



SYMBIOSIS INTERNATIONAL UNIVERSITY

PREVENT IT CURRICULA @SYMBIOSIS INTERNATIONAL UNIVERSITY

College Name: Symbiosis School of Biological Sciences
Course Name: Microbiology
Teaching Faculty: Dr. Sunil Saroj
Course Program: Post-graduation Studies in Biotechnology
Type: Modernised

Nature: Compulsory
No. of Hours: 60 Hours
No. of Students: 40
Semester: First
Course Code: T4716

SYLLABUS

- ✓ Microbial Communication: quorum sensing, strategies, interspecies, interkingdom, eaves dropping Disease, novel drugs
- ✓ AMR: antimicrobials, principles, usage, pharmacokinetics, pharmacodynamics genetic basis, pumps, transmission
- ✓ Diagnosis of AMR



TEACHING METHODOLOGY

- ✓ Power Point Presentation
- ✓ Lecture



RECOMMENDED MATERIAL

- ✓ Arch G.M., Pomeroy C. Management of Antimicrobials in Infectious Disease: Impact of Antibiotic Resistance. Human Press. 2010
- ✓ Chin-Yi C. Antimicrobial Resistance and Food Safety: Method and Techniques. Academic Press, 2015



SCOPE AND OBJECTIVES

- ✓ Allen R. Antimicrobial Resistance and Infection Control. Foster Academics. 2019 Microbial ecology and analytics techniques in microbiology.
- ✓ To Understand the factors affecting antimicrobial resistance, risk management and strategic to combat antimicrobial resistance
- ✓ To work and learn effectively both independently and collaboratively.



EVALUATION PATTERN

- ✓ Internal Evaluation 60%
- ✓ External Evaluation 40%



SYMBIOSIS INTERNATIONAL UNIVERSITY

PREVENT IT CURRICULA @SYMBIOSIS INTERNATIONAL UNIVERSITY

College Name: Symbiosis School of Biological Sciences
Course Name: Practicals in Microbiology
Teaching Faculty: Dr. Sunil Saroj
Course Program: Post-graduation Studies in Biotechnology
Type: Modernised

Nature: Compulsory
No. of Hours: 90 Hours
No. of Students: 40
Semester: First
Course Code: T4060

SYLLABUS

- ✓ Testing susceptibility of microbes to antimicrobials, Determination of MIC by agar diffusion and microbroth dilution



TEACHING METHODOLOGY

- ✓ Lab Experiments
- ✓ Practicals



RECOMMENDED MATERIAL

- ✓ Woolverton C.J., Sheewood L., Willey J. Prescott's Microbiology. McGraw-Hill Education, 2016
- ✓ Cornelissen C.N., Harvey R.A., Fsher B.D. microbiology Illustrated Reviews Volume 3 of Lippincott's Illustrated Reviews Series. Lippincott Williams & Wilkins, 2012
- ✓ Talaro K.P., Chess B. Foundations in Microbiology. McGraw-Hill Education, 2014



SCOPE AND OBJECTIVES

- ✓ To understand the-concepts of microbial isolation and aseptic techniques.
- ✓ The Student should be able to plan, perform and analyse experiment independently.
- ✓ Learn the concepts of antimicrobial resistance



EVALUATION PATTERN

- ✓ Internal Evaluation 60%
- ✓ External Evaluation 40%



SYMBIOSIS INTERNATIONAL UNIVERSITY

PREVENT IT CURRICULA @SYMBIOSIS INTERNATIONAL UNIVERSITY

College Name: Symbiosis School of Biological Sciences
Course Name: Food Microbiology
Teaching Faculty: Dr. Sunil Saroj
Course Program: Post-graduation Studies in Nutrition & Dietetics
Type: Modernised

Nature: Compulsory
No. of Hours: 60 Hours
No. of Students: 60
Semester: First
Course Code: T4738

SYLLABUS

- ✓ Microbial genetics, bacteriophages CRISPR-cas system
- ✓ Antimicrobials, Principles of antimicrobial usage, antibacterial Role of public health laboratories, Antibacterial resistance and food chain, nutrition, infection and antibacterial resistance



TEACHING METHODOLOGY

- ✓ Power Point Presentation
- ✓ Lecture



RECOMMENDED MATERIAL

- ✓ Allen R. Antimicrobial Resistance and Infection Control. Foster Academics. 2019
- ✓ Arch G.M., Pomeroy C. Management of Antimicrobials in Infectious Disease: Impact of Antibiotic Resistance. Human Press. 2010
- ✓ Chin-Yi C. Antimicrobial Resistance and Food Safety: methods and Techniques. Academic Press, 2015



SCOPE AND OBJECTIVES

- ✓ To Study the core concepts of microbiology including host pathogen interactions, microbial ecology and analytics techniques in microbiology
- ✓ To understand the factors affecting antimicrobial resistance, risk management and strategies to combat antimicrobial resistance
- ✓ To work and learn effectively both independently and collaboratively.



EVALUATION PATTERN

- ✓ Internal Evaluation 60%
- ✓ External Evaluation 40%



SYMBIOSIS INTERNATIONAL UNIVERSITY

PREVENT IT CURRICULA @SYMBIOSIS INTERNATIONAL UNIVERSITY

College Name: Symbiosis School of Biological Sciences
Course Name: Microbiology
Teaching Faculty: Dr. Sunil Saroj
Course Program: Post-graduation Studies in Biochemistry
Type: Modernised

Nature: Compulsory
No. of Hours: 60 Hours
No. of Students: 30
Semester: First
Course Code: T4072

SYLLABUS

- ✓ Microbial Communication: quorum sensing, strategies, interspecies, interkingdom, eaves dropping disease, novel drugs
- ✓ AMR: antimicrobials, principles, usage, pharmacokinetics, pharmacodynamics genetic basis, pumps, transmission



TEACHING METHODOLOGY

- ✓ Power Point Presentation
- ✓ Lecture



RECOMMENDED MATERIAL

- ✓ Allen R. Antimicrobial Resistance and Infection Control. Foster Academics. 2019
- ✓ Arch G.M., Pomeroy C. Management of Antimicrobials in Infectious Disease: Impact of Antibiotic Resistance. Human Press. 2010
- ✓ Chin-Yi C. Antimicrobial Resistance and Food Safety: methods and Techniques. Academic Press, 2015



SCOPE AND OBJECTIVES

- ✓ To Study the core concepts of microbiology including host pathogen interactions, microbial ecology and analytics techniques in microbiology
- ✓ To understand the factors affecting antimicrobial resistance, risk management and strategies to combat antimicrobial resistance
- ✓ To work and learn effectively both independently and collaboratively.



EVALUATION PATTERN

- ✓ Internal Evaluation 60%
- ✓ External Evaluation 40%

The course has been accepted by the 'Program review committee' but the BUD, BOS and BOM is pending

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SYMBIOSIS INTERNATIONAL UNIVERSITY

PREVENT IT CURRICULA @SYMBIOSIS INTERNATIONAL UNIVERSITY

College Name: Symbiosis School of Biological Sciences
Course Name: Practicals in Microbiology and Molecular Biology
Teaching Faculty: Dr. Sunil Saroj
Course Program: Post-graduation Studies in Biochemistry
Type: Modernised

Nature: Compulsory
No. of Hours: 90 Hours
No. of Students: 30
Semester: First
Course Code:

SYLLABUS

- ✓ Testing susceptibility of microbes to antimicrobials, Determination of MIC by agar diffusion and micro broth dilution



TEACHING METHODOLOGY

- ✓ Practical
- ✓ Lab experiments



RECOMMENDED READING MATERIAL (TEXTBOOKS/WEBSITES/ REFERENCE BOOKS/ORIGINAL PAPERS AND REVIEW ARTICLES FROM JOURNALS):

- ✓ Woolverton C.J., Sherwood L., Willey J. Prescott's Microbiology. McGraw-Hill Education, 2016
- ✓ Cornelissen C.N., Harvey R.A., Fisher B.D. Microbiology Illustrated Reviews Volume 3 of Lippincott's Illustrated Reviews Series. Lippincott Williams & Wilkins, 2012
- ✓ Talaro K.P., Chess B. Foundations in Microbiology. McGraw-Hill Education, 2014
- ✓ Schmidt T.M., Schaechter M. Topics in Ecological and Environmental Microbiology. Academic Press, 2012

EVALUATION PATTERN

- ✓ Internal Evaluation 60%
- ✓ External Evaluation 40%

SCOPE AND OBJECTIVES

- ✓ Understand the concepts of microbial isolation and aseptic techniques.
- ✓ The student should be able to plan, perform and analyse experiments independently.
- ✓ Learn the concepts of antimicrobial resistance.



The course has been accepted by the 'Program review committee' but the BUD, BOS and BOM is pending

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SYMBIOSIS

INTERNATIONAL UNIVERSITY

PREVENT IT CURRICULA @SYMBIOSIS INTERNATIONAL UNIVERSITY

College Name: Symbiosis International University
Course Name: Risk management and prevention of Antibiotic Resistance
Teaching Faculty: Dr. Sunil Saroj
Course Program: Doctor of Philosophy
Type: Modernised

Nature: Compulsory
No. of Hours: 2 Hours
No. of Students: 45
Semester: NA
Course Code: S5789

SYLLABUS

- ✓ Antimicrobials, Antimicrobial Resistance, Mechanism of antibiotic action and antibiotic resistance
- ✓ Prevention strategies for AMR, Infection Control Practices of combat AMR



TEACHING METHODOLOGY

- ✓ Power Point Presentation
- ✓ Lecture



RECOMMENDED MATERIAL

- ✓ Allen R. Antimicrobial Resistance and Infection Control. Foster Academics. 2019
- ✓ Arch G.M., Pomeroy C. Management of Antimicrobials in infectious Diseases: Impact of Antimicrobial Resistance. Human Press. 2010



SCOPE AND OBJECTIVES

- ✓ Learn the basic concepts of antimicrobial resistance
- ✓ To understand the factors affecting antimicrobial resistance, risk management and strategies to combat antimicrobial resistance



EVALUATION PATTERN

- ✓ External Evaluation 100%