Second edition*. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.

UNIT II: Nutrition during adulthood

20

Physiological changes, RDA, nutritional guidelines, nutritional concerns, energy balance and healthy food choices for

- Adults
- Pregnant women
- Lactating mothers
- Elderly

Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J (2013). *Wardlaw's Perspectives in Nutrition*, McGraw- Hill International Edition, 9th edition..

Chadha R and Mathur P eds. (2015). *Nutrition : A Lifecycle Approach*. Orient Blackswan, New Delhi. Chapter 17,18,19,24; pg 252-301; 355-364

Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). *Textbook of Nutrition and Dietetics*. Phoenix Publishing House Pvt. Ltd. Unit II, Chapter 5,6,9, pg: 47-98; 141-156

UNIT III: Nutrition during childhood

20

Growth and development, growth reference/standards, RDA, nutritional guidelines, nutritional concerns, and healthy food choices.

- Infants
- Preschool children
- School children
- Adolescents

Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J (2013). *Wardlaw's Perspectives in Nutrition*, McGraw- Hill International Edition, 9th edition..

Chadha R and Mathur P eds. (2015). Nutrition : A Lifecycle Approach. Orient Blackswan, New Delhi. Chapter 17,18,19,24; pg 252-301; 355-364

Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd. Unit II, Chapter 5,6,9, pg: 47-98; 141-156

UNIT IV: Nutrition for special conditions: An Overview

8

- Nutrition for physical fitness and sports
- Feeding problems and coping strategies among children with disabilities.
- Considerations during natural and man-made disasters.

Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J (2013). *Wardlaw's Perspectives in Nutrition*, McGraw- Hill International Edition, 9th edition.

Chadha R and Mathur P eds. (2015). Nutrition : A Lifecycle Approach. Orient Blackswan, New Delhi. Chapter 25, 26, pg:365-390

<https://www.who.int/hac/techguidance/en/>

PRACTICAL	CONTENT	DURATION: 60 HRS (Credits 2)
------------------	----------------	-------------------------------------

- Introduction to meal planning
 - ❖ Rich sources of nutrients
 - ❖ Use of food exchange lists
- Planning nutritious diets for:
 - ❖ Adult
 - ❖ Pregnant and Lactating woman
 - ❖ Preschooler
 - ❖ School age child and Adolescent
 - ❖ Elderly
- Planning nutrient rich snacks/dishes for:
 - ❖ Infants (Complementary foods)
 - ❖ Children References

COMPULSORY READING

- Chadha R and Mathur P eds. (2015). Nutrition : A Lifecycle Approach. Orient Blackswan, New Delhi.
- ICMR(2010). *Recommended Dietary Allowances for Indians*. Published by National Institute of Nutrition, Hyderabad.
- Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). *Textbook of Nutrition and Dietetics*. Phoenix Publishing House Pvt. Ltd.
- Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). *Indian Food Composition Tables*. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
- Puri S, Bhagat A, Aeri, BT, Sharma A (2019). *Food Exchange List: A Tool for meal Planning*. Elite Publishing House. New Delhi.

51

- Seth V, Singh K, Mathur P (2018). *Diet Planning Through the Lifecycle Part I: Normal Nutrition- A Practical Manual. 6th Edition.* Elite Publishing House, Delhi.
- Siddhu, A, Bhatia, N, Singh, K, Gupta, S (2017). *Compilation of Food Exchange List, Technical Series 6*, Lady Irwin College, University of Delhi Publ. Global Books Organisation, Delhi.

ADDITIONAL RESOURCES

- Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J (2013). *Wardlaw's Perspectives in Nutrition*, McGraw- Hill International Edition, 9th edition..
- NIN (2011). *Dietary Guidelines for Indians- A Manual. Second edition.* National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.

TEACHING LEARNING PROCESS

- Lecture based teaching
- Powerpoint presentations
- Experimental learning through practicals

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

KEYWORDS

Diets, Nutrition, Meal Planning, Pregnancy, Lactation, Children, Adolescents, Food exchange, Nutrition in Lifecycle

Facilitating the achievements of course learning outcomes

Unit No	Course learning outcomes	Teaching and learning activities	Assessment tasks
1	Students will be able to comprehend the principles of planning nutritionally adequate diets.	Discussions on the food groups, factors affecting meal planning and Indian dietary guidelines	Class test focussing on dietary guidelines and factors affecting meal planning
2	Students will acquire knowledge about the nutritional needs and concerns of an individual throughout the life cycle and	Theory classes on physiological changes, RDA, nutritional guidelines and nutritional concerns of adults.	Quiz on physiological changes during pregnancy, lactation and impact on

	learn to exercise correct food choices	Discussions on healthy food choices for	nutritional requirements. Group discussion on diet for elderly.
3	Students will acquire knowledge about the nutritional needs and concerns of infants, children and adolescents.	Interactive discussions on physiological changes from infancy to adolescence, changes in RDA, nutritional guidelines and nutritional concerns among them.	Multiple choice questions, and quiz on nutritional needs of children
4	Students will be able to understand nutrition considerations during special conditions for children, and nutritional considerations for sports and extreme conditions.	Discussions on nutritional requirements for sports, extreme conditions and children with disabilities will be carried out	Presentations on diets for sportspersons, children with disabilities and extreme conditions

*** Assessment tasks listed here are indicative and may vary**

24. Personal Finance and Consumer studies

CC HH 303: PERSONAL FINANCE AND CONSUMER STUDIES (CREDITS: THEORY-4, PRACTICAL-2)

COURSE OBJECTIVES

- To understand the concept of family income, expenditure pattern, savings & investment, market & marketing strategies.
- To enable students to manage their personal finances through various investment avenues.
- To create awareness regarding the legal system and alternative mechanism of consumer redressal.

COURSE LEARNING OUTCOMES

- Gain knowledge of income, saving and investment management in the changing socio-economic environment.
- Understand the role of consumer in the economy, consumer problems, education and empowerment.
- Comprehend issues related to consumer protection, legislative measures and redressal mechanisms.
- Gain practical knowledge of critically evaluating and designing various consumer aids.
- Have a practical understanding of various existing redressal mechanisms.
- Understand the schemes and services offered by banks and post offices and learn to fill various bank and personal income tax forms.
- Learn to undertake food adulteration tests through lab analysis.

UNIT I: Income and Expenditure	18
---------------------------------------	-----------

- Household Income – Types, Sources, Supplementation of family income
- Income management – significance of budgeting, steps of making a budget, controlling through household accounts and evaluation
- Factors influencing expenditure pattern
- Family savings and investments- need, principles, channels of investment, tax implications
- Consumer credit- need, sources
- Personal finance management

Mital, M., Sawhney, H. K. (2015). *Family Finance and Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd. Chapter -6 (Family Income, Pg 53-69), Chapter -7 (Family budgets, Pg 70-86), Chapter -8 (Family expenditure pattern, Pg 87-97), Chapter -9 (Savings: Need; types and determining factors, Pg 98-116), Chapter-10 (Investment: Objectives and sound principles, Pg 117-122), Chapter-11 (Investment channels for financial assets, Pg 123-148), Chapter-12 (Investment through insurance: Life insurance policies, Pg 149-163), Chapter-13 (Investment channels for physical assets, Pg 164-172), Chapter-14 (Investor protection, Pg 173-176), Chapter-15 (family credit, Pg 177-194).

UNIT II: Consumer in India: Consumer problems and education	20
--	-----------

- Definition of a consumer
- Role of consumers in the economy, National Income, Per Capita Income
- Types of consumer problems – products and service related, Causes and remedies
- Guidelines for wise buying practices
- Consumer education and empowerment, sustainable consumption
- Changing nature of the business world –e-commerce, e-business

Mital, M., Sawhney, H. K. (2015). *Family Finance and Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd. Chapter -2 (Role and importance of consumer in the economy, Pg 15-23), Chapter-16 (Market economy: Consumer in the market place, Pg 195-214), Chapter 17 (Consumer empowerment: Consumer rights, Pg 215-232), Chapter 23 (Marketing Communication, Pg 293-320), Chapter-24 (Consumer education movement, Pg 321-334), Chapter 25 (Consumer protection: Need and role of self-help, Pg 335-369).

UNIT III: Consumer Protection	22
--------------------------------------	-----------

- Consumer protection, Consumer rights and responsibilities
- Consumer organizations – origin, functioning, role and types
- Basic legislative framework for consumer protection in India, Consumer

Protection Act 1986 (COPRA), Alternative redressal mechanisms

- Standardization and quality control measures

Mital, M., Sawhney, H. K. (2015). *Family Finance and Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd. Chapter 17 (Consumer empowerment: Consumer rights, Pg 215-232), Chapter 18 (Consumer responsibilities, Pg 233-343), Chapter 25 (Consumer protection: Need and role of self-help, Pg 335-369), Chapter-26 (Voluntary consumer organizations for consumer protection, Pg 370-380), Chapter 27 (Consumer protection through private aids, Pg 381-392), Chapter-28 (Legal protection, Pg. 393-439), Chapter-29 (Alternative agencies for redressal, Pg 440-452), Chapter-30 (Consumer Protection Act 1986, Pg 453-468).

PRACTICAL	CONTENT	DURATION: 60 HRS (Credits 2)
------------------	----------------	-------------------------------------

- Understanding and designing standardization marks.
- Evaluation and designing of informative and attractive labels of different type of food products.
- Evaluation and designing of advertisements in the print media including products, services and social ads.
- Case study of banks and post offices to understand their services and products.
- Learning to fill different bank forms.
- Analysis of consumer redressal through case study approach.
- Survey on consumer issues.
- Food adulteration tests.
- Personal Income Tax calculation.

COMPULSORY READING

- Mital M., Jain, S., & Mehta, C. (2015). *Family finance and Consumer Studies: A Practical Manual, Second Edition*. New Delhi: Elite Publishing House Pvt. Ltd.
- Mital, M., Sawhney, H. K. (2015). *Family Finance and Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd.
- Seetharaman, P. and Sethi, M. (2001). *Consumerism: Strength and Tactics*. New Delhi: CBS Publishers.

ADDITIONAL RESOURCES

- Arora, R. *Consumer Grievances Redressal*. New Delhi: Manak Publications.
- Khanna, S. R., Hanspal S., Kapoor S. & Awasthi H.K. (2007). *Consumer Affairs*. Universities Press India Pvt. Ltd.

TEACHING LEARNING PROCESS

- Power point presentations
- Case study approach

- Lecture and discussion
- Experiential learning through demonstration

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

KEYWORDS

- Department of Resource Management & Design Application
- Household income
- Income management
- Expenditure patterns
- Personal Finance
- Consumer credit
- Consumer education and empowerment
- Consumer rights and responsibilities
- Consumer Protection Act (COPRA)
- Standardization marks
- Food adulteration

Facilitating the achievement of course learning objectives

Unit No.	Course Learning outcomes	Teaching and learning activities	Assessment Tasks
1	Gain knowledge of income, saving and investment management in the changing socio-economic environment.	Classroom discussion on the concept of money and income, classification of income giving emphasis on the various components of family income with suitable examples. Designing the various kinds of household record keeping methods.	Quiz and Multiple choice questions on various categories of family income. Evaluation of various household record keeping methods implementing in their families.

2	Understand the role of consumer in the economy, consumer problems, education and empowerment.	Theory classes on various types of economy with diagrammatic representation of running the different types of economy. Power-point presentation on the various problems faced by the consumer in the market. Interactive lectures on consumer education and empowerment.	Drawing the various models of working of an economy, Case-study approach to study the consumer problems related to product and services, Assignment on various aspects of consumer empowerment.
3	Comprehend issues related to consumer protection, legislative measures and redressal mechanisms.	Interactive lectures on various measures of consumer protection such as legislative machinery, voluntary consumer education, standardization and quality.	Quiz and Class test focussing on various consumer protective measures.
4	Gain practical knowledge of critically evaluating and designing various consumer aids.	Practical examples focussing the designing of various teaching aids such as label designing, advertisement designing, various standardization & quality marks.	Diagrammatic representation of the consumer education aids such as label designing, advertisement designing etc.
5.	Have a practical understanding of various existing redressal mechanisms.	Interactive lectures giving the detailed account of various existing redressal mechanisms.	Case-study approach on understanding various existing redressal mechanisms.
6.	Understand the schemes and services offered by banks and post offices and learn to fill various bank and personal income tax	Group discussion on various investment avenues. Illustration of various kinds of saving and investment avenues by giving practical	Class test for filling the various account opening forms and other forms of bank and post office.

	forms.	examples.	
7.	Learn to undertake food adulteration tests through lab analysis.	Demonstration on analysing the various adulterants present in the sample commonly being used at household level.	Students will perform the adulteration test to analyse the various adulterants present in the food sample followed by class test.

*** Assessment tasks listed here are indicative and may vary**

25. Introduction to Textiles

CC HH 301: INTRODUCTION TO TEXTILES (CREDITS: THEORY-4, PRACTICAL-2)

COURSE OBJECTIVES

- To impart knowledge regarding production, properties and usage of textile fibres and yarns
- To create awareness regarding various techniques of fabric production and their properties
- To give an overview of dyeing, printing and finishing of textiles

COURSE LEARNING OUTCOMES

- Describe textile fibres in terms of their production and properties
- Understand production techniques and properties of yarns
- Explain various methods of fabric construction and relate them to specific uses keeping in mind fabric properties
- Recall various dyeing, printing and finishing techniques

UNIT I: Introduction to Textile Fibres
6

- Morphology of textile fibres: Monomer, Polymer, Degree of Polymerisation, Crystalline and Amorphous Regions, Orientation
- Primary and secondary properties
- Fibre classification

Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc. Chapter 2, 3, 4 Pages 10-36

Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited. Chapter 1 Pages 3-19

Sekhri S. (2013). *Textbook of Fabric Science: Fundamentals to Finishing*. Delhi, India: PHI Learning. Chapter 2, 3, 4 Pages 9-38

UNIT II: Production, Chemistry, Properties and Usage of Fibres
14

- Natural fibres: Cotton, Flax, Silk and Wool
- Man-made fibres: Rayon, Nylon, Polyester, Acrylic, Olefins (Polyethylene and Polypropylene) and Elastomeric fibres

Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc. Chapters 6-14, Pages 45-127

Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited. Chapter 2, 3 Pages 20-56

Sekhri S. (2013). *Textbook of Fabric Science: Fundamentals to Finishing*. Delhi, India: PHI Learning. Chapters 5, 6, 7, 8 Pages 41-119

UNIT III: Production and Properties of Yarns
10

- Yarn construction:
 - Mechanical Spinning (Cotton system, Wool system, Worsted system)
 - Chemical Spinning (Wet, Dry, Melt)
- Types of yarns: Staple and Filament, Simple yarns, Complex yarns
- Yarn properties-Yarn Numbering System, Yarn Twist
- Textured yarns: Types and properties
- Difference between Threads and Yarns
- Blends: Types of blends and purpose of blending

Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc. Chapter 17-20, Pages 143-178

Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited. Chapters 4, 5 Pages 89-122

Sekhri S. (2013). *Textbook of Fabric Science: Fundamentals to Finishing*. Delhi, India: PHI Learning. Chapters 9, 10 Pages 123-151

UNIT IV: Techniques of fabric construction **12**

- **Weaving**

- Parts of a loom
- Operations and motions of the loom
- Classification of weaves- construction, characteristics, usage

- **Knitting** **5**

- Classification of knits
- Construction and properties of warp and weft knits

- **Non-wovens** **3**

- Types
- Construction
- Properties and usage

Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc. Chapters 21-24 Pages 179-245

Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited. Chapters 6-8 Pages 123-200

Sekhri S. (2013). *Textbook of Fabric Science: Fundamentals to Finishing*. Delhi, India: PHI Learning. Chapter 11-13 Pages 155-201

UNIT V: Basics of Wet Processing **10**

- **Dyeing**

- Fundamentals of dyeing
- Stages of dyeing

- **Printing**

- Fundamentals of printing
- Difference between dyeing and printing,
- Methods of printing: Block, Screen
- Styles of printing: Direct, Resist, Discharge, Transfer, Digital

- **Finishes:**

- Classification of finishes,
- Routine finishes
- Selected special finishes

Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc. Chapters 25-28 Pages 247-308

Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited. Chapters 9-13 Pages 201-317

Sekhri S. (2013). *Textbook of Fabric Science: Fundamentals to Finishing*. Delhi, India: PHI Learning. Chapters 14, 15 Pages 205-244

PRACTICAL	CONTENT	DURATION: 60 HRS (Credits 2)
------------------	----------------	-------------------------------------

- Fibre Identification tests –Visual, burning, microscopic and chemical
- Yarn Identification – Single, ply, cord, textured, elastic, monofilament, multifilament and spun yarn
- Thread count and balance
- Yarn count
- Dimensional stability
- Weaves- Identification and their design interpretation on graph
- Fabric analysis of light, medium & heavy weight fabrics (five each)
 - Fibre type
 - Yarn type
 - Weave
 - GSM
 - End use
 - Trade name
- Tie and Dye

COMPULSORY READING

- Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc.
- Rastogi, D, Chopra, S., Arora, C. & Chanchal. (Eds.). *Textile Science-A Practical Manual*. (2016). New Delhi, India: Elite Publishing House Pvt. Ltd.
- Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited.

ADDITIONAL RESOURCES

- Collier B. & Tortora G. Phyllis. (1997) *Understanding Textiles*. USA: Merrill
- Corbman, P.B. (1983). *Textiles- Fiber to Fabric*. (6th Edition). USA: McGraw Hill.
- Sekhri S. (2013). *Textbook of Fabric Science: Fundamentals to Finishing*. Delhi, India: PHI Learning.

TEACHING LEARNING PROCESS

- Lectures, Power Point presentations
- Experiential learning through demonstrations

ASSESSMENT METHODS

Quiz, Class test, Assignments, Presentations, Project

KEYWORDS

Department of Fabric and Apparel Science, Fibres, Yarns, Fabrics, Weaving, Knitting, Nonwovens, Blends, Dyeing, Printing, Finishing, Spinning, Loom, Felts, Yarn Numbering System, Yarn Twist, Finishes

Facilitating the achievement of course learning objectives

Unit No.	Course Learning Outcomes	Teaching and Learning Activities	Assessment Tasks
1.	Students will be able to understand the molecular structure and morphology of textile fibres and relate them to the properties	Interactive lecture on Molecular structure in terms of crystalline and amorphous and its relation to various properties	Diagrammatic presentations of molecular structure
2.	Students will be able to classify and describe textile fibres in terms of their production and properties	Discussions on the classification of fibers their primary and secondary properties, origin and production	Quiz, small activities like match the following
3.	Students will be able to identify types of yarns, understand various yarn production techniques and yarn properties	Interactive lectures on the various types of yarns, their properties and methods of yarn production	Quiz, match the following, MCQ and students presentation
4.	Students will be able to develop understanding about various fabric manufacture techniques and identify different kinds of fabric. Learn about the properties and uses of various fabric types	Detailed discussions on fabric construction along with demonstration of samples of weaving, knitting and non-woven production methods	Diagrammatic representation of weaving, knitting and non-woven. Objective test on definitions and production steps of fabric manufacture techniques and fabric identification
5.	Students will be able to understand the basic dyeing and printing techniques. Classify various types of finishes and recall, their method of application on textiles	Discussion on basics of dyeing, various styles and methods of printing and types of finishes applied to the fabrics	Quiz, match the following, MCQ and students presentation

* Assessment tasks listed here are indicative and may vary

26. Communication System And Mass Media

CC HH 302: COMMUNICATION SYSTEMS AND MASS MEDIA (CREDITS: THEORY-4, PRACTICAL-2)

COURSE OBJECTIVES

- To gain understanding of various communication systems.
- To appreciate nuances of various communication transactions for effective communication.
- To understand role of culture in communication.
- To gain insight into the range and scope of traditional media, mass media, ICTs and New Media especially for social change.

COURSE LEARNING OUTCOMES

- Understanding of various communication systems.
- Appreciate nuances of various communication transactions for effective communication.
- Understand role of culture in communication.
- Gain insight into the range and scope of traditional media, mass media, ICTs and New Media especially for social change.

THEORY	CONTENT	DURATION: 60 HRS (Credits 4)
--------	---------	------------------------------

UNIT I: Understanding Self		8
-----------------------------------	--	----------

- Awareness of self in communication
- Intrapersonal Communication
- Self-concept and self esteem

Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan. ISBN: 9788125063254; Chapter 9

Barker, L & Gaut, D. (1996) *Communication*. Pearson Education, 7th edition, USA.; Chapter 5

UNIT II: Interpersonal Communication		15
---	--	-----------

- Concept, types and functions of interpersonal communication
- Dyadic, small and large group communication
- Stages in human relationship development
- Small group communication: types and functions
- Theories of small group communication, types of networks in small groups

Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan. ISBN: 9788125063254; Chapter 10

Barker, L & Gaut, D. (1996) *Communication*. Pearson Education, 7th edition, USA.; Chapter 6

UNIT III: Organization and Public Communication		25
--	--	-----------

- Organizational communication: concept, types, functions and networks
- Public communication- concept and techniques

- Intercultural communication- concept, stages and barriers
- Relationship between culture and communication

Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan. ISBN: 9788125063254; Chapter 12, 13, 5

Barker, L & Gaut, D. (1996) *Communication*. Pearson Education, 7th edition, USA.; Chapter 8, 9, 11, 12

UNIT IV: Mass Communication and Mass Media

12

- Mass Communication- concept, significance, functions and elements
- Theories and models of mass communication-
- Mass Media- characteristics and significance of print, electronic and web based media
- Print Media: types, nature, characteristics, reach, access.
- Radio: types, nature, characteristics, reach, access.
- Television and cinema: types, nature, characteristics, reach, access.
- ICTs: types, characteristics, reach and access.

Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan. ISBN: 9788125063254; Chapter 14, 15, 16

Barker, L & Gaut, D. (1996) *Communication*. Pearson Education, 7th edition, USA.; Chapter 13

PRACTICAL

CONTENT

DURATION: 60 HRS (Credits 2)

- Exercises for understanding Self.
- Studying group dynamics in organizations- formal and informal.
- Audience analysis- readership, listenership and viewership studies
- Content analysis of mass media

COMPULSORY READING

- Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan. ISBN: 9788125063254
- Barker, Larry Lee. (1990) *Communication*. Eaglewood Cliffs, New Jersey: Prentice Hall.
- DeVito, J. (1998). *Human Communication*. New York: Harper & Row
- Vivian, J. (1991). *The Media of Mass Communication*. Boston : Allyn and Bacon.

ADDITIONAL RESOURCES

- Baran, S. (2014) *Mass Communication Theory*. Wadsworth Publishing
- McQuail, D. (2000) *Mass Communication Theories*. London: Sage Publications
- Stevenson, D. (2002) *Understanding Media Studies: Social Theory and Mass Communication*, Sage Publications

TEACHING LEARNING PROCESS

- Lecture method, Videos, PowerPoint Presentations, Discussion, Role Play, Games etc.

ASSESSMENT METHODS

- As per University of Delhi norms
- Continuous evaluation of practicals and skill courses on pre-decided key
- Internal Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving

KEYWORDS

Interpersonal Communication, Organisational Communication, Mass Communication, Extension, SBCC, Communication systems, Mass media Theories, Self-Concept

Facilitating the achievement of course learning objectives

Unit No.	Course Learning Outcomes	Teaching and Learning activities	Assessment Tasks
1	Students will be able to learn about the ways of being aware and in turn the importance of self in communication. Also the other aspects of Intrapersonal Communication will be discussed in length giving way to the understanding of Self-concept and self esteem.	Interactive lectures with the help of cards, with live examples and audio visual aids.	Students presentations
2	Students will learn Concept, types and functions of interpersonal communication. Stages in human relationship development will also be understood. Also the types and levels of human communication will be elaborated including the Dyadic, small and large group communication. And Students will be able to perform assessment with respect to the types and functions of Small group communication as well as Theories and networks of small group communication..	Interactive lectures using group discussions, case studies and audio visual aids.	Question and answers
3	Student will have in-depth knowledge of the field of Organizational communication, its concept, types, functions and networks. Also Public communication- concept and techniques. The students will also be learning the concept of Intercultural communication and the stages and barriers related to it. The relationship	Detailed discussions with pre worked on power point presentations and audio visual aids.	Test focusing on short notes and definitions

	between culture and communication will help the students to understand the scope of human communication in more deeper way.		
4	Students will be acquainted with the concept, significance, functions and elements of Mass Communication. The Theories and models of mass communication will also be understood. Students will be able to examine growth of Mass Media by learning about its characteristics and significance. Students will learn the concept of Print Media, Radio, ICTs, Television and cinema and also their types, nature, characteristics, reach, access.	Detailed discussions, case studies, power point presentations and audio visual aids.	Question and answers

*** Assessment tasks listed here are indicative and may vary**

27. Food Science And Nutrition

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-HH 102) Food Science and Nutrition

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Food Science and Nutrition	4	3	0	1	Class XII With Science	-

Learning Objectives

1. To understand the relationship between food, nutrition and health.
2. To describe the function of various nutrients and list their sources.
3. To understand the nutritional contribution of and effect of cooking on different food groups.
4. To describe ways of reducing nutrient losses during cooking and methods of enhancement of nutritional quality of foods.
5. To be able to prepare dishes using principles of food science.

Learning outcomes

After completing this course, students will be able to:

1. Understand the relationship between food, nutrition and health.
2. Describe the digestion, absorption and function of various nutrients and list their sources.
3. Understand the nutritional contribution of and effect of cooking on different food groups.
4. Understand ways of reducing nutrient losses during different methods of cooking and methods of enhancement of nutritional quality of foods.
5. Prepare dishes using principles of food science and assess serving size and nutritional contribution.

SYLLABUS OF DSC- 2

Unit I: Basic Concepts in Food and Nutrition

(5 hours)

Unit Description: An introduction to the sciences of food and nutrition and their relationship to health and disease.

Subtopics: • Basic terms used in study of food and nutrition • Understanding relationship between food, nutrition and health • Functions of food-Physiological, psychological and social

Unit II: Nutrients

(15 hours)

Unit Description: Functions, dietary sources and clinical manifestations of deficiency/ excess of the nutrients

Subtopics: • Energy, Carbohydrates, lipids and proteins • Fat soluble vitamins • Water soluble vitamins • Minerals

Unit III: Food groups

(15 hours)

Unit Description: Structure, composition, products, nutritional contribution, selection and changes during cooking of various food groups

Subtopics: • Cereals and Pulses • Fruits and vegetables • Milk & milk products • Eggs • Meat, poultry and fish • Fats and Oils • Spices and herbs • Beverages

Unit IV: Methods of Cooking and Enhancing the Nutritional Quality of Foods (10 hours)

Unit Description: Different methods of cooking and ways to improve nutrient retention or improve nutritional quality

Subtopics: • Dry, moist, frying and microwave cooking • Advantages, disadvantages and the effect of various methods of cooking on foods • Preventing losses of nutrient during cooking • Improving nutritional quality of diets by Food synergy, Germination, Fermentation, Fortification and Genetic Modification of foods

Practical component – 30 Hours

Unit I • Weights and measures; preparing market order and table setting

Unit II Food preparation, understanding the principles involved, nutritional quality and portion size- • Cereals: Boiled rice, pulao, chapati, paratha-plain/stuffed, poori, pastas • Pulses: Whole, dehusked, pulse curry • Vegetables: Dry preparation, vegetable curry • Milk preparations: Kheer, porridge, custard • Egg preparations: Boiled, poached, fried, scrambled, omelettes, egg pudding • Soups: Plain and cream soups • Baked products: cakes, biscuits/cookies • Snacks and Breakfast Cereals: pakoras, cutlets, samosas, cheela, upma/poha, sandwiches • Salads: salads and salad dressings

Essential readings

1. Chadha R and Mathur P (eds)(2015). Nutrition: A Lifecycle Approach. Hyderabad: Orient Blackswan.
2. Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition. New Delhi: Elite Publishing House Pvt Ltd.
3. Srilakshmi B (2014). Food Science, 6th Edition. Delhi: New Age International Ltd.
4. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.
5. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Hyderabad: Orient Black Swan

Suggestive readings (if any)

1. Bamji MS, Krishnaswamy K, Brahmam GNV (2016). Textbook of Human Nutrition, 4th edition. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J. (2013). Wardlaw's Perspectives in Nutrition, International Edition, 9th edition, New York: McGraw- Hill.
3. Sethi P, Lakra P. Aahar Vigyan, Poshan evam Suraksha (Hindi); First Ed; 2015; Delhi: Elite Publishing House (P) Ltd.

28. Human Development 1: The Early years

DEPARTMENT OF HOME SCIENCE

BSc. (Hons.) Home Science Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-HH101) Human Development I: The Early Years

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Human Development I: The Early Years	4	3	0	1	Class XII with Science	-

Learning Objectives

1. To develop an understanding about the discipline of Human Development
2. To gain an insight of development in different domains from conception to early childhood

Learning outcomes

After completing this course, students will be able to:

1. Develop an understanding about the discipline of Human Development
2. Acquire knowledge of development in different domains from conception through infancy and early childhood.
3. Understand the salient features of human development by getting acquainted with various methods of studying children.

SYLLABUS

Unit I: Introduction to Human Development (9 hours)

Unit Description: The unit presents the student with an overview of the discipline of Human Development. The student will develop an understanding of basic ideas and terms that are central to the study of Human Development.

Subtopics: • Human Development: Definitions, nature and scope • Domains and stages of development • Principles of development • Contexts of development

Unit II: Prenatal development and childbirth (9 hours)

Unit Description: The unit describes the process of development from conception to birth and elaborates on the hereditary and environmental influences that play a role in prenatal development

Subtopics: • Conception and stages of prenatal development • Influences on prenatal development • Prenatal care • Childbirth: Methods and birth complications

Unit III: Neonate and infant development (12 hours)

Unit Description: The unit draws focus to the first two years of life and provides an understanding of the physical-motor, socio-emotional, cognitive and language development of infants.

Subtopics: • Capacities of the neonate • Infant care practices • Physical motor development
• Socio-emotional development • Language development • Cognitive development

Unit IV: Development during early childhood (12 hours)

Unit Description: The unit traces the progression in development that occurs from 2-6 years of life.

Subtopics: • Physical Motor Development • Socio-Emotional Development • Language Development • Cognitive Development

PRACTICAL (30 hours)

Unit 1 • Narrative method: recalling and recording an event • Exploring cultural practices and traditions during - Pregnancy - birth - Infant care

Unit 2 • Observation method: - observing infants and preschool children in everyday settings - recording the observations • Neonatal assessment (APGAR scale and Neonatal reflexes) • Multi-media resources to study prenatal development, infancy, early childhood

Essential readings

1. Berk, L. (2013). Child development. 9th ed. Boston: Pearson.
2. DECE-1 Organising Child Care Services (IGNOU Study Material)
<https://www.egyankosh.ac.in/handle/123456789/32288>
3. Dixit, A. (2019). Baal Vikas (1st ed.). Doaba House.
4. Journey of the first 1000 days: Rashtriya Bal Swasthya Karyakram (2018) Ministry of Health and Family Welfare.
5. https://nhm.gov.in/images/pdf/programmes/RBSK/Resource_Documents/Journey_of_The_First_1000_Days.pdf
6. Patni, M. (2020). Baal Vikas (3rd ed.). Star Publications.
7. Santrock, J.W. (2011). Life-span development. New York: McGraw-Hill.
8. Singh, A. (Ed.) 2015. Foundations of Human Development. New Delhi: Tata McGraw
9. Hill. Chapter 2,
10. Snow, C.W. (1997). Infant Development. New Jersey, Prentice-Hall Inc.

Suggested Readings

1. Joshi, P. & Shukla, S. (2019). Child development and education in the twenty-first century. Singapore: Springer International
2. Khalakdina, M. (2008). Human development in the Indian context: A socio - cultural focus:
1. India: Sage.

29. Communication concepts and Theories

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3) COMMUNICATION CONCEPTS AND THEORIES

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Communication Concepts and Theories	4	3	0	1	Class XII pass with Science	

Learning Objectives

1. To learn about the concept, nature, and scope of communication.
2. To understand the process of communication with the help of theories, models, and elements of communication.
3. To recognize and appreciate the role of Perception, Empathy, Persuasion, Culture and Listening in communication.
4. To be able to comprehend the various communication transactions and their role in day-to-day life with special reference to public communication.
5. To understand the relationship between culture and communication and its applications in real life settings.

Learning outcomes

The students would be able to:

1. Develop a clear understanding of the concepts of human communication.
2. Comprehend the elements and models governing the process of effective communication.
3. Gain understanding about the related concepts of communication such as Perception, Empathy, Persuasion and Listening
4. Understand the various communication transactions as well as the qualities and skills required of an effective public speaker.
5. Appreciate the role and application of factors for effective communication.

SYLLABUS OF DSC-3

Unit I: Communication: Core Concepts

(10 Hours)

Unit Description: The Unit 1 explores the fundamentals of Human Communication tracing the history of communication from the olden times to the present times. It highlights the concept, nature, types, scope, and postulates of communication and discusses the functions performed through communication

Subtopics: ● Historical background, concept, nature, functions, and scope of communication ● Types of Communication – Formal and informal communication; Verbal and Non-verbal communication; Digital and Non-digital communication ● Verbal communication- Principles, types, effective use of verbal messages for communication ● Non-verbal communication- functions, types, skills, channels of non-verbal communication, inter-relationship between culture and non-verbal skills ● Elements of communication - Source, Message, Channel, Receiver, Feedback, Context, Noise & Effects

Unit II: Communication Models and Theories

(10 Hours)

Unit Description: The Unit II emphasizes the models and theories of the communication process. The further delves on the importance of these models and theories for understanding the effectiveness of communication as a process.

Subtopics: ● Models of Communication: Types of models- Linear, Interaction and Transaction models, (Models by Aristotle, Harold Laswell, Shannon & Weaver, Charles Osgood, Wilbur Schramm, Helical model) ● Theories of Communication: Mass Society, Propaganda, Limited Effects, Individual Difference and Personal Influence

Unit III: Factors for Effective Communication

(13 Hours)

Unit Description: The Unit delves with intricate concepts such as Empathy, Persuasion, Perception and Listening that are associated with communication. The unit also discusses the relationship between culture and communication.

- Factors for effective communication: Definitions, goals and principles of Empathy, Perception, and Persuasion
- Empathy: Concept and Theories
- Perception: Concept and Theories
- Listening in Human Communication-Listening process, significance of good listening, styles of listening, barriers to listening, culture and listening, listening theories
- Culture and communication- Relationship between culture and communication, signs, symbols and codes in communication

Unit IV: Communication Transactions and Learning

(12 Hours)

Unit Description: The Unit III elucidates upon the various levels of communication transactions. This Unit in particular lays thrust on the Public communication and 'need and importance' of communication for learning. The unit also highlights the concept of communication for development.

Subtopics: • Levels of communication transactions • Public communication- Concept, types, techniques and skills in public speaking, qualities of an effective public speaker, overcoming speaker apprehension • Communication, and Learning: Learning as Communication Process, Domains of Learning. Theories of learning • Audio-Visual Aids in communication- definitions, functions, classification including Edgar Dale's Cone of Experience • Communication for Development- Concept and approaches

Practical components – 30 Hours

- Exercises to understand visual communication: Elements of Art and Principles of Design
- Exercises to explore dimensions of non-verbal communication
- Hands on practice with different types of public speaking
- Exercises in effective listening skills
- Exercises on building empathy for effective communication
- Analysis and designing of IEC materials

Essential readings

Devito, J. (2012). Human Communication. New York: Harper & Row.

Barker, L. (1990). Communication, New Jersey: Prentice Hall, Inc; 171.

Anand, S. & Kumar, A. (2016). Dynamics of Human Communication. New Delhi: Orient Black Swan.

Vivian, J. (1991). The Media of Mass Communication. Pearson College Div; 11th edition (19 March 2012).

Punhani & Aggarwal (2014). Media for Effective Communication. Elite Publishers, New Delhi.

Suggestive readings

Patri, V. R. and Patri, N. (2002). Essentials of Communication. Greenspan Publications

Baran, S. (2014). Mass Communication Theory. Wadsworth Publishing.

Stevenson, D. (2002). Understanding Media Studies: Social Theory and Mass Communication, Sage Publications.

McQuail, D. (2000). Mass Communication Theories. London: Sage Publications.

Zeuschner, R. (1997). Communicating Today. California State University, USA.

30. Applied Social Psychology -1

Chi-Square: Chi-Square as a Measure of Discrepancy between Expected and Observed Frequencies: assumptions and calculation.

Parametric and Non-Parametric Statistics: Characteristics and differences

REFERENCES

- Aron, A., Aron, E. N., & Coups, E. J. (2007). *Statistics for Psychology* (4th ed). India: Prentice Hall.
- King, B. M., & Minium, E. W. (2007). *Statistical Reasoning in the Behavioral Sciences* (5th ed.). USA: John Willey.
- Dyer, C. (2001). *Research in Psychology: A Practical Guide to Research Methodology and Statistics* (2nd ed.). Oxford: Blackwell Publishers.
- Freeman, F. S. (1972). *Theory and practice of psychological testing*. New Delhi: Oxford & IBH.
- Gregory, R. J. (2006). *Psychological Testing: History, Principles, and Applications* (4th ed.). New Delhi: Pearson Education.
- Mohanty, B., & Misra, S. (2015). *Statistics for behavioral and social sciences*. New Delhi: Sage Publications.
- Newman, W. L. (2008). *Social research methods: Qualitative and quantitative approaches*. New Delhi: Pearson Education.

TEACHING LEARNING PROCESS

The purpose of the teaching learning process is to focus on student-centric learning and endeavours to create a learning environment where the students' interest in psychology is enhanced and also knowledge gained in the process. Various teaching methods has been adopted to enhance the students learning such as lectures, classroom discussions; technology enabled learning, workshops, classroom activity, presentations etc. Tutorials classes give students the personal space to clarify their doubts and have one to one interaction with the teacher.

ASSESSMENT METHODS

Home assignments, class test, term papers, presentations.

KEYWORDS

Psychological testing and assessment, sampling technique, scale construction, inferential statistics, hypothesis testing, Parametric and non-parametric statistics.

✓ CS: APPLIED SOCIAL PSYCHOLOGY- I

Core Course - (CC) Credit: 6

COURSE LEARNING OUTCOMES

- Describe the key concepts and methods relevant to the study of social psychology
- Differentiate between the fields of social psychology & applied social psychology
- Understand and improve the relationship between self and others
- Understand the significance of Indigenous social psychology and apply social psychological processes in promoting change in Indian society.

UNIT 1

Introduction: Social Psychology & Applied Social Psychology: Definitions, historical development of the field and current status, Levels of analysis, theoretical approaches (symbolic interactionism, post-modern approach, Methodological approaches in social psychology: experimental and non-experimental; Participatory Rural Appraisal (action research), Social psychology in India.

UNIT 2

Social Cognition: Nature of social cognition, social schema, heuristic, new directions of social cognition; Attribution theory (Heider, Kelley, Jones and Davis, Weiner); attribution biases; Person perception: impression formation and management (definition, process and factors).

UNIT 3

Interpersonal attraction and relationships: Defining interpersonal attraction and its biases, nature of interpersonal relationships, type of relationships and theories.

UNIT 4:

Attitude & Attitude Change: Structure, functions, formation of attitudes, attitude-behavior relationship, Attitude Change: Process of persuasion, related factors, Theories of attitude change, Strategies of promoting attitude and behavior change in India-illustrative case studies in Indian context.

PRACTICALS

Two practicums to be done, one each from the following two areas from two:

Methodological approaches to social psychology:

- Construction of attitude rating scale
- Adaptation of attitude rating scale or questionnaire on any aspect of social behavior, related to the course contents in Indian setting, such as domestic violence, relationship questionnaire, self-esteem questionnaire or any other
- Experimental approach to assess any aspect of social behavior.
- Assessing self, such as self-concept, self-identity, attribution process relationship characteristics, relationship conflicts, attitudes using any qualitative method
- Case study on attitude change and behavior in the Indian context, such as a case study of change in attitude and behavior toward sanitation, corruption, cleanliness or any other

Training and adopting strategies of change.

- Self-improvement strategies (Improving self-esteem, dealing with self-identity issues or self-biases, attribution errors or any other)
- Strategies and skills of maintaining relationships
- Effective attitude change

REFERENCES

- Aronson, E., Wilson, T.D., & Somers, S.R. (2019 in press). *Social Psychology (10th ed.)*. Indian adaptation. India: Pearson Education Pvt. Ltd.
- Baumeister, R.F., & Bushman, B.J. (2013). *Social Psychology & Human Nature*. Wadsworth
- Hogg, M., & Vaughan, G.M. (2008). *Social Psychology*. Prentice Hall.
- Misra, G. (2009). *Psychology in India: Social and Organizational Processes*. Delhi. Pearson.
- Myers, D.G. (2005). *Social Psychology (8th ed.)*. New Delhi: Tata McGraw Hill Pub. Co. Ltd.

ADDITIONAL RESOURCES

- Fisher, R.J. (1982). *Social Psychology: An Applied Approach* New York: St. Martin's Press. Inc.

Schneider, F.W., Gruman, A. and Coult, L.M.(eds) (2012). *Applied Social Psychology: Understanding and Addressing Social and Practical Problem*. New Delhi: Sage Publications.

TEACHING LEARNING PROCESS

The teaching learning process will be based on lectures, class presentations, text readings, discussions, audio visual methods and practical activities. Lectures will focus on understanding key concepts, theories and debates in the field along with a detailed examination of current research findings. The scope of the lectures will be limited to ideas and themes introduced in prescribed textbooks. In addition, supplemental readings, films and demonstrations will be used to expand upon the topics to be learnt. The course will also emphasize on application programs related to the topics under study. Practicals will focus on critical thinking around, and experimental as well as experiential examination of assumptions underlying various theories about social phenomenon. The course will also provide students opportunity to develop skills in the areas of social action.

ASSESSMENT METHODS

The assessment of this course will be continuous. There will be at least two written assessment situations in addition to the end-semester examination. This will offer students opportunities to develop their writing skills through the completion of essays. On a continuous basis the students are expected to participate in classroom discussions around relevant social phenomena; knowledge of current social affairs and social problems is hence desirable. The communication skills, critical thinking abilities and social awareness of the students is expected to improve through this system of assessment.

KEYWORDS

Applied Social, Social Cognition, Interpersonal attitudes, attitude change.

③

✶ C6: LIFE SPAN DEVELOPMENT

Core Course - (CC) Credit: 6

COURSE LEARNING OUTCOMES

- Assess critically theories of life span development. _____
- Assess the biological, cognitive, and social factors that influence development throughout the lifespan.
- Discuss methodological approaches used to study development.
- Examine developmental issues of adolescents and adults in the Indian context.
- Assess critically issues of disability and aging in the Indian context

UNIT 1

Nature and perspectives of life span development, research methods and designs. Physical development: patterns of growth from prenatal development to late adulthood.

UNIT 2

Cognitive development: Brief introduction to cognitive development: Piagetian, Vygotskian. Language development, Role of language in cognitive development.

UNIT 3

Emotional development (Moral development (Kohlberg); Social context (family, peers, school).

UNIT 4

31. Counselling Psychology

ASSESSMENT METHODS
This will be done through short answer questions covering a wide range of topics. Home and class assignments. Semester end long answer questions to be used to assess in-depth knowledge. The focus of assessment will be on students' understanding of their knowledge and their ability to express their knowledge accurately. KEYWORDS Health, Behaviour, Interventions, Exercise Happiness, subjective well-being, life satisfaction, resilience, optimism.

✓ **C10: COUNSELLING PSYCHOLOGY**
Core Course - (CC) Credit: 6

COURSE LEARNING OUTCOMES

- To equip students understand the meaning and process of counselling including personal and professional aspects of a counsellor.
- To understand the evolution of the profession world-wide including India
- To have a deeper understanding of conventional and contemporary approaches to counselling
- To explore Indian contribution and development in the profession
- Equipping students to apply counselling skills in diverse settings including a multicultural society
- Skill development and training with the help of audio visual aids, participatory exercises, role play and group discussions.
- Sensitization towards contemporary issues and diversity

UNIT 1
Understanding counselling: Definition and goals; personal and professional aspects of a counsellor; ethical considerations; similarities and differences with psychotherapy; historical development of counselling; status of counselling in India, future trends in counselling.

UNIT 2
Conventional approaches to counselling: Person centered approach; Psychoanalytic, Behaviouristic, Beck's Cognitive Therapy, Rational EBT.

UNIT 3
Contemporary approaches: Brief psychodynamic therapy, Narrative therapy, Expressive Arts, Solution focused brief therapy and Yoga.

UNIT 4
Applications of counselling: school, career, grief and trauma counselling, counselling for LGBTQ.

PRACTICALS
Participatory exercises/ case studies/ audio-visuals / role plays/ group discussions for any TWO of the following: Understanding of Counselling process/skills. Training for counselling skills based on any therapeutic modality or stages of counselling. Externships in

(4)

22

32. Understanding psychological Disorders-1

reference to different counselling contexts. Understanding diversity through sensitisation programmes (LGBTQ/gender/culture)

REFERENCES

- Corey, G. (2013) *Theory and Practice of Counseling and Psychotherapy*. Wadsworth
Gladding, S. & Batra, P. (2018) *Counselling: A comprehensive profession*. New Delhi: Pearson
Nelson, R. J. (2012) *Theory and Practice of Counseling and Therapy*. New Delhi: Sage South Asia.
Pandey, A. (2011). *Psychotherapy and Indian thought*. In R. M. M. Cornelissen, G. Misra & S. Varma (Eds), *Foundations of Indian Psychology* (Volume 2, pp 36-63). New Delhi: Pearson
Rao, K. R. & Paranjpe, A. C. (2017). *Psychology in the Indian Tradition*. New Delhi: Springer (Chapter 7: 218-225; chapter 8)
Seligman, L. & Reichenberg, L. W. (2010) *Theories of counseling and Psychotherapy*. New Jersey: Pearson
Sharf, R. S. (2012). *Theories of Psychotherapy and Counseling: Concepts and Cases*. 5th Edition. Belmont: Brooks/Cole (Cengage Learning).

ADDITIONAL RESOURCES

- Rogers, C. (1995) *On Becoming a Person: A Therapist's View of Psychotherapy*. Houghton Mifflin
Seth, S., Bhatia, H. and Chaddha, N. K. (2018). *Counseling Skills: Knowing self and others*. New Delhi: The Reader's Paradise
Yalom, I. (2003) *The Gift of Therapy. An open letter to a new generation of therapists and their patients*. Little Brown Book Group.

TEACHING LEARNING PROCESS

The thrust of the paper shall be on understanding the theoretical underpinnings and skill development through interactive lectures, group discussions, case presentations, role play and other forms of participatory exercises. The engagement purports to keep the students motivated in acquiring new skills and incorporating the new knowledge towards evolving as more sensitive, ethical and competent trainees in the process of counselling.

ASSESSMENT METHODS

Regular participatory exercises, presentations, group discussions, class assignments, home assignments and quizzes

KEYWORDS

Counselling, classical and contemporary approaches, skills training, sensitization

CH1: UNDERSTANDING PSYCHOLOGICAL DISORDERS – I

Core Course - (CC) Credit: 6

COURSE LEARNING OUTCOMES

- Understanding the concept of abnormal behaviour.
- Understanding the clinical picture and etiology of various subcategories of disorders listed in the DSM-5.

- Exploring clinical assessment in an evidence based framework

UNIT 1

Introduction: Understanding abnormal behaviour Understanding classification: DSM & ICD (Latest versions), Clinical assessment.

UNIT 2

Anxiety disorders (clinical picture & etiology): a) Specific Phobias & Social Anxiety Disorder, Panic Disorder, Generalized anxiety disorder.

UNIT 3

Feeding and Eating Disorders (Anorexia Nervosa, Bulimia Nervosa and Binge-Eating Disorder), b) Gender Dysphoria.

UNIT 4:

Schizophrenia : Schizophrenia: clinical picture and etiology

PRACTICALS

- a) Clinical case analysis with use of secondary data including movies (signs, symptoms, Etiology)/ Interview of cases from the above list of disorders.
- b) Test any one: 16PF, MMPI-2, Beck Cognitive Inventories or any other clinically appropriate test.

REFERENCES

- Alloy, L.B., Riskind, J.H. and Manos, M.I. (Latest edition). *Abnormal Psychology: Current Perspectives*. New Delhi: Tata McGraw Hill
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.
- Butcher, J.N., Hooley, J.M., Mineka, S. and Dwivedi, C.B. (2017). *Abnormal Psychology* (16th ed). India : Pearson
- Hooley, J.M., Butcher, J.N., Nock, M.K. and Mineka, S. (2017). *Abnormal Psychology*. 17th ed. (Global Edition) Boston: Pearson
- World Health Organization. (2018). *International statistical classification of diseases and related health problems* (11th Revision).

ADDITIONAL RESOURCES

- B.J., Sadock, V.A. & Ruiz, P (2017) *Kaplan & Sadock's Comprehensive Text Book of Psychiatric*. Walter & Kluwer
- Lippincott Williams & Wilkins. Comer, R.J. (2016) *Fundamentals of Abnormal Psychology* (8th Ed) USA:Worth Publishers
- Sue, D., Sue, D.W., & Sue, S. (2010). *Understanding Abnormal Behaviour* (9th Ed). USA: Wadsworth.
- Carlat, D. J. (2017). *The Psychiatric Interview* (4th Ed). USA: Wolters Kluwer.

TEACHING LEARNING PROCESS

This paper provides an overview of the etiological understanding and therapeutic interventions for the various psychological disorders. An endeavour will be made to create a learning environment for students in which the excitement of learning psychology is enhanced. The curriculum offers interactive interaction between students and teachers using pedagogical technological such as lectures, technology- enabled learning, classroom discussions, use of

33. Foundation Of Industrial/ Organizational Psychology – I

case studies/films and documentaries/fiction, field visits, workshops etc. Furthermore, paper gives emphasis on research practicals using psychometric tools and quantitative-qualitative techniques to be applied in field and experimental setting. The nature of practicals demand smaller groups (10-12 students). The vision is to make every single teacher attentive to the needs of students and to make teaching a collaborative, interactive, and learning experience.

ASSESSMENT METHODS

Students will be assessed on their understanding of disciplinary knowledge, their ability to express their knowledge accurately and aesthetically, their capability to review, design, conduct research and write reports. A variety of assessment methods can be used: written assignments, class tests, home assignments, term papers, project work, class presentations, research reports, viva voce and observation of practical skills

KEYWORDS Disorders, DSM, ICD, clinical picture, etiology, assessment

C12: FOUNDATION OF INDUSTRIAL/ ORGANIZATIONAL _____ PSYCHOLOGY- I (THEORY+ PRACTICAL)

Core Course - (CC) Credit: 6

COURSE LEARNING OUTCOMES

- Developing knowledge of I/O Psychology, and its historical development (especially w.r.t India), Understanding ideas and issues related to organizational behaviour, OB model, organizational structure, and organizational designs.
- Displaying knowledge related to employee attitudes such as Job Satisfaction, Organizational Commitment, Organizational Citizenship behaviour; and Perceived Organizational Support.
- Developing knowledge and skills related to employee selection, psychological assessment, performance appraisal and training.

UNIT 1

Historical Background of Industrial and Organizational Psychology with inputs from India; Understanding Organizational Psychology, Organizational Behaviour (OB); OB Models (Robbins and Parikh & Gupta); Elements of Organizational structure; Common Organizational Designs and New Design Options.

UNIT 2

Individuals' Attitudes: Causes and Consequences Job Satisfaction; Organizational Commitment; Organizational Citizenship behaviour; Perceived Organizational Support (POS). Employee Engagement and Karma Yoga

UNIT 3

Selection: Principles and Techniques; Psychological Testing & Interview; Performance Appraisal.

UNIT 4

Concept and model; On and off -the site training methods, Management training methods; Evaluation of training.

PRACTICALS

7

34. Understanding Psychological Disorders-II

C13: UNDERSTANDING PSYCHOLOGICAL DISORDERS – II Core Course - (CC) Credit: 6

COURSE LEARNING OUTCOMES

- To be able to describe the symptoms of different psychological disorders.
- To discuss the causal factors of the disorders
- To highlight the various treatments of the disorders
- To obtain 'hands on' experience through the field work and assessment of the disorders.

UNIT 1

Clinical picture & etiology of the following: a) Bipolar I, II, Cyclothymia b) Persistent Depressive Disorder, Major Depressive Disorder.

UNIT 2

Attention Deficit/Hyperactivity Disorders) Autism Spectrum Disorders) Intellectual Disabilities & Specific Learning Disorder.

UNIT 3:

Functional Neurological Symptom Disorder (Clinical picture & etiology), Personality Disorders (Cluster A, B, C clinical picture only).

UNIT 4

Obsessive Compulsive Disorder (Clinical picture & etiology), Biological treatment interventions, Overview of psychological therapeutic interventions.

PRACTICALS

Case history and MSE

Observation of at least two cases from the list of disorders studied in Sem. V & VI

REFERENCES

- Alloy, L.B., Riskino, J.H. and Manos, M.I. (Latest edition). *Abnormal Psychology: Current Perspectives*. New Delhi: Tata McGraw Hill
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.
- Butcher, J.N., Hooley, J.M., Mineka, S. and Dwivedi, C.B. (2017). *Abnormal Psychology* (16th ed). India : Pearson
- Hooley, J.M., Butcher, J.N., Nock, M.K. and Mineka, S. (2017). *Abnormal Psychology*. 17th ed. (Global Edition)
- World Health Organization. (2018). *International statistical classification of diseases and related health problems* (11th Revision).

ADDITIONAL RESOURCES

- B.J., Sadock, V.A. & Ruiz, P. (2017) *Kaplan & Sadock's Comprehensive Text Book of Psychiatric*. Walter & Kluwer/ Lippincott Williams and Wilkins.
- Carlat, D. J. (2017). *The Psychiatric Interview* (4th Ed). USA: Wolters Kluwer.
- Comer, R.J. (2016) *Fundamentals of Abnormal Psychology* (8 th Ed) USA:Worth Publishers
- Sue, D., Sue, D.W., and Sue, S. (2010). *Understanding Abnormal Behaviour* (9th Ed). USA:Wadsworth.

TEACHING LEARNING PROCESS

This paper provides an overview of the etiological understanding and therapeutic interventions for the various psychological disorders. An endeavour will be made to create a learning environment for students in which the excitement of learning psychology is enhanced. The

27

9

PRACTICALS

10

28

Any TWO (Simulated Exercise/ Workshop: Power, Leadership, Motivation, ELPOB(any one))2. One Field based practicum based on the above units.

REFERENCES

- Greenberg & Baron, (2008). *Behaviour in Organization*, 9th (Ed.) Pearson.
Jex, Steve M. & Britt, Thomas W (2014) *Organizational Psychology: A Scientist-Practitioner Approach*, 3rd Edition, Wiley International
Luthans, F, Brett C. Luthans, Kyle W. (2015). *Organizational behaviour: An evidence based approach*, 13th Edition. McGraw Hill
Parikh, N. & Gupta, R. (2010). *Organization Behaviour*. Tata Mc.Graw Hill Education, New Delhi
Robbins, S.P., Judge T.A. (2017) *Essentials of Organizational Behaviour*, Pearson Education

ADDITIONAL RESOURCES

- Pareek, U. (2010). *Understanding Organizational Behaviour*. Oxford: Oxford University Press.
Prakash, A. (2011). Organizational Behaviour in India: An Indigenous Perspective. In G. Misra (Ed.), *Handbook of Psychology*. New Delhi: Oxford University Press.
Roethlisberger, F.J. & Dickson, W.J. (1939). *Management and the Worker*. Cambridge, Massachussetts: Harvard University Press.
Schermerhorn, Jr., Osborn, J.G. Uhl-Bien, M. & Hunt, J.R. (2013). *Organizational behaviour*. New Delhi: Wiley India.

TEACHING LEARNING PROCESS

This paper provides understanding of the historical and contemporary trends in the domain of organisational psychology. The approach would be to bridge gap between ideas and their execution, and facilitating new managerial practices adapted to emerging business realities. The curriculum offers interactive interaction between students and teachers using pedagogical technological such as lectures, technology- enabled learning, classroom discussions, use of case studies/films and documentaries/fiction, field visits, workshops etc. Furthermore, paper gives emphasis on research practicals using psychometric tools and quantitative-qualitative techniques to be applied in field and experimental setting. The nature of practicals demand smaller groups (10-12 students). The vision is to make every single teacher attentive to the needs of students and to make teaching a collaborative, interactive, and learning experience.

ASSESSMENT METHODS

Students will be assessed on their understanding of disciplinary knowledge, their ability to express their knowledge accurately and aesthetically, their capability to review, design, conduct research and write reports. A variety of assessment methods can be used: written assignments, class tests, home assignments, term papers, project work, class presentations, research reports, viva voce and observation of practical skills

KEYWORDS: Work Motivation, Power politics, Leadership, Positive Organizational Behaviour

ELECTIVE: DISCIPLINE SPECIFIC DSE (ANY 4) (2 IN SEMESTER- V AND 2 IN SEMESTER-VI)

DSE-1: NEUROPSYCHOLOGY
Discipline Specific Elective - (DSE) Credit: 6