IMG 222
FOOD MICROBIOLOGY 2

BRIEFING

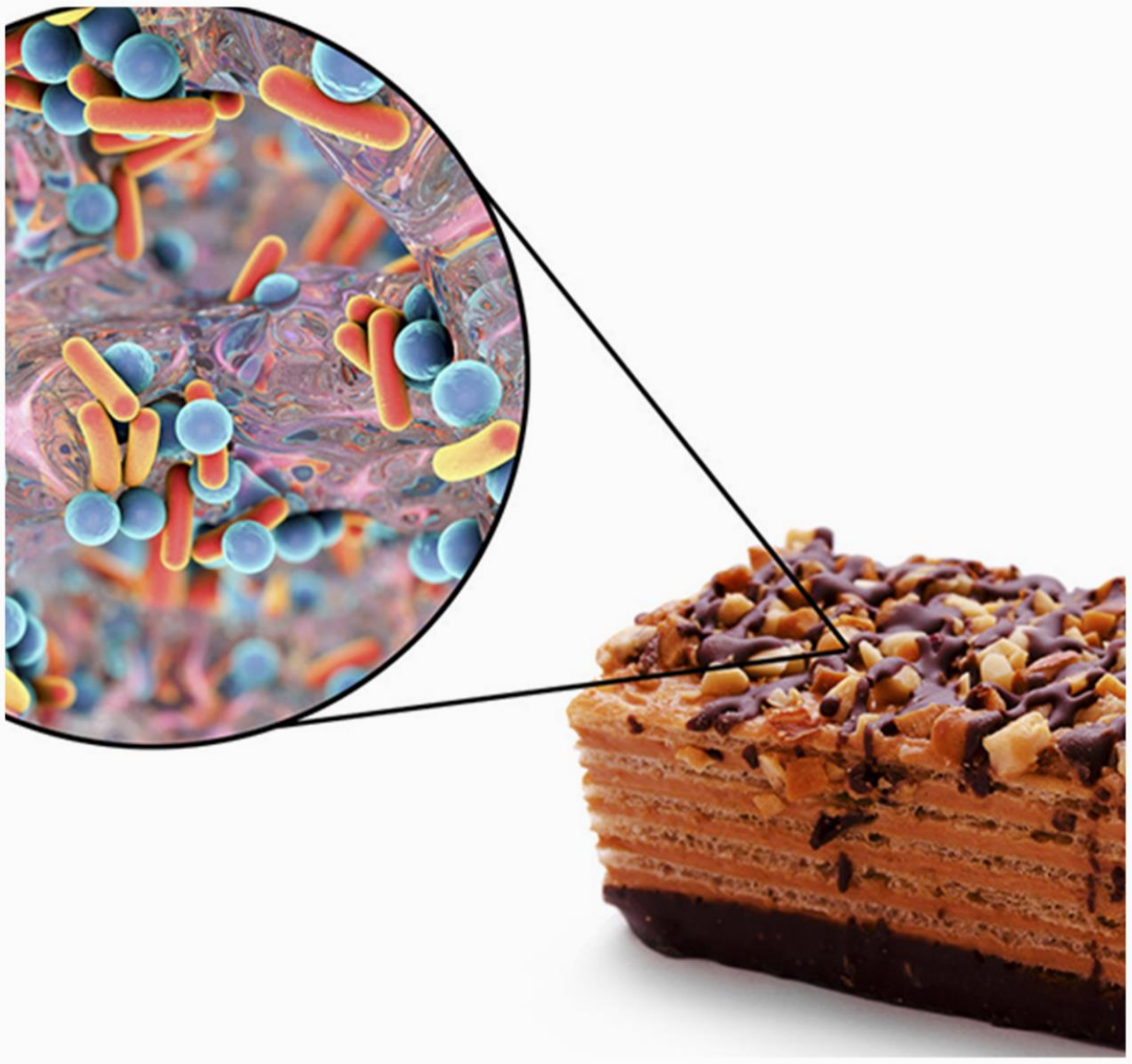
13/10/2020

COURSE OBJECTIVE

This course is designed to give students an understanding of the **relationship** of microorganisms to foodborne illness and intoxications, food quality, food spoilage and food preservation on various food commodities.

COURSE LEARNING OUTCOME

1. Identify beneficial microorganisms, spoilage organisms, and pathogens in food, and suitable conditions for microbial growth
2. Discuss the interaction of intrinsic and extrinsic factors in relation to food spoilage by microorganisms
3. Perform cultivation, isolation and identification methods on the presence of spoilage organisms and pathogens in food
4. Explain the influence of various physical, chemical and biological processes used in food processing on spoilage organisms and pathogens
5. Describe orally and in writing on the concept, principle and techniques in food microbiology



LECTURERS

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LECTURES

Lecturer	Topic
Dr. Norlia	Briefing: Overview of the course, course outcomes, course content, and course assessment.
Dr. Norlia	Introduction to **food contamination and spoilage**
Dr. Norlia	**Factors influencing the growth** of microorganisms in food
Dr. Effarizah	**Indicator** organisms
Dr. Effarizah	Microbiology of **milk**
Dr. Effarizah	Microbiology of **meat and meat products**
Dr. Effarizah	Microbiology of **poultry and poultry products**
Dr. Effarizah	Microbiology of **fish and seafoods**
Dr. Effarizah	Selection of **spoilage organisms**
Dr. Effarizah	Microbiology of **canned foods**
Dr. Norlia	Microbiology of **fruits and vegetables**
Dr. Norlia	**Thermal resistance**
Dr. Norlia	Food **preservation**
Dr. Norlia	Foodborne pathogens: **Infection, intoxication, and toxico-infection**
Dr. Norlia	Foodborne pathogens: **Gram-negative and Gram-positive pathogens**
Dr. Norlia	Microbiological **criterion** and **sampling plan**

LAB

Lecturer	Lab
Dr. Norlia / Dr. Effarizah	Lab 1: Microbiological examination of **milk**
Dr. Norlia / Dr. Effarizah	Lab 2: Microbiological examination of **meat**
Dr. Norlia / Dr. Effarizah	LAB 3: Isolation and identification of ***Salmonella*** **from poultry carcass**
Dr. Norlia / Dr. Effarizah	LAB 4: Isolation and identification of ***Vibrio parahaemolyticus*** **and *Vibrio cholerae* from fish and shrimp**
Dr. Norlia / Dr. Effarizah	LAB 5: Isolation and identification of ***Staphylococcus aureus*** **from ready-to-eat food**
Dr. Norlia / Dr. Effarizah	LAB 6: Isolation and identification of ***Clostridium perfringens***
Dr. Norlia / Dr. Effarizah	Practical test

LAB REPORT

TITLE

- Microbiological examination of milk and meat
- Isolation and identification of *Salmonella, Vibrio, S. aureus* on various food products

INSTRUCTION

- Write a lab report on these topics, answer the given question, and incorporate the answer in the discussion.
- < 10 pages including references.

ASSESSMENT

60 % COURSEWORK

- Test 20% (NM + EME)
- Presentation 10%
- Assignments 10% (NM + EME)
- Lab report 10%
- Practical test 10%

40 % FINAL EXAM

- 5 questions (compulsory)

GROUP ASSIGNMENT

- Form a group of 5 (max). The group needs to be multiracial.
- Choose one product among the list provided to you.
- Describe the processing step of your product.
- State the beneficial microorganism(s) involved in the fermentation process and / or preservation.
- What is the microbiological and chemical changes that can be observed in the finish product?
- Identify the spoilage organisms and/or pathogens that will likely to spoil and/or contaminate your product. Why and how?
- At the end of the course each group needs to present their findings.

FOOD PRODUCTS

- Salted fish
- Salted vegetables
- Pickled fruits
- Salted egg
- “Kaya” jam
- Pineapple jam
- Yogurt
- Fish sauce
- ‘Tuak” – fermented coconut water
- Raddish
- “Ikan pekasam”







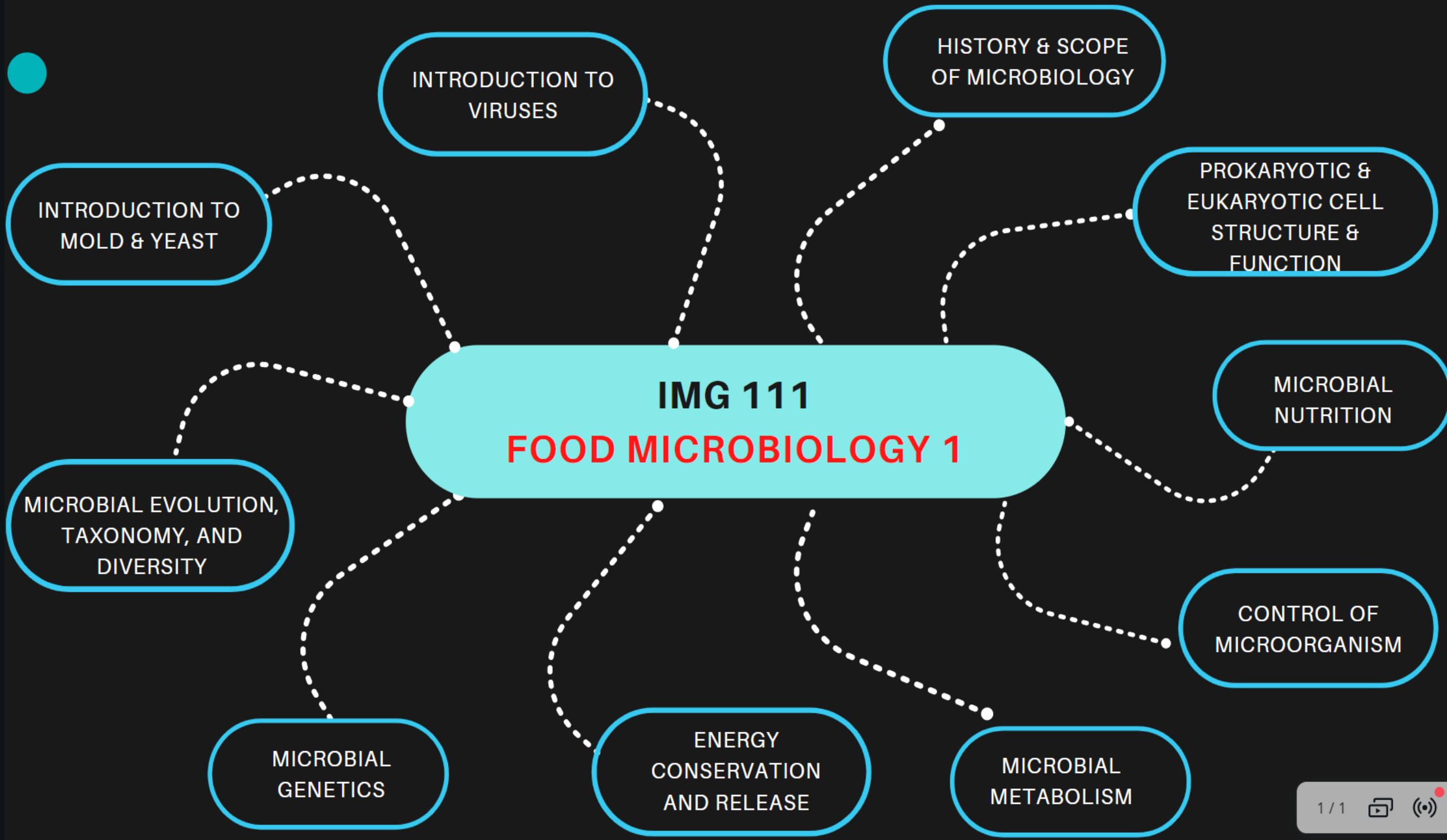



FIRST COME FIRST SERVED!!

Find your group members, choose your topic, and post it in **eLearn FORUM**

REFERENCES

- Montville, T.J., & Matthews, K.R. (2005). Food Microbiology: An Introduction. ASM Press: Washington. (QR115.M814 2005 f)
- Adams, M.R. & Moss, M.O. (2008). Food Microbiology. Royal Society of Chemistry: Cambridge. (QR115.A216 2008)
- Doyle, M.P. & Beuchat, L.R. (2007). Food Microbiology: Fundamentals and Frontiers. ASM Press: Washington. (QR155.F686 2007 f)


IMG 111
FOOD MICROBIOLOGY 1
INTRODUCTION TO VIRUSES
HISTORY & SCOPE OF MICROBIOLOGY
INTRODUCTION TO MOLD & YEAST
PROKARYOTIC & EUKARYOTIC CELL STRUCTURE & FUNCTION
MICROBIAL NUTRITION
MICROBIAL EVOLUTION, TAXONOMY, AND DIVERSITY
CONTROL OF MICROORGANISM
MICROBIAL GENETICS
ENERGY CONSERVATION AND RELEASE
MICROBIAL METABOLISM

REFLECTION ON IMG 111

How can we improve our online class? Please give your suggestion...

How to participate?

WEB

1. Connect to www.wooclap.com/IMG222
2. You can participate

Rules & regulation in class

- Attendance is compulsory
- Alert with the announcement / task given in the eLearn.
- Active in class – join class activity

THANK YOU