FIRST YEAR – Semester- I

MBT- 101 Introductory Microbiology, Microbial Techniques And Biology Of Microorganisms

TOTAL HOURS: 48

UNIT-I History

UNIT – II Classification, general characters of eukaryotic Microorganisms, Isolation and Staining Techniques
Classification of microorganisms – Heckel’s three Kingdom concept - Whittaker’s five kingdom concept and three domain concept of Carl Woese and phylogenetic tree. Basis of modern microbial classification and their concepts, nomenclature and taxonomic ranks. General characters of Fungi (Yeast, Candida) – Algae (Cyanobacteria, Chlorella), Protozoa (Entameoba, Leishmania, Plasmodium). Isolation and identification of Microorganisms – Principles and types of stains (Simple, Differential and negative stains), structural stains – spore, capsule, flagella. Hanging-drop method.

UNIT-III Sterilization

UNIT-IV Isolation & Preservation
Pure culture techiques – enrichment culturing, dilution-plating, streak-plate, spread-plate and micromanipulator. Preservation of microbial cultures – subculturing, overlaying cultures with mineral oils, lyophilization sand cultures, storage at low temperature (ultra low temperature).

UNIT –V Classification and general characters of prokaryotes and viruses
MBP- 101 Introductory Microbiology, Microbial Techniques And Biology Of Microorganisms

TOTAL HOURS: 48                      CREDITS: 2

1. Microbiology Good Laboratory Practices and Biosafety.

2. To study the principle and applications of important instruments (biological safety cabinets, autoclave, incubator, hot air oven, light microscope, pH meter) used in the microbiology laboratory.

3. Preparation of culture media for cultivation of bacteria, fungi

4. Sterilization of medium using Autoclave

5. Sterilization of glassware using Hot Air Oven

6. Sterilization of heat sensitive material by membrane filtration and assessment for sterility

7. Demonstration of the presence of microflora in the environment by exposing nutrient agar plates to air.

8. Isolation of single colonies on solid media.
9. Isolation of pure cultures of bacteria by streaking method.
10. Preservation of bacterial cultures by various techniques.
11. Diagramatic or Electron photomicrographic observation of TMV, HIV, T4 phage and adenovirus

SUGGESTED READING


Microbiology: Principles and Explorations, John Wiley, USA.


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B.Sc MICROBIOLOGY (CBCS) SYLLABUS
FIRST YEAR – Semester- II
MBT-201 MICROSCOPY, MICROBIAL BIOCHEMISTRY & METABOLISM
TOTAL HOURS: 48  
CREDITS: 4

UNIT-I Microscopy

Principles of microscopy - bright field, dark field, phase-contrast, fluorescence and electron microscopy (SEM and TEM). Ocular and stage micrometers - Size determination of microorganisms.

No. of hours: 6

UNIT-II Biomolecules

Biomolecules of microorganisms. Outline classification and general characteristics of carbohydrates (monosaccharides, disaccharides and polysaccharides). General characteristics of amino acids and proteins. Structure of nitrogenous bases, nucleotides, nucleic acids. Fatty acids (saturated and unsaturated) and lipids (spingolipids, sterols and phospholipids).

No. of hours: 12

UNIT-III pH, Buffers, Analytical techniques and enzymes

No. of hours: 10
Hydrogen ion concentration in biological fluids, pH measurement. Types of buffers and their use in biological reactions. Principle and applications of colorimetry and chromatography (paper, thin-layer and column). Spectrophotometric techniques (UV & visible).

Enzymes properties and classification. Enzyme unit and Biocatalysis induced fit, and lock and key model coenzymes. Cofactors. Factors affecting catalytic activity. Inhibition of enzyme activity competitive, noncompetitive, uncompetitive and allosteric.

UNIT-IV Microbial nutrition and Growth
No. of hours: 10

UNIT-V Intermediary Metabolism
No. of hours: 10

MBP- 201 MICROSCOPY, MICROBIAL BIOCHEMISTRY & METABOLISM
TOTAL HOURS: 48
CREDITS: 2

1. Light compound microscope and its handling.
2. Microscopic observation of bacteria (Gram +ve bacilli and cocci, Gram -ve bacilli), cyanobacteria (Nostoc, Spirulina), algae (Scenedesmus spp., diatoms), and fungi (Saccharomyces, Rhizopus, Aspergillus, Penicillium, Fusarium).
3. Calibrations of microscopic measurements (Ocular, stage micrometers).
4. Measuring dimensions of fungal spores
5. Simple staining
6. Negative staining
7. Gram’s staining
8. Colorimetric estimation DNA by diphenylamine method
9. Colorimetric estimation of proteins by Biuret/Lowry method
10. Paper chromatographic separation of sugars and amino acids
11. Preparation of different media: synthetic media BG-11, Complex media- Nutrient agar, McConkey agar, EMB agar.
12. Enrichment culturing and isolation of phototrophs and chemoautotrophs.
13 Setting and observation of Winogradsky column.
14 Estimation of CFU count by spread plate method/pour plate method.
15 Bacterial growth curve.
16 Factors affecting bacterial growth – pH, temperature, salts

SUGGESTED READING


Campbell, MK (2012) Biochemistry, 7th ed., Published by Cengage Learning

Campbell, PN and Smith AD (2011) Biochemistry Illustrated, 4th ed., Published by Churchill Livingstone


B.Sc MICROBIOLOGY (CBCS) SYLLABUS
SECOND YEAR – Semester- III
MBT- 301 MICROBIAL GENETICS AND MOLECULARBIOLOGY
TOTAL HOURS:48 CREDITS: 4

Unit-I Nucleic acids and DNA replication No. of hours: 10

Unit-II Mutations And DNA Damage & Gene transfer mechanisms in bacteria No. of hours: 10

Unit-III GENE CONCEPT No. of hours: 8

Unit-IV Protein synthesis No. of hours: 12
Protein synthesis in prokaryotes and eukaryotes – Transcription, transcriptional processing and translation and termination. Types of genes – structural, constitutive, regulator.
Operon concept. Regulation of gene expression in bacteria – lac operon.

Unit-V Genetic Engineering No. of hours: 8

**MBP- 301 MICROBIAL GENETICS AND MOLECULAR BIOLOGY**

**TOTAL HOURS: 48  CREDITS: 2**

1. Study of different types of DNA and RNA using micrographs and model / schematic representations
2. Study of semi-conservative replication of DNA through micrographs / schematic representations
3. Isolation of genomic DNA from *E. coli*
4. Estimation of DNA using UV spectrophotometer (A260 measurement)
5. Resolution and visualization of DNA by Agarose Gel Electrophoresis.
6. Resolution and visualization of proteins by Polyacrylamide Gel Electrophoresis (SDS-PAGE).
7. Problems related to DNA and RNA characteristics, Transcription and Translation.

**SUGGESTED READING**


Washington, D.C., USA.


B.Sc MICROBIOLOGY (CBCS) SYLLABUS
SECOND YEAR – Semester- IV
MBT- 401 MEDICAL MICROBIOLOGY & IMMUNOLOGY

TOTAL HOURS: 48 CREDITS: 4

Unit-I History of Immunology Organs and cells of Immune System No. of hours: 10
Development of immunology. Types of immunity – innate and acquired; active and passive; humoral and cell-mediated immunity. Primary and secondary organs of immune system – thymus, bursa fabricus, bone marrow, spleen and lymph nodes. Cells of immune system. Identification and function of B and T lymphocytes, null cells, monocytes, macrophages, neutrophils, basophils and eosinophils.

Unit-II Antigens & Antibodies and hypersensitivity No. of hours: 10
Antigens – types, chemical nature, antigenic determinants, haptens. Factors affecting antigenicity. Antibodies – basic structure, types, properties and functions of immunoglobulins. Components of complement and activation of complement. Types of antigen-antibody reactions-agglutinations, precipitation, neutralization, complement

**Unit-III Clinical Microbiology**

No. of hours: 10


**Unit-IV Chemotherapy and vaccines**

No. of hours: 8


**UNIT V Microbial diseases**

No. of hours: 10

General account of the following diseases – causal organisms, pathogenesis, epidemiology, diagnosis, prevention and control of:
Air-borne diseases - Tuberculosis, Influenza
Food and water-borne diseases - Typhoid, Hepatitis- A

General account of the following diseases – causal organisms, pathogenesis, epidemiology, diagnosis, prevention and control of:
Insect-borne diseases – Malaria.
Contact diseases – Syphilis.
Zoonotic diseases – Rabies.
Blood-borne diseases –AIDS.
General account of nosocomial infections.

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**MBP- 401 MEDICAL MICROBIOLOGY & IMMUNOLOGY**

**TOTAL HOURS: 48**

**CREDITS: 2**

1. Identification of human blood groups.
2. Estimation of blood haemoglobin.
3. Perform Total Leukocyte Count of the given blood sample.
4. Perform Differential Leukocyte Count of the given blood sample.
5. Separate serum from the blood sample (demonstration).

6. Perform immunodiffusion by Ouchterlony method.

7. Identify bacteria (any three of *E. coli*, *Pseudomonas*, *Staphylococcus*, *Bacillus*) using laboratory strains on the basis of cultural, morphological and biochemical characteristics: IMViC, TSI, nitrate reduction, urease production and catalase tests.


11. Study symptoms of the diseases with the help of photographs: Polio, anthrax, herpes, chicken pox, HPV warts, AIDS (candidiasis), dermatomycoses (ring worms).

12. Study of various stages of malarial parasite in RBCs using permanent mounts.

**SUGGESTED READING**


UNIT I Microorganisms and their Habitats  No. of hours: 8

UNIT II Water Potability  No. of hours: 8
Microbiology of potable and polluted waters. Treatment and safety of drinking (potable) water, methods to detect potability of water samples: (a) standard qualitative procedure: presumptive test/MPN test, confirmed and completed tests for faecal coliforms (b) Membrane filter technique and (c) Presence/absence tests. Outlines of biodegradation of environmental pollutants – pesticides.

UNIT III Waste Management  No. of hours: 6
Solid Waste management: Sources and types of solid waste, Methods of solid waste disposal (composting and sanitary landfill) Liquid waste management: Composition and strength of sewage (BOD and COD), Primary, secondary (oxidation ponds, trickling filter, activated sludge process and septic tank) and tertiary sewage treatment.

UNIT IV Soil Microbiology and PGPR  No. of hours: 7
Biotic and abiotic components of soil, soil profile. Rhizosphere and phyllosphere

UNIT V Concept of Disease And Microbial pesticides  No. of hours: 7
Concept of disease in plants. Symptoms of plant diseases caused by fungi, bacteria, and viruses. Plant diseases caused by fungi (groundnut rust), bacteria (angular leaf spot of cotton) and viruses (tomato leaf curl Principles of plant disease control. Biological control of plant diseases. Biopesticides – Bacillus thuringiensis, Nuclear polyhedrosis virus (NPV), Trichoderma.
1. Study of soil flora isolation - qualitative & quantitative (bacteria, fungi and actinomycetes)
2. Enrichment/isolation of – starch hydrolysers.
4. Analysis of potable water: SPC, Presumptive, confirmed and completed test, determination of coliform count in water by MPN, Membrane filtration technique.
5. Waste water analysis: Biological Oxygen Demand (BOD).
6. Isolation and enumeration of major groups of microorganisms from rhizosphere and nonrhizosphere soil.
7. Study of root nodules and Isolation of *Rhizobium*
8. Isolation of *Azotobacter*
9. Staining and observation of Vesicular Arbuscular Mycorrhizal (VAM) fungi.
10. Isolation of plant diseases of local importance- Rusts, Smuts, Powdery mildews, Tikka disease of groundnut, Citrus canker, Bhendi yellow vein mosaic, Tomato leaf curl. Little leaf of Brinjal

**SUGGESTED READINGS**

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – Semister- Vla
MBT- 601 MICROBIAL DIAGNOSIS IN HEALTH CLINICS

TOTAL HOURS: 36 CREDITS: 3

Unit 1 Importance of Diagnosis of Diseases No. of hours: 8

Bacterial, Viral, Fungal and Protozoan Diseases of various human body systems, Disease associated clinical samples for diagnosis.

Unit 2 Collection of Clinical Samples No. of hours: 8

How to collect clinical samples (oral cavity, throat, skin, Blood, CSF, urine and faeces) and precautions required. Method of transport of clinical samples to laboratory and storage.

Unit 3 Direct Microscopic Examination and Culture. No. of hours: 8

Examination of sample by staining - Gram stain, Ziehl-Neelson staining for tuberculosis, Giemsa-stained thin blood film for malaria


Preparation and use of culture media - Blood agar, Chocolate agar, Lowenstein-Jensen medium, MacConkey agar, Distinct colony properties of various bacterial pathogens.

**Unit 4: Serological and Molecular Methods**  No. of hours: 6

Serological Methods - Agglutination, ELISA, immunofluorescence, Nucleic acid based methods - PCR, Nucleic acid probes.

Typhoid, Dengue and HIV, Swine flu

**Unit 5: Testing for Antibiotic Sensitivity in Bacteria**  No. of hours: 6

Importance, Determination of resistance/sensitivity of bacteria using disc diffusion method, Determination of minimal inhibitory concentration (MIC) of an antibiotic by serial double dilution method

**MBP- 601 MICROBIAL DIAGNOSIS IN HEALTH CLINICS**

**TOTAL HOURS: 36**

**CREDITS: 2**

1. Collection & transport of clinical specimens (Blood CSF Urine, Stool, Bone marrow, Sputum, Swabs, Aspiration fluid etc.), Receipts, Labeling, recording and dispatching clinical specimens.
2. Collection transport and processing of various clinical specimens, i.e. blood, CSF urine swabs faeces, etc. For microbiological diagnosis. Investigation of various common epidemics, Gastroenteritis, Cholera, Food poisoning, Meningitis, Encephalitis, P.U.O., Study of nosocomial infection.
3. Isolation of bacteria in pure culture and Antibiotic sensitivity.
4. Identification of common bacteria by studying their morphology, cultural character, Biochemical reactions, slide agglutination and other tests.
5. Maintenance and preservation of stock culture.

**SUGGESTED READING**


B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – Semester- VIb
MBT- 601 MICROBIAL BIOTECHNOLOGY

TOTAL HOURS:36 CREDITS: 3

Unit 1 Microbial Biotechnology and its Applications No. of Hours: 8
Microbial biotechnology: Scope and its applications in human therapeutics, agriculture (Biofertilizers, PGPR, Mycorrhizae), environmental, and food technology. Use of prokaryotic and eukaryotic microorganisms in biotechnological applications Genetically engineered microbes for industrial application: Bacteria and yeast

Unit 2 Therapeutic and Industrial Biotechnology No. of Hours: 7
Recombinant microbial production processes in pharmaceutical industries - Streptokinase, recombinant vaccines (Hepatitis B vaccine) Microbial polysaccharides and polyesters, Microbial production of bio-pesticides, bioplastics Microbial biosensors

Unit 3 Applications of Microbes in Biotransformations Products and their Recovery No. of Hours: 10
Microbial based transformation of steroids and sterols Bio-catalytic processes and their industrial applications: Production of high fructose syrup and production of cocoa butter substitute. Microbial product purification: filtration, ion exchange & affinity chromatography techniques Immobilization methods and their application: Whole cell immobilization

Unit 4 Microbes for Bio-energy and Environment No. of Hours: 7

Unit 5 RNAi and Intellectual Property Rights No. of Hours: 4
RNAi and its applications in silencing genes, drug resistance, therapeutics and host pathogen Interactions Patents, Copyrights, Trademarks

MBP- 601 MICROBIAL BIOTECHNOLOGY

TOTAL HOURS: 36 CREDITS: 2

1. Study yeast cell immobilization in calcium alginate gels
2. Study enzyme immobilization by sodium alginate method
3. Pigment production from fungi (Trichoderma / Aspergillus / Penicillium)

4. Isolation of xylanase or lipase producing bacteria

5. Study of algal Single Cell Proteins

**SUGGESTED READING**


B.Sc MICROBIOLOGY (CBCS) SYLLABUS  
THIRD YEAR – Semester- VII  
MBT- 701 FOOD AND INDUSTRIAL MICROBIOLOGY  
TOTAL HOURS: 36  
CREDITS: 3

**UNIT- I Food Microbiology – I**  
No. of hours: 7  
Microorganisms of food spoilage and their sources. Spoilage of different food aterials - fruits, vegetables, meat, fish. Canned foods. Food intoxication (botulism and staph poisioning), food-borne diseases (salmonellosis and shigellosis) and their detection.

**UNIT – II Food Microbiology – II**  
No. of hours: 7  
General account of food preservation. Microbiological production of fermented foods – bread, cheese, yogurt. Biochemical activities of microbes in milk. Microorganisms as food – SCP, edible mushrooms (white button, oyster and paddy straw). Concept of probiotics and neutraceuticals
UNIT – III  Industrial Microbiology – I  No. of hours: 7
Microorganisms of industrial importance – yeasts, moulds, bacteria, actinomycetes. Screening and isolation of industrially-important microorganisms. Outlines of strain improvement.

UNIT – IV  Industrial Microbiology – II  No. of hours: 6
Types of fermentation – aerobic, anaerobic, batch, continuous, submerged, surface, solid state. Design of a stirred tank reactor fermentor. Fermentation media

UNIT – V  Industrial Microbiology – III  No. of hours: 9
Industrial production of alcohols (ethyl alcohol), beverages (beer), enzymes (amylases), antibiotics (penicillin), amino acids (glutamic acid), organic acids (citric acid), vitamins (B12), biofuels (biogas - methane).

MBP-701  FOOD AND INDUSTRIAL MICROBIOLOGY
TOTAL HOURS: 36
CREDITS: 2

1. Observation of different spoiled food
2. Isolation of bacteria and fungi from spoilt bread/fruits/vegetables
3. Preparation of Yogurt/Dahi
4. Determination of the microbiological quality of milk sample by MBRT
5. Isolation of antagonistic microorganisms by crowded plate technique
6. Microbial fermentation for the production and estimation of ethanol
7. Microbial fermentation for the production and estimation of citric acid

SUGGESTED READING


B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – Semester- VIIIa
MBT- 801 MICROBIAL QUALITY CONTROL IN FOOD AND PHARMACEUTICAL INDUSTRIES

TOTAL HOURS: 36 CREDITS: 3

Unit 1 Microbiological Laboratory and Safe Practices No. of Hours: 10


Unit 2 Determining Microbes in Food / Pharmaceutical Samples No. of Hours: 8

Culture and microscopic methods - Standard plate count, Most probable numbers, Direct microscopic counts, Biochemical and immunological methods: Limulus lysate test for endotoxin, gel diffusion, sterility testing for pharmaceutical products

Unit 3 Molecular methods of diagnosis No. of Hours: 4

Molecular methods - Nucleic acid probes, PCR based detection, biosensors.
Unit 4 Pathogenic Microorganisms of Importance in Food & Water  No. of Hours: 10

Enrichment culture technique, Detection of specific microorganisms - on XLD agar, Salmonella Shigella Agar, Manitol salt agar, EMB agar, McConkey Agar, Saborauid Agar

Ascertaining microbial quality of milk by MBRT, Rapid detection methods of microbiological quality of milk at milk collection centres (COB, 10 min Resazurin assay)

Unit 5 HACCP for Food Safety and Microbial Standards  No. of Hours: 4

Hazard analysis of critical control point (HACCP) - Principles, flow diagrams, limitations
Microbial Standards for Different Foods and Water – BIS standards for common foods and drinking water

MBP- 801 MICROBIAL QUALITY CONTROL IN FOOD AND PHARMACEUTICAL INDUSTRIES

TOTAL HOURS: 36  CREDITS: 2

1. Microbiological laboratory safety- General rules & Regulations.
2. Staining Techniques (Grams and LPCB)–Food samples- vegetables and packed foods.
3. Sterility tests for Instruments – Autoclave & Hot Air Oven
4. Disinfection of selected instruments & Equipments
5. Sterility of Air and its relationship to Laboratory & Hospital sepsis.
6. Sterility testing of Microbiological media
7. Sterility testing of Pharmaceutical products –Antibiotics, Vaccines & fluids
8. Standard qualitative analysis of water.
9. Quantitative analysis of water – Membrane filter method
10. Analysis of food samples for Mycotoxins

SUGGESTED READING


7. Pharmaceutical Microbiology – W.B. Hugo
8. Pharmaceutical Microbiology – Purohit

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – Semister- VIIIb
MBT- 801 BIOFERTILIZERS AND BIOPESTICIDES

TOTAL HOURS: 36 CREDITS:3

Unit 1 Biofertilizers No of Hours: 10

General account of the microbes used as biofertilizers for various crop plants and their advantages over chemical fertilizers. Symbiotic N2 fixers: *Rhizobium* - Isolation, characteristics, types, inoculum production and field application, legume/pulses plants

*Frankia* - Isolation, characteristics, Alder, Casurina plants, non-leguminous crop symbiosis. Cyanobacteria, *Azolla* - Isolation, characterization, mass multiplication, Role in rice cultivation, Crop response, field application.
Unit 2 Non-Symbiotic Nitrogen Fixers

No of Hours: 6

Free living *Azospirillum, Azotobacter* - free isolation, characteristics, mass inoculums, production and field application.

Unit 3 Phosphate Solubilizers

No of Hours: 6

Phosphate solubilizing microbes - Isolation, characterization, mass inoculum production, field application

Unit 4 Mycorrhizal Biofertilizers

No of Hours: 7

Importance of mycorrizal inoculum, types of mycorrhizae and associated plants, Mass inoculum production of VAM, field applications of Ectomycorrhizae and VAM.

Unit 5 Bioinsecticides

No of Hours: 7

General account of microbes used as bioinsecticides and their advantages over synthetic pesticides, *Bacillus thuringiensis*, production, Field applications, Viruses – cultivation and field applications.

MBP- 801 BIOFERTILIZERS AND BIOPESTICIDES

TOTAL HOURS: 36 CREDITS: 2

1. Analysis of soil - pH, moisture content, water holding capacity, percolation, capillary action.

2. Isolation of microbes (bacteria & fungi) from soil (28°C & 45°C).

3. Isolation of phosphate solubilizers from soil

3. A visit to biofertilizers production unit to see Inoculum production and field application of Rhizobium, Azospirillum/Azotobacter

Suggested Readings


One credit consists of 16 in-class contact hours (with one contact hour equaling 50 minutes of a regular course or 100 minutes of a lab course) over a period of no less than two weeks. A regular semester (Spring: March - June, Fall: September - December) lasts 16 weeks. A student in a single class with 3 HUFS credits will have enrolled in 48 hours of class time. A student enrolled in our recommended 12 credits per semester will have enrolled in 192 hours of time spent in class. This does not include any study work spent outside of the lecture/lab period. 1 hour of class time/week = 16 hours... Total. 134/150. My hunch is that the 48 hours is the total that would count toward the total credit hours required for a degree. A course load of additional hours beyond the 48 in one’s major would not count toward, say, 120 hours for the degree. Continue Reading. Loading... Originally Answered: What does “Maximum 48 credit hours in the Major subject” mean? Am I limited to just take 48 credit hours in major Subject? This is a good question that you should research before selecting the school. This leaves 90-48 = 42 hours for OTHER classes. Of course you can take more classes related to your major, but they will not count towards your 42 hours of breadth requirements. A credit is the recognition for having taken a course at school or university, used as measure if enough hours have been made for graduation. In a college or university in the United States, students generally receive credit hours based on the number of “contact hours” per week in class, for one term; better known as semester credit hours (SCH). A contact hour includes any lecture or lab time when the professor is teaching the student or coaching the student while they apply the course information to
Total debt is calculated by adding up a company's liabilities, or debts, which are categorized as short and long-term debt. Financial lenders or business leaders may look at a company's balance sheet to factor in the debt ratio to make informed decisions about future loan options. Found within a company's general ledger, accounts payable represents a short-term debt that a business owes to its creditors, suppliers and others. Items in this account could include bills from credit card companies, landscaping services, office supply warehouses and more. 2. Wages payable. With employees on the payroll, businesses have a running wages payable account that includes the amount earned but not yet distributed in the form of a paycheck. Total party wipe, but at least we got chicken(tendies). I just want to pay off a couple credit cards and take a week off work. I'd also really like a bookcase for my apartment. I haven't been able to find one at Goodwill in the last year. Move to Vanguard when this is done. They don't seem to have a max you can put it at. calculation applies: 48 - 54 hours of total student learning hours = 1 unit of credit. S Example: Integrated lab with 36 hours of in-class and 18 hours of homework for 1 unit. Calculating Units: Other Instructional Formats. In these instances, committees should consider if the proposed weekly / daily hours can be reasonably achieved by a student in a short format? For example: S 3-unit ENGL 101 proposed for 2-week term. 54 in-class / 108 homework. Would be 27 hours in-class p/week and 54 hours p/week in homework. A credit is the recognition for having taken a course at school or university, used as measure if enough hours have been made for graduation. In a college or university in the United States, students generally receive credit hours based on the number of "contact hours" per week in class, for one term; better known as semester credit hours (SCH). A contact hour includes any lecture or lab time when the professor is teaching the student or coaching the student while they apply the course information to