TEERTHANKER MAHAVEER UNIVERSITY
COLLEGE OF PHARMACY

OPEN ELECTIVE COURSES

Under

Choice Based Credit System

[w.e.f. 2021-22]

TEERTHANKER MAHAVEER UNIVERSITY

N.H.-24, Delhi Road, Moradabad, Uttar Pradesh-244001

Website: www.tmu.ac.in

Proposed Syllabus

And

Evaluation Scheme

(OPEN ELECTIVE COURSES)

UNDER

CHOICE BASED CREDIT SYSTEM

TEERTHANKER MAHAVEER UNIVERSITY

(Established under Govt. of U. P. Act No. 30, 2008)

NH-24, Delhi Road, Moradabad (U.P)

Study & Evaluation Scheme
of
Open Elective Courses

SUMMARY

COURSES : Qualitative detection of food product adulterants

Duration : Six Months

Medium : English

Minimum Required Attendance

THEORY
For appearing in examination
80 %

Assessment

INTERNAL	EXTERNAL	TOTAL
25%	**75%**	**100%**

Internal Evaluation

Class Test - 1	Class Test - 2	Class Test - 3	Assignment	Activities	Attendance	Total
Best two out of the three						
5	5	5	5	5	5	25

Study & Evaluation Scheme

Program: Open Elective Courses

S. No.	Course Code	Subject	Periods			Credit	Duration of Exam	Evaluation Scheme		
			L	T	P			Internal	External	Total
1	OEPHA101	Qualitative detection of food product adulterants	2	-	0	02	3	25	75	100
Total			**2**	**-**	**0**	**02**	**-**	**25**	**75**	**100**

L – Lecture	T- Tutorial	P- Practical	C-Credits
1L = 1Hr	1T= 1 Hr	1P= 1 Hr	1C = 1Hr of Theory 1C= 2Hr of Practical

Course Code: **OEPHA101**	**Elective Course – 1** Qualitative detection of food product adulterants	**L-2** **T-0** **P-0** **C-2**
Course Outcomes:	On completion of the course, the students will be :	
CO1.	Understanding the fundamentals of adulteration.	
CO2.	Applying the knowledge in performing various experiments related to detection of adulteration in daily used food products.	
Course Contents:		
Unit-1:	**Introduction to Adulteration:** Definition, Types, reasons and case study of adulteration, Recent surveys on adulteration, FSSAI. **Water:** Living creatures and water, importance and utility, physical and chemical properties of water, scope of adulteration, rapid tests to detect adulteration in water, Adulterated water born pathological conditions.	**6 hours**
Unit-2:	**Milk and milk products:** Introduction, composition of milk, colostrum, FSSAI report on milk adulteration, types and detection methods of adulterants, health harms associated with adulterated milk.	**6 hours**
Unit-3:	**Spices and Condiments:** Introduction, importance, organoleptic characteristics, types and detection methods of adulterants.	**4 hours**
Unit-4:	**Honey, Jaggery, Salts, Sugar and confectionery:** Introduction, importance, characteristics, chemical and physical properties, composition, types and detection methods of adulterants, health hazard associated with consumption.	**4 hours**
Unit-5:	**Fruits, Vegetables and oils:** Introduction, organoleptic characteristics, types and detection methods of adulterants.	**4 hours**
Text Books: (Latest Edition)	1. Handbook On Analysis Of Milk by Srivastava M K 2. Detect Adulteration with Rapid Test by FSSAI	
E- Learning site:	**https://fssai.gov.in/dart/**	

Course Code: OEPHA 151	Qualitative detection of food product adulterants **(PRACTICAL)**	**L-0 T-0 P-4 C-2**
Course Outcomes:	On completion of the course, the students will be :	
CO1.	Understanding the concept of adulteration in food stuffs.	
CO2.	Demonstrating various experimental techniques indetermining adulteration in food products.	
Course Contents:		

1. Water

a) pH test
b) Minerals tests through limit tests
c) Organoleptic tests (Color, odor and taste)
d) Hardness of water

2. Milk and milk products

a) Detection of water in milk
b) Detection of detergent in milk
c) Detection of starch in milk and milk products (khoya, chenna, paneer)
d) Detection of mashed potatoes, sweet potatoes and other starches in ghee/butter

3. Spices and Condiments

a) Detection of foreign resin in asafoetida (hing)
b) Detection of papaya seeds in black pepper
c) Detection of exhausted cloves in clove

4. Honey, Jaggery, Salts, Sugar and confectionery

a) Detection of sugar solution in honey
b) Detection of chalk powder in sugar/pithi sugar/jaggery
c) Detection of urea in sugar
d) Differentiation of common salt and iodised salt
e) Detection of aluminium leaves in silver leaves

5. Fruits, Vegetables and oils

a) Detection of malachite green in green vegetables like bitter gound, green chilli and others.
b) Detection of artificial colour on green peas.

6. Sensory Evaluation

Milk, Black pepper, Cloves, Sugar, Atta

Text Books: (Latest Edition)	1. Detect Adulteration with Rapid Test by FSSAI. 2. Food Science Experiments And Applications, 2nd Edition by Sethi	