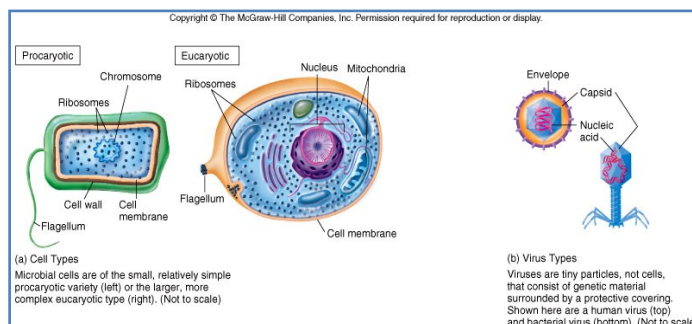


Microbiology



SEMESTER - II

BOT-II.C-4

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COURSE SYLLABUS

THEORY

Lect days: Monday – 9.30-10.30 (**C- 201**) & Friday- 10.30-11.30 (**C-101**)

| Lecture No.s | Date | Lecture Topics | Reference Books |
|--------------|---------|--|-----------------|
| 1. | 6/12/19 | Introduction to Microbiology & scope of microbiology. | |
| 2. | 9/12/19 | Developments of microbiology in the twentieth century | |
| 3 & 4 | 16 & | Microbial taxonomy & phylogeny (archaea, bacteria, fungi, algae, protozoa) - bacteria and archaea, | Powar, C.B |

| | | | |
|----|----------|--|--|
| | 20/12/19 | | & Daginawala, H.F.1982, General Microbiology -Volume II, Himalaya Publishing. Prescott, Harley, Klein2008, Microbiology |
| 5. | 23/12/19 | Taxonomy & phylogeny algae & protozoa | |
| | | Christmas break | |
| 6 | 3/1/20 | Taxonomy & phylogeny of fungi | |
| 7 | 6/1/20 | Structure & General characteristics of viruses viroids, Prions | |
| 8 | 10/1/20 | Structure & General characteristics of bacteriophages, | |
| 9 | 13/1/20 | Mycoplasma | |
| 10 | 17/1/20 | TMV viruses | |
| 11 | 20/1/20 | Buffer lecture | |
| 12 | 24/1/20 | Distribution of microorganisms (terrestrial & aquatic | |
| 13 | 27/1/20 | CA 1 -TEST | |
| 14 | 31/1/20 | Microbial diseases | |
| 15 | 3/2/20 | Scope of Microbiology | |
| | | Unit II Sterilization techniques & Control of microbial growth | |
| 16 | 7/2/20 | Importance of Sterilization techniques in microbial growth | |
| 17 | 10/2/20 | Biochemical characterization & nutritional types | |
| 18 | 14/2/20 | Preparation of pure cultures | |
| 19 | 17/2/20 | Staining of microorganisms | |
| 20 | 21/2/20 | Growth factors | |
| 21 | 24/2/20 | CA -2 | |
| 22 | 27/2/20 | growth curve | |
| 23 | 2/3/20 | Bacterial genetics – Transformation, Transduction | |
| 24 | 6/3/20 | Bacterial genetics- Conjugation | |
| 25 | 9/3/20 | Methods of Viral replication (Lytic) | |

| | | | |
|----|---------|--------------------------------------|--|
| 26 | 13/3/20 | Lysogenic mode of Viral replication | |
| 27 | 16/3/20 | Buffer lecture on microbial diseases | |
| 28 | 20/3/20 | Discussion on Poster mode CA -3 | |
| 29 | 23/3/20 | Difficulties and question bank | |
| 30 | 27/3/20 | Feedback | |

REFERENCES

1. Prescott, Harley, Klein (2008). Microbiology. McGraw-Hill Higher Education, Boston.
2. Pelczar M.J., Chan E.C.S., Krieg N.R., Microbiology, (1993), Fong and sons printers Pvt. Ltd.
3. Dubey R.C., Maheshwari D.K.,(2008) A textbook of Microbiology, S. Chand and Company Ltd.
4. Powar, C.B & Dagainawala,H.F.(1982),General Microbiology -Volume II, Himalaya Publishing.
5. Stanier R.Y., (1993). General Microbiology, Cambridge University.
6. Madigan, Martinko.,Parker J. (2007) Brock's Biology of microorganisms,Pearson Prentice Hall.

Practical Reference Books:

1. Gunasekaran, P. Laboratory Manual in Microbiology.
2. Aneja, K. R. Experiments in microbiology.

*** MANDATORY ITEMS TO BE CARRIED FOR PRACTICALS**

- 1) Laboratory lab coat, record note book.
- 2) Dissection box and Lab Coat

Practical Schedule

Monday 11.30- 1.30pm Botany Laboratory

| Sr.No. | Date | Practical topics |
|--------|----------|--|
| 1 | 9/12/19 | Lab safety rules, sterilization method culture |
| 2 | 16/12/19 | Media preparation and technique of pure cultures |
| 3 | 06/1/20 | Culture of Microbes in environment |
| 4 | 13/1/20 | Staining of microorganisms |
| 5 | 20/1/20 | PA -1 |
| 6 | 27/1/20 | Measurement of dimension of microorganism by micrometry method |
| 7 | 3/2/20 | Cell count by haemocytometer (serial Dilution technique) |
| 8 | 10/2/20 | Turbidometric determination of growth |
| 9 | 17/2/20 | Repetition of micrometry & haemocytometer |
| 10 | 24/2/20 | PA -2 |
| 11 | 2/3/20 | Mini Projects Fermentation of carbohydrates (Wine making) |
| 12 | 9/3/20 | Mini project student orientation and difficulties if any |
| 13 | 16/3/20 | 3 rd Practical CA Bacteriological examination of water Analysis of Milk samples |
| 14 | 23/3/20 | Cont.. of Mini projects |
| 15 | 30/3/20 | Final journal certification |

COURSE ASSESSMENT SCHEME

For the academic year 2019-20

Instructions:-

- Students must be informed about the Course scheme of Assessment and the same need to be uploaded in CLAAP/Google classroom.

1. Course coordinator/ Faculty name: Dr. Sangeeta Sankhalkar

2. Name of the Department: Botany

Name of the Programme: BSC

Botany

3. Course title: Microbiology

Credits: 03

4. ASSESSMENT

| <u>SCHEME OF ASSESSMENT- THEORY</u> | | | | | |
|--|--|-------------------------------|-------|---|--------------|
| ASSESSMENT TYPE | SCHEDULE OF ASSESSMENT | ACTIVITY (Mode of Assessment) | MARKS | RUBRICS | TOPIC |
| Test 1 To be conducted by paper sharing faculty | Jan 27,2020 | Assignment | 30 | | III |
| Test 2 | Feb 24, 2020 | Test | 30 | 10 q X3M=30 | Topic 1 |
| Test 3 | March, 16- 20th 2020 | Poster Presentation | 30 | Informative poster Display: 15 M Explanation 10M Viva 10M | Topic I & II |
| Total Marks | | | 30 | ----- | ----- |

SCHEME OF ASSESSMENT - PRACTICAL

Is the LABORATORY manual uploaded? (specify YES/NO):

Total Marks: 25

| PRACTICAL ASSESSMENTS (CA1/CA2/...) | WEIGHTAGE /Marks | SCHEDULE OF ASSESSMENTS (Batch wise) |
|--|-------------------------|---|
| PA 1 | 25 | 20 th Jan (Journal and Viva 5M each) |
| PA 2 | 25 | 17th Feb (Journal and Viva 5M each) |
| PA 3 | 25 | 16th March (Experiment -10M Write up-15M) |

- **Is this scheme of Assessment is discussed in the Department Faculty Council (DFC)?(Specify yes/no):**
- **Date of uploading in CLAAP/Google classroom:**

Date:
Course Coordinator

Signature of the