NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
BIO 150 – INTRODUCTORY MICROBIOLOGY (4 CR.)

Course Description
Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

General Course Purpose
This is a one semester introductory college transfer-level course designed to meet the needs of allied health students, health science students, and for students interested in the relationships of microorganisms to individual and community health.

Course Prerequisites/Corequisites
Prerequisite: BIO 101 or BIO 141

Course Objectives
Lecture
Upon completion of this course, the student should be able to:

- List, classify, and contrast the main categories of microorganisms
- Draw and label the parts of a bacterial cell, giving possible functions for each part
- Contrast eukaryotic and prokaryotic cells
- Draw a typical growth curve and describe its phases
- List the important events and their significance associated with microbial metabolism
- Outline the principle concept of microbial genetics and recombinant DNA technology
- List and discuss the principle reasons for and methods of controlling and/or eliminating microorganisms
- Describe microbial mechanism of pathogenicity
- Provide the following for the most common diseases in human body systems caused by microorganisms
  - Causative organism
  - Occurrence
  - Reservoir
  - Mode of transmission
  - Incubation period
  - Period of communicability
  - Method of control including specific treatment
- Outline and describe the human body’s defensive mechanisms against infectious diseases
- Outline the principle of epidemiology
- Describe the principle characteristics of viruses, viroids, and prions

Laboratory
Upon completion of this course, the student should be able to:

- Use aseptic technique in handling microorganisms
- Use standard techniques of quantitative measurement of microbial growth
- Use standard techniques of microscopy and staining
- Apply standard microbiological techniques to the isolation, cultivation, and identification of microorganisms

Major Topics to be Included
- Microscopy and staining techniques
- Microbial cell structure and function: eukaryotic and prokaryotic
- Microbial metabolism, microbial growth, and control of microbial growth
- Microbial genetics
- Bacteria, Fungi, Protozoa, Helminths, Viruses, Viroids, Prions
- Infectious disease, pathogenicity, epidemiology
- Immunology
- Microbial diseases of the skin, eyes, nervous system, cardiovascular system, lymphatic systems, respiratory system, digestive system, urinary system, reproductive system