

Approval Form

Proposal Title: Introduction to Virology

Sponsor(s) J. Scott Dept.: Biological Sciences Ext. 3571

R.J. Meagher

Check one: Course Specialization Concentration Minor Achievement Certificate
 Certification Program Major Program Minor Change Addition of a prerequisite & new catalog description
(please name deletion or credit/article/catalog change)

Undergraduate Graduate 4 Credit Hours

<p>Step 1 (Department)</p> <p><input checked="" type="checkbox"/> Approved _____ Date</p> <p><input type="checkbox"/> Not Approved</p> <p>_____ Dept. CC Chairperson</p> <p><input checked="" type="checkbox"/> Reviewed <u>10/17/94</u> Date</p> <p>_____ Dept. Chairperson</p>	<p>Step 2 (Receipt)</p> <p><input checked="" type="checkbox"/> SCC# <u>94-95-41</u></p> <p>Proposal Received _____ Date</p> <p>SENATE</p> <p>OCT 20 1994</p> <p>RECEIVED</p> <p>_____ SCC Chairperson</p>	<p>Step 3 (School CC)</p> <p>Reviewed <u>11/15/94</u></p> <p><input checked="" type="checkbox"/> Approved <input type="checkbox"/> Not Approved</p> <p>Comments:</p> <p>_____ School Curr Comm Chairperson</p>
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Step 4 (Academic Dean)

Recommend
 Not Recommend
 Conditionally Recommend (see comments)

Reviewed _____ Date

Comments:

SENATE

DEC 15 1994

_____ Signature, Dean of School

Step 5 (SCC)

Open Hearing 2/2/95 Approved by Senate Curriculum Committee 2/2/95
Date Date

Returned to sponsor(s) for the following reasons:

Step 6 (Senate)

Presented to Senate 3/1/95

Approved Not Approved

Notification to Executive Vice-President/Provost _____

Step 7 (Executive V.P./Provost)

Received 3/9/95
Date
If no, reasons are as follows.

Approved Yes No

Student credit hours _____

Faculty load hours _____

Equalized credit hours _____

Official copy and approval sheet filed _____
Date

[Signature]
Signature, Executive Vice-President/Provost

Registrar

Approved course description received 15 Mar, 95
Date

Hegis Taxonomy and Course Number assigned n/a

[Signature]
Signature, Registrar

15 Mar, 95
Date

Notification forwarded:

- Senate Curriculum Committee Chairperson
- Department Chairperson(s)
- Academic Dean(s)
- Registrar
- Sponsor(s)

[Handwritten initials]

INTRODUCTION TO VIROLOGY

MINOR CURRICULAR CHANGE CHANGE IN CATALOG DESCRIPTION and ADDITION OF A PREREQUISITE

1. Details:

a. Change Requested:

Addition of a Prerequisite:

Microbiology 0411.330, Cell Biology 0401.430, or
Molecular Genetics 0422.450
(besides Biology I and II, 0401.100 & 0401.101)

New [Proposed] Catalog Description:

0401.320 Introduction to Virology
(Prerequisites: 0401.100 and 0401.101, and 1 of the
following: 0401.430, 0411.330, or 0422.450
This laboratory course explores topics such as virus
origin and evolution, their physical structure and
chemical composition, taxonomy, and modes of
transmission. The mechanisms involved in their control
of the machinery of their host cells will be studied in
detail. Particular focus will be placed on important
virus-associated human and animal diseases, AIDS, and
the role of viruses in cancer.

Old Catalog Description:

0401.320 Introduction to Virology
(Prerequisites: 0401.100 and 0401.101)
This laboratory course explores topics such as virus
origin, chemical composition, transmission, host-
parasite interaction, assay, and life histories of
important plant and human pathogens. This course may
not be offered annually.

- b. Sponsors: Department of Biological Sciences
Joanne Scott, Ph.D., Undergraduate Academic Advisor
Richard J. Meagher, Ph.D., Department Chairperson

2. Rationale:

a. Statement of Need:

For the new prerequisite:

This course covers topics clearly appropriate for
junior or senior students. The level of understanding of
DNA and RNA, protein synthesis, and control of gene

expression necessary to understand how viruses reproduce and take over the protein synthesizing machinery of a cell is at a level considerably higher than what is currently achieved in Biology I and II. In order to prevent the necessity of the instructor spending the first several weeks of the course teaching molecular genetics, the student will be required to have already completed an upper-level course in which molecular genetics is discussed.

For the new catalog description:

The current catalog description was written many years ago by a professor who never taught the course; the new catalog description was written by the professor who has taught the course for the past 4 years. The new catalog description more accurately reflects the topics that will be discussed in the course, and uses language that is more consistent with current useage in the field of virology.

b. Statement of Curricular Effect:

As might be predicted, the addition of an upper-level course as a prerequisite will reduce the number of students who are eligible to enroll in the course. However, more students currently are interested in taking the course than there are seats available. The additional prerequisite will effectively result in enrollment by students who are more advanced in the Major. It will have the added result of encouraging more students to take Cell Biology and Microbiology, which are more central to the "core" of biological sciences than the field of virology.

The change in prerequisites will not significantly affect the course syllabus. Removal of the need to introduce molecular genetics in the beginning of the course will, however, allow time to cover some of the topics in more depth.

3. Results of Consultation:

All consultation was intradepartmental. The changes come from the instructor who has taught the course for several years.

INTRODUCTION TO VIROLOGY
Course Syllabus

0401.320
4 sem. hrs.

COURSE OBJECTIVES:

This laboratory course explores topics such as the structure & chemical composition of viruses, their origin and evolution, their modes of transmission, and how they are replicated. The mechanisms involved in their control of the machinery of their host cells will be studied in detail. Particular focus will be placed on important virus-associated plant & animal diseases, AIDS, & the role of viruses in cancer.

(Prerequisites: 0401.100, 0401.101, and 1 of the following: 0401.430, 0401.330, or 0401.450)

COURSE TOPIC OUTLINE:

Introduction: Historical Perspective; The Nature, Isolation, & Measurement of Viruses
Structure & Components of Viruses; Viral Enzymes
Classification & Taxonomy
Reproduction of Viruses; Host/Tissue Specificity
The Virus Multiplication Cycle
Single-Stranded RNA Viruses
 Plus-Strand RNA Viruses
 Unenveloped (some bacteriophage & the infectious agents of polio, hepatitis A, the common cold, etc.)
 Enveloped (infectious agents of yellow fever, German measles, AIDS, etc.)
 Minus-Strand RNA Viruses (infectious agents of measles, mumps, rabies, influenza, etc.)
Double-Stranded RNA Viruses
Viroids and Prions
Single-Stranded DNA Viruses (some phages & the infectious agents of feline panleukopenia, fifth disease, etc.)
Double-Stranded DNA Viruses (some phages & the infectious agents of hepatitis B, herpes, chickenpox, smallpox, etc.)
Immunologic Responses to Virus Infection
Treatment of Viral Disease; Viral Vaccines
Tumor Viruses -- Role of Viruses in Cancer
 Transformation of Animal Cells by Tumor Viruses
 Oncogenes & Proto-Oncogenes
Human Retroviruses, especially HIV
Origin and Evolution Viruses

METHOD OF GRADING:

There will be several "hour exams" plus a final exam. Class participation is considered an essential aspect of the professor's evaluation of the student's academic progress in the course.