



UNIVERSITY OF KENTUCKY

**Dean and Vice President
for Clinical Affairs**

*College of Medicine
MN 150 Chandler Medical Center
800 Rose Street
Lexington, KY 40536-0298
(859) 323-6582
Fax: (859) 323-2039
www.uky.edu*

July 23, 2004

MEMORANDUM

TO: David S. Watt, PhD
Associate Provost for Academic Affairs
Chair, Academic Council for the Medical Center

FROM: Jay A. Perman, M.D. *Jay*
Dean and Vice President for Clinical Affairs

RE: Major Change Course Application

The Faculty Council of the College of Medicine has approved and submits for your consideration and approval the following major change course application:

MI 816 – Cellular Structure and Function/Genetics

Description: Change in credit hours from 3 to 4

Justification: The number of hours of instruction, clinical correlations and problem set practice exceeds what is appropriate for a 3 credit course. In the 12-weeks of the course faculty give 39 hours of lecture, 18 hours of clinical correlations and 10 hours of problem set practice and discussion. In the coming year there will 10 clinical correlations instead of the present 9 which is 2 more hours than in the past year.



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MEMORANDUM

TO: Deans, Department Chairs and Members of the University Senate

FROM: Jay A. Perman, M.D.
Dean and Vice President for Clinical Affairs *Jay*

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**UNIVERSITY OF KENTUCKY
APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR**

12. If the course is 400G or 500 level, include syllabi or course statement showing differentiation for undergraduate and graduate students in assignments, grading criteria, and grading scales. Check here if 400G-500.

12. Is this a minor change? Yes No
(NOTE: See the description on this form of what constitutes a minor change. Minor changes are sent directly from the Dean of the College to the Chair of the Senate Council. If the latter deems the change not to be minor, it will be sent to the appropriate Council for normal processing.)

13. Within the Department, who should be consulted for further information on the proposed course change?

Name: Alan M. Kaplan Phone Extension: 323-8966

Signatures of Approval:

AM Kaplan
Department Chair
Jay A. Kinn
Dean of the College

5/10/04
Date
7-26-04
Date

Date of Notice to the Faculty

6/23/04

Date

7/22/04

Date

Edward J. Jennings
Curriculum Committee **Undergraduate Council
Thomas W. King
Faculty Council **Graduate Council

**Academic Council for the Medical Center

Date

**Senate Council

Date of Notice to University Senate

**If applicable, as provided by the Rules of the University Senate.

ACTION OTHER THAN APPROVAL.

The Minor Change route for courses is provided as a mechanism to make changes in existing courses and is limited to one or more of the following:

- a. change in number within the same hundred series;
- b. editorial change in description which does not imply change in content or emphasis;
- c. editorial change in title which does not imply change in content or emphasis;
- d. change in prerequisite which does not imply change in content or emphasis;
- e. cross-listing of courses under conditions set forth in item 3.0;
- f. correction of typographical errors. [University Senate Rules, Section III - 3.1]

MI 816 CELLULAR STRUCTURE AND FUNCTION/GENETICS. (3)

This course combines small group meetings, lecture, clinical correlations, problem-based learning, and problem-solving sessions in providing an understanding of the relationship of human genetics to human health and disease. Close integration with biochemistry topics provides a better picture of how biochemistry, genetics and molecular biology contribute to normal human development and medicine. Lecture, 20 hours per week. Prereq: Admission to Medical School (first year). (Same as MD 816.)

NEW DESCRIPTION

MI 816 CELLULAR STRUCTURE AND FUNCTION/GENETICS. (4)

This course combines small group meetings, lecture, clinical correlations, problem-based learning, and problem-solving sessions in providing an understanding of the relationship of human genetics to human health and disease. Close integration with biochemistry topics provides a better picture of how biochemistry, genetics and molecular biology contribute to normal human development and medicine. Lecture, 20 hours per week. Prere: Admission to Medical School (first year). (Same as MD 816.)

Reason for Change in MI 816

When the Kentucky block curriculum was introduced in 1992, three credit hours was appropriate for training medical students in human genetics. However, that is no longer the case with the recent explosion in genetic information typified by the human genome elucidation. Over the years, many additional lecture hours and several clinical correlations (two-hour sessions with one or more patients and a primary physician) have been added. Currently, we present in twelve weeks 39 hours of lecture, 20 hours of clinical correlations and 10 hours of problem set practice and discussion. It seems appropriate to increase the credit hours to four.

The number of hours of instruction, clinical correlations and problem set practice exceeds what is appropriate for a 3 credit course. In the twelve weeks of the course faculty give 39 hours of lecture, 18 hours of clinical correlations and 10 hours of problem set practice and discussion. In the coming year we are going from 9 clinical correlations (with patients, primary physician and course faculty) to 10 clinical correlations (2 more hours than this past year). We are picking up a clinical correlation dropped by the Biochemistry portion of Cellular Structure and Function.

CELLULAR STRUCTURE & FUNCTION 2003- 2004

Revision: 08/18/03

8:00 AM TOPICS/ACTIVITIES

9:00 AM TOPICS/ACTIVITIES

10:00 AM TOPICS/ACTIVITIES

Week 1

Mon	11/17	Orientation to Block and Biochemistry (B-ST)	<u>Orientation to Genetics (G-JD)</u>	
Tue	11/18	Chemical Prin. in Biol. Systems (B-TV)	<u>Mitosis and Meiosis (G-JD)</u>	<u>Discussion (G-JD)</u>
Wed	11/19	Properties of Amino Acids (B-TV)	<u>Pedigrees and Probability (G-RC)</u>	<u>Probability Continued (G-RC)</u>
Thur	11/20	Structure & Chemistry of Proteins I (B-TV)	Structure & Chemistry of Proteins II (B-TV)	
Fri	11/21	Structure & Chemistry of Proteins III (B-TV)	Problem Set (B-TV)	

Week 2

Mon	11/24	Structure & Chemistry of Proteins IV (B-TV)	<u>Autosomal Dominance & Recessive (G-BK)</u>	<u>Discussion/Problem Solving (G-RC)</u>
Tue	11/25	Introduction to Enzymes (B-TV)	Enzyme Kinetics I (B-TV)	
Wed	11/26	Enzyme Kinetics II (B-TV)	<u>X-linked (G-BK)</u>	
Thur	11/27 - 11/28 <<<<< THANKSGIVING BREAK >>>>>			

Week 3

Mon	12/01	Mechanisms of Enzyme Action I (B-TV)	<u>Hardy-Weinberg (G-BK)</u>	Problem Set (B-TV)
Tue	12/02	Mechanisms of Enzyme Action II (B-TV)	<u>Multifactorial (G-BK)</u>	
Wed	12/03	Structure of Hemoglobin (B-TV)	<u>Mitochondrial Inheritance (G-BK)</u>	<u>Problem Set (G-BK)</u>
Thur	12/04	Hemoglobin & Gas Transport I (B-TV)	Hemoglobin & Gas Transport II (B-TV)	<u>Clin. Corr.: Neural Tube Def. (G-AP)</u>
Fri	12/05	Hemoglobin & Gas Transport III (B-TV)	Problem Set (B-TV)	Problem Set (B-TV)

Week 4Mon 12/08 **BIOCHEMISTRY EXAM I (8-11:30 AM)**

Tue 12/09 Carbohydrate Chemistry I (B-ST)

Wed 12/10 Carbohydrate Digestion (B-ST)

Thur 12/11 Glycolysis (B-ST)

Fri 12/12 Water-soluble Vitamins (B-ST)

Carbohydrate Chemistry II (B-ST)

Baysian Analysis II (G-RC)Variation in Expressivity II (G-RC)

Problem Set (B-ST)

Baysian Analysis I (G-RC)Variation in Expressivity I (G-RC)

Gal/Fru (B-ST) 11 am - HMS shunt (B-ST)

Discussion/Problem Solving (G-RC)**Week 5**

Mon 12/15

Tue 12/16 Glycogen Metabolism I (B-ST)

Wed 12/17 TCA cycle (B-ST) (B-ST)

Thur 12/18 Regulation of Glc Metabolism (B-ST)

Fri 12/19 Oxidative Phosphorylation (B-ST)

GENETICS EXAM I (9 AM)Gene Structure & Expression I (G-JD)

Gluconeogenesis (B-ST)

Electron Transport (B-ST)

Gene Structure & Expression II (G-JD)

Glycogen Metabolism II (B-ST)

Clin. Corr.: DMD (G-JD)*Problem Set (B-ST)*Clin. Corr.: Cystic Fibrosis (G-JD)

12/20 - 01/04

<<<< WINTER BREAK >>>>

Week 6

Mon 01/05 Lipid Chemistry (B-ST)

Tue 01/06 Lipid Digestion and Transport (B-ST)

Wed 01/07 Lipid Metabolism II (B-ST)

Thur 01/08 Regulation of Lipid Metabolism I (B-ST)

Fri 01/09 Regulation of Lipid Metabolism II (B-ST)

Nature of Mutation I (G-JD)

Lipid Metabolism I (B-ST)

Lipid Metabolism III (B-ST)

Discussion/Problem Solving (G-JD)*Problem Set (B-ST)*Nature of Mutation II (G-JD)11 AM Problem Set (G-JD)Hemoglobinopathies (G-JD)Clinical and Molecular Diversity (G-JD)

Week 7

Mon	01/12	BIOCHEMISTRY EXAM II (8-11:30 AM)		
Tue	01/13	Cholesterol Metabolism I (B-ST)	Cholesterol Metabolism II (B-ST)	<u>Tracking Disease Genes I (G-JD)</u>
Wed	01/14	Fat-soluble Vitamins (B-ST)	<u>Tracking Disease Genes II (G-JD)</u>	Clin. Corr.: Hypercholesterolemia (B-ST)
Thur	01/15	Blood Clotting (B-ST)	<u>Tracking Disease Genes III (G- JD)</u>	
Fri	01/16	Heme Synthesis (B-ST)	<u>Cytogenetics I (G-AP)</u>	Problem Set (B-ST)

Week 8

Mon	01/19		<<<<<Martin Luther King Day>>>>>	
Tue	01/20	Erythrocyte Metabolism (B-ST)	<u>Cytogenetics II (G-AP)</u>	Heme Degradation (B-ST)
Wed	01/21	Iron Metabolism (B-ST)	<u>Cytogenetics III (G-AP)</u>	<u>Cytogenetics IV (G-AP)</u>
Thurs	01/22	Minerals (B-ST)	<u>Clin. Corr.: Fragile X Syndrome (G-AP)</u>	
Fri	01/23	Protein Digestion & Absorption (B-GB)	<u>Discussion/Problem Solving (G-AP)</u>	<u>Discussion/Problem Solving (G-JD)</u>

Week 9

Mon	01/26		<u>GENETICS EXAM II (9 AM) Hospital Auditorium Room HS-611</u>	
Tue	01/27	Amino Acid Metabolism I (B-GB)	Amino Acid Metabolism II (B-GB)	
Wed	01/28	Metabolism of 1-Carbon Fragments (B-GB)	<u>Inborn Errors of Metabolism I (G-BS)</u>	
Thur	01/29	Purines & Pyrimidines I (B-GB)	Problem Set (B-GB)	<u>Inborn Errors of Metabolism II (G-BS)</u>
Fri	01/30	Purines & Pyrimidines II (B-GB)	<u>Clin. Corr.: Osteogenesis Imperfecta (G-RC)</u>	

Week 10

Mon	2/02	BIOCHEMISTRY EXAM III (8-11:30 AM)		
Tue	2/03	DNA Structure (B-KS)	<u>Clin. Correlation: PKU (G-BS)</u>	
Wed	2/04	Molecular Techniques in Medicine I (B-KS)	<u>Cancer Genetics I (G-JD)</u>	
Thur	2/05	Molecular Techniques in Medicine II (B-KS)	<u>Cancer Genetics II (G-JD)</u>	<u>Discussion/Problem Solving (G-BS)</u>
Fri	2/06	DNA Replication (B-KS)	<u>Cancer Cytogenetics (G-AP)</u>	<u>Clin. Corr.: Breast Cancer (G-JD)</u>

Week 11

Mon	2/09	Telomeres and Telomerase (B-KS)	Repairing DNA Damage (B-KS)	<u>Discussion/Problem Solving (G- AP)</u>
Tue	2/10	Transcription (B-KS)	<u>Application of Gene Arrays (G-BS)</u>	
Wed	2/11	Regulation of Transcription (B-KS)	<u>Tissue-Specific Gene Expression I (G-BS)</u>	<u>Tissue-Specific Gene Expression II (G-BS)</u>
Thur	2/12	RNA Processing I (B-KS)	Review Session (B-KS)	<u>Clin. Corr.: Neurofibromatosis (G-RC)</u>
Fri	2/13	RNA Processing II (B-KS)	<u>Development & Teratogenesis (G-RC)</u>	<u>Teratogenesis Continued (G-RC)</u>

Week 12

Mon	2/16	Transcription-Processing Coupling (B-KS)	<u>Genetic Counseling (G-BK)</u>	<u>Discussion/Problem Solving (G-BS)</u>
Tue	2/17	Translation I (B-KS)	Translation II (B-KS)	
Wed	2/18	Molecular Chaperones (B-KS)	<u>Prenatal Diagnosis (G-AP)</u>	<u>Clin. Corr.: Down Syndrome (G-BK)</u>
Thur	2/19	Cellular Stress Response (B-KS)	Review Session (B-KS)	<u>Review Session (G-RC/AP/BK/JD)</u>
Fri	2/20	Diseases of Protein Misfolding (B-KS)		

Week 13

Mon	2/23		<u>GENETICS EXAM III (9 AM)</u>
Tue	2/24	Membrane and Secretory Proteins (B-KS)	Post-Translational Modifications (B-KS)
Wed	2/25	Discussion and Review (B-KS)	Reading Period
Thur	2/26		Reading Period
Fri	2/27	BIOCHEMISTRY EXAM IV (8-11:30 AM)	

KEY:
B-initials - Biochemistry segment
G-initials - Genetics segment
Regular Font - Biochemistry segment
Underlined - Genetics segment

**FACULTY
NAME****DEPARTMENT**

(GB)	Greg Barnes, MD-PhD	Biochemistry, Neurology
(KS)	Kevin Sarge, PhD	Biochemistry
(ST)	Sam Turco, PhD Course director	Biochemistry
(TV)	Tom Vanaman, PhD	Biochemistry
(RC)	Ron Cadle, MS	Pediatrics
(JD)	Jeff Davidson, PhD Course director	Microbiology & Immunology
(BK)	Bethany Kelly, MS	Pediatrics
(AP)	Anjana Pettigrew, MD	Pathology
(BS)	Brett Spear, PhD	Microbiology & Immunology, Pathology