



Master's Degree Program in Biomedical Science



BMS 6601: Fundamentals of General Pathology

Syllabus: Summer 2012

Rudolf Virchow (1821 - 1902)

“Epidemics resemble great warning signs on which the true statesman is able to read that the evolution of his nation has been disturbed to a point which even a careless policy is no longer allowed to overlook.”

Rudolf Ludwig Karl Virchow (1821-1902) was born in the small Pomeranian city of Schivelbein, Germany. His early life was in a modest, rural background which he never completely forgot. As a young man he set a gigantic goal for himself: "An all-around knowledge of nature, from the deity down to the stone."

He was educated at the Friedrich-Wilhelms Institut in Berlin which provided medical education for gifted boys in return for service in the Army.

Virchow's early interest and direction was in epidemiology and the history of disease. As a young man, he was an experimentalist (embolism) and biochemist (amyloid, haematoidin, myelin), but his interest turned and developed in microscopic pathology. He became a great oncologist, and his pathological studies made him an important biologist.

Virchow laid the foundation for modern pathology. In 1858 at the age of twenty-six he published "Die Cellularpathologie in ihrer Begründung auf physiologische und pathologische Gewebelehre." The results of his investigations on thrombosis and embolism and the essence of Virchow's doctrine: "with his immortal aphorism 'omnis cellula e cellula' " were published in two articles that revolutionized thinking in the medical field. Medicine in Germany turned from "romantic" to modern as observation of clinical findings became the standard. His important discoveries in parasitology and his social approach in medicine and epidemiology set a new standard as a pioneer in modern public health.

Virchow's notable reputation developed from his "civic courage." He fought against militarism, Anti-Socialist Laws, and Anti-Semitism. At his death Germany complained that she lost four great men in one: her leading pathologist, her leading anthropologist, her leading sanitarian, and her leading liberal.¹

¹Sources: 1) Rudolf Virchow Doctor Statesman Anthropologist by Erwin H. Ackerknecht, The University of Wisconsin Press, Madison, 1953; 2) Selected Readings in Pathology From Hippocrates to Virchow, edited by Esmond R. Long, Charles C. Thomas, Springfield, Illinois/Baltimore, Maryland, 1929.

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PCB 6933: Fundamentals of General Pathology
 Summer Term 2012
 SCHEDULE

		<i>Rubin Essentials</i> , (5 th edition) Required Reading	Date of Activity
Topic	Lecture Handouts and Notes Pages	Textbook Reading	All activities are 1:30 - 4:40 PM
Introduction to the Course	pp 4-9	p (1)	Mon June 25
Cell Injury & Aging	pp 10-21; 149-155	pp (1-17)	Mon June 25
Acute Inflammation Parts 1,2	pp 22-35	pp (18-35)	Wed Jun 27
Acute & Chronic Inflammation Parts 3,4 Tissue Renewal & Repair	pp 35-42	pp (18-52)	Mon July 2
Hemodynamic Disorders, Thrombosis, and Shock Take Home Quiz#1 distributed	pp 43-54	pp (117-130;195-98)	Tues July 3
No class – July 4 th holiday! Enjoy!			Wed July 4
Genetic Disorders	pp 86-117	pp (92-101;103-105;108-116)	Mon July 9
Take Home Quiz#1 due before class In class lab exercises	Lab Exercises		Wed July 11
Mid Term Examination & Exam Review			Mon July 16
Neoplasia I	pp 70-85	pp (71-91)	Wed July 18
Neoplasia II	pp 70-85	pp (71-91)	Mon July 23
Take Home Quiz#2 distributed Nutrition & Environmental Diseases	pp 118-148	pp (131-147)	Wed July 25
Diseases of Blood vessels	pp 55-69	pp (195-205)	Mon July 30
Take Home Quiz#2 due before class “Wet” lab exercise (4 th Floor BC-71)			Wed Aug 1
Final Examination & Course SPOT Evaluations			Mon Aug 6\

Syllabus prepared and edited by: Morton H. Levitt, M.D., M.H.A., FCAP

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Syllabus - Electronic

The “Course Documents” section in Blackboard includes an electronic version of the study notes (included in this Syllabus) for each lecture. The “Powerpoint Lectures” section has an electronic version of the PowerPoint lectures for the course. These are designed to supplement and organize the material in the textbook and the study notes, but not be a complete substitute for it.

Course Objectives

The Fundamentals of General Pathology course in the summer semester covers the basic pathophysiology of mechanisms of disease in medicine. The knowledge gained from study of these basic mechanisms can be applied to other disciplines in the biomedical sciences. This pathology course will incorporate gross pathologic, microscopic, and radiologic material to assist you in understanding fundamental disease. The knowledge gained from a study of pathology will integrate with other courses to provide you with the means for conducting future basic science and translational research as well as provide the basis for future medical, dental, veterinary, and allied health education .

Lectures / Discussions / Tutorials

Check locations for lectures in your master schedule, which is posted on the Blackboard site. See the course schedule for dates and times. Note that due to room scheduling conflicts and other exigencies, the schedule is subject to change and the student is advised to check the electronic version of the schedule frequently. Changes in the schedule will also be e-mailed to the class. The lectures are designed to cover the course content in an organized fashion, illustrating the concepts and allowing time for you to ask questions. There are 27 lecture, 4 exam, and 6 laboratory hours.

Laboratory Exercises

Check the schedule for times and locations. There are 6 laboratory hours.

Required Textbooks

Essentials of Pathology, 5th edition, by Rubin.

Computer Resources

Multimedia exercises covering the small groups/laboratories/PBLs, as well as images supporting the lecture and syllabus materials, and the examination question banks, are available via the World Wide Web at:

<http://library.med.utah.edu/WebPath/webpath.html#MENU>

Contact Person

The course director is Dr. Morton H. Levitt, who can be contacted at 561-297-0911. Please feel free to stop by the office [Room 338] at any time. Dr. Levitt's e-mail address is: mlevitt3@fau.edu

Faculty

From time to time, guest lecturers and facilitators are invited to participate in the course.

Examinations/Grading

The material for examinations and quizzes will come from lectures, lecture notes, and laboratory exercises and the textbook.

The format for the two examinations will be as follows:

- Written examination items: multiple choice questions (single best answer and extended matching).
- Practical examination items: multiple choice (single best answer) questions based upon illustrations of gross and microscopic lesions or charts and graphs, from material covered in laboratories, small groups, PBLs, and lectures.

The final grade in PCB 6933 will be determined as follows:

75% Exams (2 exams)
25% laboratory & quizzes (2 quizzes)

100%

THE GRADING SYSTEM

The grading system will follow the recommended policies of the Florida Atlantic University (see below). For this course, the following will be employed:

Grade	Grade Points per Credit
A+	97-100
A	94-96

A-	90-93
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D+	67-69
D	64-66
D-	60-63
F	<60

Florida Atlantic University has a plus/minus (+/-) grading system. Grades for the undergraduate and graduate courses are reported by the symbols indicated in the following table:

Grade	Grade Points per Credit
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
D-	0.67
F	0.00
S (Satisfactory)	Credit only
U (Unsatisfactory)	No credit
I	Incomplete
AU (Audit)	No credit

CR (Credit by Exam)	Credit only
W (Withdrawal)	No credit
WM (Withdrawal— Exceptional Circumstance)	No credit
NR	No reported grade
P (Pass)	Undergraduates only, Credit only

Administrative Notations

The following notations are not grades and are not assigned by instructors, but are entered administratively on the transcript when appropriate:

AU	Audit
CR	Credit only
W	Withdrawal
WM	Withdrawal (Exceptional Circumstance)
NR	No reported grade

The “AU” notation carries no credit and indicates that the student registered for the course only as an auditor.

A “CR” notation indicates that the student received credit for the course by examination (see Credit by Examination later in this section).

A “W” notation indicates that the student withdrew from the course during the third to eighth week of the semester (see Drop/Add and Withdrawal in this section). The course appears on the transcript, but no credit is awarded and the course is not included in the grade point average.

The “WM” notation indicates that the student was granted an Exceptional Circumstance withdrawal.

When an instructor does not turn in a grade for a student in a particular course by the deadline for submission in the semester the course was taken, the Registrar will temporarily enter the notation “NR” on the transcript. The “NR” is not a grade, and courses so marked are not included in the grade point average. When the instructor submits a grade to the Registrar’s Office, it will replace the “NR.”

Grading Information Specifically for Graduate Students

The grades of “A” through “C,” and “S” are passing grades. The grades of “B-,” “C+,” and “C,” while considered passing for undergraduate students, are indicative of unsatisfactory work for graduate students and may not be accepted for some courses. The grades of “C-,” “D+,” “D,”

“D-,” “F,” and “U” are failing grades.

No credits are earned in courses in which grades of “AU,” “CR,” “F,” “I,” “U,” “W,” or “WM” are received. The grades “S” and “U” are used to indicate satisfactory or unsatisfactory performance in courses approved for such grading. The Pass/Fail (P/F) option is not available for graduate courses. All thesis/dissertation grading will be “S” or “U.”

A student who registers for a course but fails to meet the course requirements, without officially dropping the course, will receive a grade of “F” in the course. See Drop/Add section. In extraordinary circumstances, the faculty may record “NR,” which will appear on the transcript as “NR” until the situation is resolved.

Satisfactory Academic Performance

To remain in good academic standing, each graduate student at Florida Atlantic University must maintain a satisfactory record. A cumulative 3.0 average must be maintained on all degree requirements listed on the Plan of Study. This is the minimum quality necessary for a graduate degree at Florida Atlantic University. Individual degree programs may have higher academic performance standards. (Revised May 21, 2009.)

The following Attendance, Remediation, Honor Code, and ADA policies will apply:

STUDENT CODE OF CONDUCT REGULATIONS

Responsibility and Discipline

Florida Atlantic University is dedicated to the intellectual, social, and moral development of students in order to provide responsible leaders who can work effectively in a democratic society.

Under the authority granted by the Florida Board of Governors, the University has the right and responsibility to determine who shall be admitted to the institution, the conduct or behavior acceptable to the institution, and under what conditions one may continue as a student. As a condition for admission to the University, students agree to abide by the policies and regulations of the institution. The president of the University has responsibility for student conduct and discipline. That responsibility shall be exercised through the University Student Code of Conduct ([Regulation 4.007](#)).

Every student is subject to federal and state law, respective county and city ordinances, and all Florida Board of Governors and University rules and regulations. Violations of these laws, ordinances, or rules and regulations may subject the violator to appropriate disciplinary action by University authorities.

The president or approved designee shall have the authority, after notice to the student of the charges and a hearing thereon, to expel or otherwise discipline any student who shall be found to have violated a rule or regulation of the Florida Board of Governors or the University or any law or ordinance.

The president or approved designee shall have the authority to order any student to cease and desist any activity, which in the president's or designee's judgment, disrupts the orderly operation of the institution. Any student failing to abide by the cease and desist order shall be subject to interim suspension pending a hearing.

The conviction of a student for a criminal offense of a kind that interferes with the educational or orderly operation of the University or of a kind which, if the student were allowed to remain enrolled, would endanger the health, safety or property of members of the academic community, shall be sufficient grounds for expulsion or other disciplinary action against such student.

Except as provided above, in all student violations of nonacademic rules and regulations, a student shall be afforded adequate notice of charges, a reasonable time to answer, a fair and impartial hearing, and a decision. The final administrative appeal shall be to the president or approved designee who may reopen the hearing, order a new hearing or accept determination of sanctions. In the conclusion of the appeal process, the decision of the president or president's designee shall be final. For full details of the FAU Student Code of Conduct, see [University Regulation 4.007](#).

Attendance Policy

We believe that:

Professionalism is a major component of our medical curriculum. We believe students should conduct themselves appropriately in the various educational activities of the curriculum. This conduct includes coming to educational activities on-time, using laptop computers and other electronic devices only for course work during the educational activity, and not disrupting the class if late. The faculty should also demonstrate professionalism, by starting and ending all scheduled educational activities on time and providing a course schedule with clearly explained course policies in the course syllabus. Any changes in the schedule should be given to the students in a timely manner.

Students will be accountable and personally responsible for attending all educational activities (lectures, labs, quizzes and examinations, computer sessions, etc.).

Unexcused absences reflect negatively on the goals and objectives of the graduate curriculum and demonstrate unprofessional behavior by the respective student.

We owe it to our state legislature and the citizens of the State of Florida to provide a quality educational program that meets the needs of our students in preparing them for the graduate degree.

Attendance Policy

Students are expected to attend all scheduled activities. Students are expected to be on time. Being on time is defined as being ready to start at the assigned time. If a student has an

emergency that prevents her/him from attending a scheduled activity, s/he is to call and notify the course. It is important that students realize that their absence or tardiness negatively impacts a number of other people. Attendance, including tardiness, is part of the student's evaluation for professionalism. Negative evaluations may result in decreased grades and in severe cases, referral to the Student Evaluation and Promotion Committee.

Procedure for Notification of Absence

If the student knows in advance of an upcoming legitimate absence, he or she should communicate with the course director. The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the course director and final decisions regarding these actions shall rest with the course director.

If the absence occurs due to an unforeseen emergency, the student should contact the course director immediately to report the absence including the reason for the absence. The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the course director and final decisions regarding these actions shall rest with the course director.

Remediation Policy for Absences from Examinations, Quizzes, Small Group Sessions, Preceptor visits, and Clerkship Call

The remediation policies for absences from examinations, quizzes, small group sessions, and clerkship call are:

1. **POLICY ON MISSED EXAMINATIONS:** Students are required to take examinations. A student can only be excused from an examination by a course/education director decision based on the personal situation of the student. **All examinations must be made up within 1 week of returning to class.** The Course Director will determine the time of the exam make-up session. The student will be given the same examination given to the other students.
2. **POLICY ON MISSED QUIZZES:** Students are required to take both scheduled quizzes in this course. A student can only be excused from a quiz by a Course Director decision based on the personal situation of the student. The student must make arrangements with the Course Director to make up a missed quiz. **All quizzes must be made up within 1 week of returning to class.** The student will be given the same quiz given to the other students.

Academic Honor Code:

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility.

The FAU Honor Code requires a faculty member, student, or staff member to notify an instructor when there is reason to believe an academic irregularity is occurring in a course. The instructor must pursue any reasonable allegation, taking action where appropriate. The following constitute academic irregularities:

1. The use of notes, books or assistance from or to other students while taking an examination or working on other assignments, unless specifically authorized by the instructor, are defined as acts of cheating.
2. The presentation of words or ideas from any other source as one's own is an act defined as plagiarism.
3. Other activities that interfere with the educational mission of the University.

For full details of the FAU Honor Code, see University Regulation 4.001 at www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

Students With Disabilities

In compliance with the American Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) – in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

Unexcused Absences

“It will be the responsibility of the course directors to clearly state in their respective course syllabi the implications for having an unexcused absence from a scheduled educational or examination activity in a course or clerkship.” **For BMS 6601, students with more than 2 such absences in the Summer Term will not receive academic credit for the course and a grade of “F” will be submitted to the Registrar. Students who have an unexcused absence from an examination or a quiz will lose the entire score (points) awarded for that examination or quiz, and the final grade for the course will reflect this loss.**

Course Objectives

1. Demonstrate knowledge of general categories of disease conditions.
2. Develop a vocabulary that allows for description of disease processes and communicating findings to other research and clinical scientists.

3. Demonstrate knowledge of the molecular and cellular basis for inflammatory disease states.
4. Demonstrate knowledge of the molecular basis for neoplastic diseases.
5. Demonstrate knowledge of the pathophysiology of common pathologic conditions.
6. Demonstrate the ability to recognize abnormal gross and microscopic findings in the context of a common clinical disease example.
7. Demonstrate a basic knowledge and interpretation of laboratory findings associated with disease conditions.
8. Demonstrate professionalism in working with colleagues and faculty.
9. Demonstrate knowledge of fundamental mechanisms of cell injury, repair and adaptation.
10. Demonstrate knowledge of common neonatal, pediatric and congenital diseases and their diagnosis.
11. Demonstrate knowledge of the pathogenesis and immunologic aspects of aging and principles of aging at the clinical, cellular and sub-cellular levels.