



FATIMA COLLEGE (AUTONOMOUS)
RESEARCH CENTRE OF HOME SCIENCE

B.Sc HOME SCIENCE -Syllabus -2020-2021
For those who joined in June 2019 onwards
I & II B.Sc Home Science

PROGRAMME CODE : UAHS

PART – I – TAMIL / FRENCH / HINDI– 12 CREDITS

PART – I – TAMIL

Offered by The Research Centre of Tamil

S.N O	SEM.	COURSE CODE	COURSE TITLE	HRS	CRED IT	CIA Mks	ESE Mks	TOT · MKs
1.	I	19TLC1	Language-Modern Literature	5	3	40	60	100
2.	II	19TLC2	Language - Bakthi Literature	5	3	40	60	100
3.	III	19TLC3	Language- Epic Literature	5	3	40	60	100
4.	IV	19TLC4	Language-Sangam Literature	5	3	40	60	100
			Total	20	12			

PART – I –FRENCH

Offered by The Department of French

S.N O	SEM.	COURSE CODE	COURSE TITLE	HRS	CRED IT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19RLC1	PART 1 LANGUAGE FRENCH	5	3	40	60	100
2.	II	19RLC2	PART 1 LANGUAGE FRENCH	5	3	40	60	100
3.	III	19RLC3	PART 1 LANGUAGE FRENCH	5	3	40	60	100
4.	IV	19RLC4	PART 1 LANGUAGE FRENCH	5	3	40	60	100
			Total	20	12			

PART – I – HINDI

Offered by The Department of Hindi

S.N O	SEM.	COURSE CODE	COURSE TITLE	HRS	CRED IT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19DLC1	PART 1 LANGUAGE HINDI	5	3	40	60	100
2.	II	19DLC2	PART 1 LANGUAGE HINDI	5	3	40	60	100
3.	III	19DLC3	PART 1 LANGUAGE HINDI	5	3	40	60	100
4.	IV	19DLC4	PART 1 LANGUAGE HINDI	5	3	40	60	100
			Total	20	12			

PART – II -ENGLISH – 12 CREDITS

Offered by The Research Centre of English

S.N O	SEM.	COURSE CODE	COURSE TITLE	HRS	CRED IT	CIA Mks	ESE Mks	TOT · MKs
1.	I	19E1LB1	BASIC COMMUNICATIVE ENGLISH	5	3	40	60	100
2.		19E1LI1	INTERMEDIATE COMMUNICATIVE ENGLISH	5	3	40	60	100
3.		19E1LA1	ADVANCED COMMUNICATIVE ENGLISH	5	3	40	60	100
4.	II	19E2LB2	ENGLISH COMMUNICATION SKILLS (BASIC)	5	3	40	60	100
5.		19E2LI2	ENGLISH FOR EMPOWERMENT (INTERMEDIATE)	5	3	40	60	100
6.		19E2LA2	ENGLISH FOR CREATIVE WRITING (ADVANCED)	5	3	40	60	100
7.	III	19ELC3	ENGLISH FOR DIGITAL ERA	5	3	40	60	100

8.	IV	19ELC4	ENGLISH FOR INTEGRATED DEVELOPMENT	5	3	40	60	100
			Total	20	12			

ART – III -MAJOR, ALLIED & ELECTIVES – 95 CREDITS

MAJOR CORE COURSES INCLUDING PRACTICALS : 60 CREDITS

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	19N1CC1	HUMAN DEVELOPMENT	5	4	40	60	100
2.		19N1CC2	PHYSIOLOGY	4	3	40	60	100
3.		19N1CC3	LAB IN PHYSIOLOGY	3	2	40	60	100
4.	II	19N2CC4	HUMAN NUTRITION	4	4	40	60	100
5.		19N2CC5	FOOD SCIENCE	4	3	40	60	100
6.		19N2CC6	LAB IN FOOD SCIENCE & NUTRITION	3	2	40	60	100
7.	III	19N3CC7	EXTENSION EDUCATION AND COMMUNICATION	5	4	40	60	100
8.		19N3CC8	FIBER TO FABRIC	4	3	40	60	100
9.		19N3CC9	LAB IN BASICS OF CLOTHING CONSTRUCTION	3	2	40	60	100
10.	IV	19N4CC10	BASICS OF BIOTECHNOLOGY	5	4	40	60	100
11.		19N4CC11	CLOTHING AND FASHION	4	3	40	60	100

12.		19N4CC12	LAB IN CLOTHING AND FASHION	3	2	40	60	100
-----	--	----------	-----------------------------	---	---	----	----	-----

ALLIEDCOURSES- 20 CREDITS

S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19N1ACC1		3	3	40	60	100
2.		19N1ACC2	LAB IN	2	2	40	60	100
3.	II	19N2ACC3		3	3	40	60	100
4.		19N2ACC4	LAB IN	2	2	40	60	100
5.	III	19N3AC1	CATERING & HOTEL MANAGEMENT	3	3	40	60	100
6.		19N3AC2	LAB IN CATERING & HOTEL MANAGEMENT	2	2	40	60	100
7.	IV	19N3AC3	FOOD PRODUCTION AND SERVICE	3	3	40	60	100
8.		19N3AC4	LAB IN FOOD PRODUCTION AND SERVICE	2	2	40	60	100

PART – IV – 20 CREDITS

- VALUE EDUCATION
- ENVIRONMENTAL AWARENESS
- NON MAJOR ELECTIVE
- SKILL BASED COURSES

S.No	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19G1VE1	Value Education (Including Meditation in Action Movement)	1	1	40	60	100

2.		19N1NME1	Non Major Elective – Basics of Nutrition (Offered to other major Students)	2	2	40	60	100
3.	II	19G2VE2	Value Education	1	1	40	60	100
4.		19N2NME	Non Major Elective -Basics of Nutrition (Offered to other major Students)	2	2	40	60	100
5.	III	19G3EE	Environmental Education	1	1	40	60	100
6.		19N3SB1	ENTREPRENEURIAL SKILLS – SURFACE ORNAMENTATION	2	2	40	60	100
7.	IV	19G4EE	Environmental Education	1	1	40	60	100
8.		19N4SB2	ENTREPRENEURIAL SKILLS – CAD	2	2	40	60	100

II B.Sc. HOMESCIENCE**SEMESTER –III***For those who joined in 2019 onwards*

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UAHS	19N3CC7	EXTENSION EDUCATION AND COMMUNICATION	Lecture	5	4

COURSE DESCRIPTION

This course create awareness on principles of extension education and extension teaching methods

COURSE OBJECTIVES

- To understand the concept of community development and panchayat raj.
- To create awareness on women welfare scheme
- To impart knowledge on communication methods
- To develop skill in preparing audio-visual aids
- To understand different extension teaching methods.

UNITS

UNIT – I	EXTENSION EDUCATION	[20 HRS]
-----------------	----------------------------	-----------------

Meaning, objectives and Principles of Extension and definition of Home science extension Allied concepts Formal, Nonformal, Qualities, Role and Functions of Extension Workers

History of CDP in India, Panchayat Raj – Three tier system, Program Planning.

UNIT – II	WOMEN WELFARE PROGRAMMES	[15 HRS]
------------------	---------------------------------	-----------------

RMK, IMY, MGNREGS, PMRY & National livelihood programme, National Rural livelihood mission, National Social Assistance Scheme

UNIT – III	COMMUNICATION	[15 HRS]
-------------------	----------------------	-----------------

Self study - Communication Definition, Meaning, Objectives & Principles

Elements of communication, barriers to communication

UNIT – IV	EXTENSION TEACHING METHODS	[20 HRS]
------------------	-----------------------------------	-----------------

Meaning and teaching, Classification of extension teaching methods

- i. Individual methods: Farm & home visit, farmer's call & personal letters.
- ii. Group methods: Result demonstration, method demonstration, group meetings, study tour.
- iii. Mass methods: Publications – Leaflet, Pamphlet, Folder, mass meetings, exhibition, campaign, newspaper, Radio and T.V.

UNIT – V	AUDIO VISUAL AIDS	[20 HRS]
-----------------	--------------------------	-----------------

Definition, Classification, criteria for selection and evaluation of audiovisual aids & Cone of Experience.

Audio Aids: E-Communication methods, Public address system, Radio

Visual Aids:

- i. Projected: Slides, filmstrip, opaque projection, overhead projection.
- ii. Non - projected: Chalkboard, Bulletin board, flannel graph, flash card, poster diagram, map, chart, graph, specimen and models.

Audio visual aids: Television, Motion pictures, Drama, Puppet show

OPEN EDUCATIONAL RESOURCE:

1. <https://www.economicdiscussion.net/india/community-development-cd-programme/21647>
2. <https://www.worldcat.org/title/extension-education-communication/oclc/808776384>
3. <http://eagri.org/eagri50/AEXT392/lec03.html>
4. <https://www.slideshare.net/MOHDAALENAVI/extension-teaching-84053118>
5. <http://studylecturenates.com/audio-visual-aids-in-education-definition-types-objectives/>
6. <http://lms.tanuvas.ac.in/mod/resource/view.php?id=39787>
7. <https://lidtfoundations.pressbooks.com/chapter/edgar-dale-and-the-cone-of-experience/>
8. https://www.queensu.ca/teachingandlearning/modules/active/documents/Dales_Cone_of_Experience_summary.pdf
9. https://en.wikipedia.org/wiki/Welfare_schemes_for_women_in_India
10. <https://wcd.nic.in/sites/default/files/24-05010215wcdmedia.pdf>
11. https://en.wikipedia.org/wiki/Panchayati_raj_in_India

II B.Sc. HOMESCIENCE

10%

SEMESTER –III

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UAHS	19N3CC7	EXTENSION EDUCATION AND COMMUNICATION	Lecture	5	4

COURSE DESCRIPTION

This course create awareness on principles of extension education and extension teaching methods

COURSE OBJECTIVES

- To understand the concept of community development and panchayat raj.
- To create awareness on women welfare scheme
- To impart knowledge on communication methods
- To develop skill in preparing audio-visual aids
- To understand different extension teaching methods.

UNITS

UNIT – I	EXTENSION EDUCATION	[20 HRS]
-----------------	----------------------------	-----------------

Meaning, objectives and Principles of Extension and definition of Home science extension Allied concepts Formal, Nonformal, Qualities, Role and Functions of Extension Workers

History of CDP in India, Panchayat Raj – Three tier system, Program Planning. 5%

UNIT – II	WOMEN WELFARE PROGRAMMES	[15 HRS]
------------------	---------------------------------	-----------------

RMK, IMY, MGNREGS, PMRY & National livelihood programme, National Rural livelihood mission, National Social Assistance Scheme

UNIT – III	COMMUNICATION	[15 HRS]
-------------------	----------------------	-----------------

Self study - Communication Definition, Meaning, Objectives & Principles

Elements of communication, barriers to communication

UNIT – IV	EXTENSION TEACHING METHODS	[20 HRS]
------------------	-----------------------------------	-----------------

Meaning and teaching, Classification of extension teaching methods

- iv. Individual methods: Farm & home visit, farmer's call & personal letters.
- v. Group methods: Result demonstration, method demonstration, group meetings, study tour.
- vi. Mass methods: Publications – Leaflet, Pamphlet, Folder, mass meetings, exhibition, campaign, newspaper, Radio and T.V.

UNIT – V	AUDIO VISUAL AIDS	[20 HRS]
----------	-------------------	----------

Definition, Classification, criteria for selection and evaluation of audiovisual aids & Cone of Experience.

Audio Aids: E-Communication methods, Public address system, Radio 5%

Visual Aids:

- iii. Projected: Slides, filmstrip, opaque projection, overhead projection.
- iv. Non - projected: Chalkboard, Bulletin board, flannel graph, flash card, poster diagram, map, chart, graph, specimen and models.

Audio visual aids: Television, Motion pictures, Drama, Puppet show

OPEN EDUCATIONAL RESOURCE:

- 12. <https://www.economicdiscussion.net/india/community-development-cd-programme/21647>
- 13. <https://www.worldcat.org/title/extension-education-communication/oclc/808776384>
- 14. <http://eagri.org/eagri50/AEXT392/lec03.html>
- 15. <https://www.slideshare.net/MOHDAALENAVI/extension-teaching-84053118>
- 16. <http://studylecturenates.com/audio-visual-aids-in-education-definition-types-objectives/>
- 17. <http://lms.tanuvas.ac.in/mod/resource/view.php?id=39787>
- 18. <https://lidtfoundations.pressbooks.com/chapter/edgar-dale-and-the-cone-of-experience/>
- 19. https://www.queensu.ca/teachingandlearning/modules/active/documents/Dales_Cone_of_Experience_summary.pdf
- 20. https://en.wikipedia.org/wiki/Welfare_schemes_for_women_in_India
- 21. <https://wcd.nic.in/sites/default/files/24-05010215wcdmedia.pdf>
- 22. https://en.wikipedia.org/wiki/Panchayati_raj_in_India

FATIMA COLLEGE (AUTONOMOUS), MADURAI-625018**SEMESTER – III****ALLIED OPTIONAL - CATERING AND HOTEL MANAGEMENT- I N3AC1****(FRONT OFFICE MANAGEMENT AND HOUSEKEEPING)****Hrs/ Wk : 3****Credits : 3****OBJECTIVES**

To enable students to

- Learn the functions of the front office and House keeping
- Understand their importance in increasing the revenue of hotels

UNIT 1**(9 Hrs)**

Evolution of Hotel industry - Types of catering establishment - Types of hotels -Organization chart of a hotel – Front office: Importance of front office - Front office organization - layout - sections of front office. Stationeries and equipments used in front office –Room availability chart-fore cost board - reservation chart- computerized system. Types of room and room codes – types of plans- types of room rates.

UNIT II**(9 Hrs)**

Duties and responsibilities of Staff in front office. Social skills of receptionist. Reservation procedure- Types of reservation - Group reservations- Sources of reservation - instant reservation- Online reservation- Modes of reservation - Types of guest.

Registration procedures - Check in - Check out procedure. The role of information section.

UNIT III**(9 Hrs)**

Lobby and uniformed staff - handling unusual events and emergencies – Hotel credit - Front office accounting - Functions - Types of guest accounts - Types of postings - producing management reports. Foreign currency exchange and safe deposit. Boxes - functions of bell desk.

UNIT IV

(8Hrs)

Importance of Housekeeping department, organization chart - duties and responsibilities of various personnel in housekeeping - relationship of front office and housekeeping.

Bed making – steps in bed making.

Preparation of room report - check lists.

Linen-Classification of linen, selection, modes of obtaining linen.

Fabrics – Classification and description. Furnishings- soft furnishings, Floor furnishings- Carpets and wall covering.

UNIT V

(10 Hrs)

Cleaning –methods. Cleaning agents -classification, selection and use of various cleaning equipments, Selection for appropriate surfaces.

Laundry procedures - laundry equipments. Stain removal.

Uniform -selection , code and maintenance of staff uniform.

REFERENCES

1. Hotel Front Office Training Manual – Sudhir Andrews, Tata McGraw Hill, New Delhi, 1995
2. Hotel House Keeping Training Manual – Sudhir Andrews, Tata McGraw Hill, New Delhi, 1982
3. Hotel, Hostel and Hospital House keeping – Joan Branson Margaret Lennox.
4. Allen D.M. Accommodation and cleaning service, Vol II Management 1992.
5. Commercial Housekeeping and Maintenance, Stanly Thormes Publication Ltd., 1993.
6. Professional Housekeeping, Manoj Madhukar Rajat publication, New Delhi.
7. Managing Hotel and Restaurants, Dr. Jagmohan Negi, Authors Press.
8. Principles of Hotel front office operations, Baker, Beadley & Huyton, Cassell Publication, London.

II B.Sc. HOME SCIENCE WITH FOOD BIOTECHNOLOGY**SEMESTER –III****5%***For those who joined in 2019 onwards*

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UAHS	19N3AC1	CATERING AND HOTEL MANAGEMENT	Lecture	3	3

COURSE DESCRIPTION

This course describes the role of front office and housekeeping in Hotel Management

COURSE OBJECTIVES

- Learn the functions of the front office and House keeping
- Understand their importance in increasing the revenue of hotels

UNITS**UNIT –I INTRODUCTION TO HOTEL INDUSTRY (9 Hrs.)**

Hotel – Definition, Evolution of Hotel industry, Types of hotels, Organization chart of a hotel – small and large, Types of catering establishment, Star classification and its features.

UNIT –II FRONT OFFICE MANAGEMENT**5%****(9 Hrs.)**

Front office- Definition, Importance of front office, Front office organization layout, sections of front office. Duties and responsibilities of front office staff, Types of room, Types of plans, Types of room rates.

UNIT–III HOTEL RESERVATION AND RECEPTION**(9Hrs.)**

Reservation – Definition, Types of reservation, Reservation- procedure, Sources of reservation, Modes of reservation.

Reception - Duties and responsibilities of lobby manager, Guest luggage handling procedure, C- form.

Front office accounting – Definition, Types of account, Types of posting in a guest account, Safe guard of hotel credit facility, Foreign currency exchange

Registration - Check in and Checkout procedure, Guest cycle.

UNIT –IV HOUSEKEEPING MANAGEMENT

(9 Hrs.)

Housekeeping department- Definition, Importance , Organization chart, Duties and responsibilities of housekeeping staff, Interdepartmental relationship of front office and house Keeping.

Bed making- Procedure of bed making.

Room report- Preparation of room report, Check lists.

Linen- Classification of linen, Modes of obtaining linen.

Furnishings- Soft furnishings, Floor furnishings-Carpets and Wall covering.

UNIT –V CLEANING AND LAUNDRY MANAGEMENT(9 Hrs.)

Laundry procedures, Laundry equipments, Stain removal.

Cleaning– Methods, Cleaning agents Classification, Selection of cleaning equipments,

Self study: Uniform- Selection, Code and maintenance of staff uniform.

REFERENCES:

1. Allen D.M. (1992). *Accommodation and cleaning service*, Vol II Management
2. Andrews.S.(1995). *Hotel Front Office Training Manual*, Tata McGraw Hill, New Delhi.
3. Andrews.S.(1982). *House Keeping Training Manual*, Tata McGraw Hill, New Delhi.
4. Negi Jagmohan (2007). *Managing Hotel and Restaurants*, Authors Press .

OPEN EDUCATIONAL REFERENCES:

1. <https://ncert.nic.in/textbook/pdf/lehe104.pdf>
2. <https://drive.google.com/file/d/1mrFlogclLZqR1VLDsqI4ikqvTI2sOB8n/view>
3. <https://www.ihmnotessite.net/front-office>
4. <https://www.ihmnotessite.net/accomodation>

FATIMA COLLEGE (AUTONOMOUS), MADURAI-625018

**SEMESTER IV
FOOD BIOTECHNOLOGY- I –N4CC10**

Hours/ week: 3

Credits: 3

OBJECTIVES:

To enable the students to gain knowledge on the scope, importance and the basic aspects of biotechnology relating to foods

Unit-I - Introduction (7 hrs)

Biotechnology –Definitions – Branches - Biotechnology in India. Food
Biotechnology - Scope, Importance and applications in fields of medicine, agriculture, industry and environment.

Unit-II – Microorganisms associated with food biotechnology (10 hrs)

Microorganisms associated with food biotechnology – Bacteria, Yeast, Mould
Factors affecting microbial growth, Microbial kinetics

Unit-III – Production of cultures for food fermentation (10 hrs)

Culture of food microbes - Preparation of nutrient media, Sterilization and disinfection, inoculation techniques, Staining methods, Microbial examination.

Unit IV – Fermentation Technology (10 Hrs)

Fermentation – Definition, Fermentation process, Fermented food Products –
Yoghurt, Cheese, Tempeh, saurkraut, Idli, Dosa. Advantages of fermented products

Unit V - Single Cell Protein (8 Hrs)

Single cell Protein: Definition, Microorganisms used for SCP production, Substrates, procedure for production of SCP, Biomass recovery, Advantages of SCP, Limitations of SCP.

References:

Text book : Course Material

1. Sriram Sridhar, 2005, Enzyme Biotechnology, Dominant Publishers and Distributors, New Delhi.
2. B. D. Singh, 2004, Biotechnology Expanding Horizons, Kalyani Publishers, Ludhiana.
3. Rita Singh, 2004, Food Biotechnology, Global Vision Publishing House, Delhi.
4. P.K.Gupta,1995, Elements of Biotechnology, Rastogi Publications,Meerut.
5. Jay, Modern Food Microbiology, CBS Publishers, 1987
6. Frazier, Food Microbiology, THM Publications

Web Reference

7. <http://www.businessdictionary.com/definition/food-biotechnology.html>
8. <http://www.mrothery.co.uk/genetech/genetechnotes.htm>
9. <http://www.wpi.edu/Pubs/E-project/Available/E-project-031405-135846/unrestricted/IQP.pdf>
10. http://www.sciencedaily.com/articles/t/transgenic_plants.htm

II B.Sc. HOMESCIENCE WITH FOOD BIOTECHNOLOGY**SEMESTER –IV***For those who joined in 2019 onwards*

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UAHS	19N4CC10	BASICS OF FOOD BIOTECHNOLOGY	Lecture	5	4

COURSE DESCRIPTION

This course describes the concepts of biotechnology, role of microorganism in food industry

COURSE OBJECTIVES

- To enable students to understand the concepts of biotechnology
- To gain knowledge on role of microorganism in food industry

UNITS

**UNIT –I BIOTECHNOLOGICAL APPROACHES IN FOOD PROCESSING
(15HRS.)**

Biotechnology –Definitions – Branches - Biotechnology in India.

Food Biotechnology - Scope, Importance and applications in fields of medicine, agriculture, industry and environment. Microorganisms associated with food biotechnology – Bacteria, Yeast, Mould

Self Study:applications in fields of medicine, agriculture

UNIT –II **BASICS OF MICROBIOLOGY 10% (15 HRS.)**

Spoilage, contamination and preservation of foods

Factors affecting microbial growth, Microbial kinetics

**UNIT –III PRODUCTION OF CULTURES FOR FOOD FERMENTATION
(15HRS.)**

Culture of food microbes - Preparation of nutrient media, Sterilization and disinfection, inoculation techniques, Staining methods, Microbial examination.

UNIT –IV FERMENTATION TECHNOLOGY (15 HRS.)

Fermentation – Definition, Fermentation process, Fermented food Products – Yoghurt, Cheese, Tempeh, saurkraut, Idli, Dosa. Advantages of fermented products

Self Study: Advantages of fermented products

UNIT –V SINGLE CELL PROTEIN (15HRS.)

Single cell Protein: Definition, Microorganisms used for SCP production, Substrates, procedure for production of SCP, Biomass recovery, Advantages of SCP, Limitations of SCP.

REFERENCES:

1. Frazier, (1989) .*Food Microbiology*, THM Publications
2. Gupta, P.K. (1995).*Elements of Biotechnology*, Rastogi Publications, Meerut.
3. Jay, (1987). *Modern Food Microbiology*, CBS Publishers,
4. Rita Singh. (2004).*Food Biotechnology*, Global Vision Publishing House, Delhi.
5. Singh, B. D (2004). *Biotechnology Expanding Horizons*, Kalyani Publishers, Ludhiana.
6. Sri Ram Sridhar (2005). *Enzyme Biotechnology*, Dominant Publishers and Distributors, New Delhi.

OPEN EDUCATIONAL REFERENCES

1. <https://microbenotes.com/category/biotechnology/>
2. <https://www.rug.nl/research/irees/research/edulink-fsba/fsba-course-modules/fsba-module-2-unit-1-notes-english.pdf>
3. <https://www.onlinebiologynotes.com/single-cell-protein-scp-substrate-and-steps-involved-in-production/>
4. <https://openstax.org/books/microbiology/pages/1-3-types-of-microorganisms#>
5. <https://courses.lumenlearning.com/boundless-microbiology/chapter/food-preservation/#:~:text=Preservation%20usually%20involves%20preventing%20the,or%20otherwise%20reduce%20food%20spoilage.>
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6723656/>
7. <https://courses.lumenlearning.com/boundless-microbiology/chapter/microbial-culture-methods>