

1. General Information

1a. Submitted by the College of: PUBLIC HEALTH

Date Submitted: 8/11/2014

1b. Department/Division: Dept Of Biostatistics

1c. Contact Person

Name: Andrea Perkins

Email: andrea.perkins@uky.edu

Phone: 218-2021

Responsible Faculty ID (if different from Contact)

Name: Sujin Kim

Email: sujinkim@uky.edu

Phone: 218-0110

1d. Requested Effective Date: Semester following approval

1e. Should this course be a UK Core Course? No

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: Yes ⁴

2b. Prefix and Number: BMI 731

2c. Full Title: Biomedical Information Retrieval

2d. Transcript Title:

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 45

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

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SENATE COUNCIL

2j. Course Description for Bulletin: This class is an introductory information retrieval class that is focused on biomedical information search engines. Basic IR concepts such as index construction, optimization, visualization, and evaluation will be covered. In addition to core IR contexts, students will have an opportunity to learn about search engines, web crawling, and some Web 2.0 technologies based on hands-on exercises and assignments with a focus on techniques that can be used to access, retrieve, organize, and present information. Students will employ an open source indexing engine (e.g., Lemur or Lucene or something similar) to understand how back-end of retrieval engine is effectively and efficiently structured.

2k. Prerequisites, if any: None

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Spring,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 100

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: No

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: Students from technology-oriented degree programs such as Library and Information Science, Computer Science, Biomedical Engineering as well as Health Science Colleges (e.g., nursing, dentistry, medicine, and pharmacy) will be interested in this basic introductory level of information retrieval in biomedicine.

8. Check the category most applicable to this course: Not Yet Found in Many (or Any) Other Universities ,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: No

If YES, name the proposed new program:

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached: Yes

Distance Learning Form

Instructor Name: Sujin Kim

Instructor Email: sujinkim@uky.edu

Internet/Web-based: Yes

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations? This course provides timely interaction between students and faculty through blackboard emailing, UK emails, blackboard announcement, and discussion boards. In addition, AdobeConnect will be used to communicate with students on a live mode. Yes, this course syllabus confirms to the UK guidelines specific to the distance learning consideration.

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc. All aspects of the class materials and instruction including textbooks, course goals, assessment of student learning outcomes will be the same if the course is offered in the classroom based setting. Offering this in an in-class setting is not expected at this time.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc. Blackboard is password protected and the instructor will make sure to handle personal student matters as cautiously as possible. Time-stamped materials will be used to make sure the integrity of the students work.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above? No

If yes, which percentage, and which program(s)? N/A

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting? The instructor will maintain both off line and online office hours on a regular basis.

6. How do course requirements ensure that students make appropriate use of learning resources? The students are instructed to read research articles, book chapters in line with the weekly lessons defined. The video clips that are carefully chosen to supplement course lecture slides will be provided for further discussions. Practical exercise driven assignments will be given to students to achieve learning goals to assess/review essential contents in biomedical information retrieval. Weekly discussions will be posted to advance learning on individual lessons scheduled and peer-discussions will foster student learning. Technology competency before and after tests will be given to compare student learnings.

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program. All the readings assigned will be available based on free access or otherwise university licensed-articles. Learning tools and databases assigned for practical exercises will be available on a publicly accessible database, otherwise university licensed product through uk library system.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)? Yes. Additional resources for resolving technical issues are stated on the syllabus, including instructions to notify the instructor immediately.

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? YES

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology. N/A

10. Does the syllabus contain all the required components? YES

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name: Sujin Kim

SIGNATURE|ALHAYS0|Andrea L Perkins|BMI 731 NEW College Review|20140319

SIGNATURE|ZNNIKO0|Roshan N Nikou|BMI 731 NEW Graduate Council Review|20140425

SIGNATURE|ZNNIKO0|Roshan N Nikou|BMI 731 NEW Graduate Council Review|20140428

SIGNATURE|ALHAYS0|Andrea L Perkins|BMI 731 ZCOURSE_NEW Approval Returned to Dept|20140820

SIGNATURE|ALHAYS0|Andrea L Perkins|BMI 731 NEW College Review|20140811

SIGNATURE|ZNNIKO0|Roshan N Nikou|BMI 731 NEW Graduate Council Review|20140926

Courses	Request Tracking
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New Course Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Open in full window to print or save

Attachments:

Browse... No file selected.

ID	Attachment
Delete 3269	BMI 731_Syllabus OnlineOnly 2-10-14 (Sujin).pdf
Delete 3543	CCIS Letters of Support.pdf

First 1 Last

Select saved project to retrieve...

(*denotes required fields)

1. General Information

- a. * Submitted by the College of: PUBLIC HEALTH Submission Date: 8/11/2014
- b. * Department/Division: Dept Of Biostatistics
- c.
- * Contact Person Name: Andrea Perkins Email: andrea.perkins@uky.edu Phone: 218-2021
- * Responsible Faculty ID (if different from Contact): Sujin Kim Email: sujinkim@uky.edu Phone: 218-0110
- d. * Requested Effective Date: * Semester following approval OR * Specific Term/Year
- e.
- Should this course be a UK Core Course? Yes No

If YES, check the areas that apply:

- Inquiry - Arts & Creativity Composition & Communications - II
- Inquiry - Humanities Quantitative Foundations
- Inquiry - Nat/Math/Phys Sci Statistical Inferential Reasoning
- Inquiry - Social Sciences U.S. Citizenship, Community, Diversity
- Composition & Communications - I Global Dynamics

2. Designation and Description of Proposed Course.

- a. * Will this course also be offered through Distance Learning? * Yes No
- b. * Prefix and Number: BMI 731
- c. * Full Title: Biomedical Information Retrieval
- d. Transcript Title (if full title is more than 40 characters):
- e. To be Cross-Listed ² with (Prefix and Number):
- f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours² for each meeting pattern type.
- | | | | |
|--------------|---------------------------|------------|------------|
| 45 Lecture | Laboratory ¹ | Recitation | Discussion |
| Indep. Study | Clinical | Colloquium | Practicum |
| Research | Residency | Seminar | Studio |
| Other | If Other, Please explain: | | |
- g. * Identify a grading system:
- * Letter (A, B, C, etc.)
- Pass/Fail
- Medicine Numeric Grade (Non-medical students will receive a letter grade)
- Graduate School Grade Scale
- h. * Number of credits: 3
- i. * Is this course repeatable for additional credit? Yes No
- If YES: Maximum number of credit hours:
- If YES: Will this course allow multiple registrations during the same semester? Yes No

j. * Course Description for Bulletin:

This class is an introductory information retrieval class that is focused on biomedical information search engines. Basic IR concepts such as index construction, optimization, visualization, and evaluation will be covered. In addition to core IR contexts, students will have an opportunity to learn about search engines, web crawling, and some Web 2.0 technologies based on hands-on exercises and assignments with a focus on techniques that can be used to access, retrieve, organize, and present information. Students will employ an open source indexing engine (e.g., Lemur or Lucene or something similar) to understand how back-end of retrieval engine is effectively and efficiently structured.

k. Prerequisites, if any:

None

I. Supplementary teaching component, if any: Community-Based Experience Service Learning Both

3. * Will this course be taught off campus? Yes * No

If YES, enter the off campus address:

4. Frequency of Course Offering.

a. * Course will be offered (check all that apply): Fall Spring Summer Winter

b. * Will the course be offered every year? * Yes No

If No, explain:

5. * Are facilities and personnel necessary for the proposed new course available? * Yes No

If No, explain:

6. * What enrollment (per section per semester) may reasonably be expected? 100

7. Anticipated Student Demand.

a. * Will this course serve students primarily within the degree program? Yes * No

b. * Will it be of interest to a significant number of students outside the degree pgm? * Yes No

If YES, explain:

Students from technology-oriented degree programs such as Library and Information Science, Computer Science, Biomedical Engineering as well as Health Science Colleges (e.g., nursing, dentistry, medicine, and pharmacy) will

8. * Check the category most applicable to this course:

- Traditional - Offered in Corresponding Departments at Universities Elsewhere
- Relatively New - Now Being Widely Established
- Not Yet Found in Many (or Any) Other Universities

9. Course Relationship to Program(s).

a. * Is this course part of a proposed new program? Yes * No

If YES, name the proposed new program:

b. * Will this course be a new requirement ^S for ANY program? Yes * No

If YES ^S, list affected programs::

10. Information to be Placed on Syllabus.

a. * Is the course 400G or 500? Yes * No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (I) identification of additional assignments by the graduate students; and/or (II) establishment of different grading criteria in the course for graduate students. (See SR 3.1.4.)

b. * The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from 10.a above) are attached.

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. **All fields are required!**

Introduction/Definition: For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The department proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at <http://www.uky.edu/USC/lev/forms.htm>).

Course Number and Prefix:	BMI 731	Date:	3/19/2014
Instructor Name:	Sujin Kim	Instructor Email:	sujin@uky.edu
Check the method below that best reflects how the majority of the course content will be delivered.			
Internet/Web-based <input checked="" type="checkbox"/>		Interactive Video <input type="checkbox"/>	Hybrid <input type="checkbox"/>

Curriculum and Instruction

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

This course provides timely interaction between students and faculty through blackboard emailing, UK emails, blackboard announcement, and discussion boards. In addition, AdobeConnect will be used to communicate with students on

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

All aspects of the class materials and instruction including textbooks, course goals, assessment of student learning outcomes will be the same if the course is offered in the classroom based setting. Offering this in an in-class

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

Blackboard is password protected and the instructor will make sure to handle personal student matters as cautiously as possible. Time-stamped materials will be used to make sure the integrity of the students work.

4. Will offering this course via DL result in at least 25% or at least 50%* (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

No

Which percentage, and which program(s)?

N/A

*As a general rule, if approval of a course for DL delivery results in 50% or more of a program being delivered through DL, the effective date of the course's DL delivery will be six months from the date of approval.

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting? The instructor will maintain both off line and online office hours on a regular basis.

Library and Learning Resources

6. How do course requirements ensure that students make appropriate use of learning resources?

The students are instructed to read research articles, book chapters in line with the weekly lessons defined. The video clips that are carefully chosen to supplement course lecture slides will be provided for further discussions.

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

All the readings assigned will be available based on free access or otherwise university licensed-articles. Learning tools and databases assigned for practical exercises will be available on a publicly accessible database, otherwise

Student Services

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

Yes.

Additional resources for resolving technical issues are stated on the syllabus, including instructions to notify the

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)?

Yes

No

If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

N/A

10. Does the syllabus contain all the required components, below? Yes

Instructor's *virtual* office hours, if any.

The technological requirements for the course.

Contact information for Distance Learning programs (<http://www.uky.edu/DistanceLearning>) and Information Technology Customer Service Center (<http://www.uky.edu/UKIT/Help/>; 859-218-HELP).

Procedure for resolving technical complaints.

Preferred method for reaching instructor, e.g. email, phone, text message.

Maximum timeframe for responding to student communications.

Language pertaining academic accommodations:

- "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Resource Center. The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommodation which details the recommended accommodations. Contact the Disability Resource Center, Jake Karnes, Director at 859-257-2754 or jkarnes@email.uky.edu."

Specific dates of face-to-face or synchronous class meetings, if any.

Information on Distance Learning Library Services (<http://www.uky.edu/Libraries/DLIS>)

- Carla Cantagallo, DL Librarian

- Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6)

- Email: dllservice@email.uky.edu

- DL Interlibrary Loan Service: http://www.uky.edu/Libraries/llbpage.php?lweb_id=253&lib_id=16

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

Sujin Kim

Abbreviations: DLP = Distance Learning Programs ATG = Academic Technology Group Customer Service Center = 859-218-HELP (<http://www.uky.edu/UKIT/Help>)

Revised 8/09

- [1] Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
- [2] The chair of the cross-listing department must sign off on the Signature Routing Log.
- [3] In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, represents at least two hours per week for a semester for one credit hour. (from SR 5.2.1)
- [4] You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
- [5] In order to change a program, a program change form must also be submitted.

Rev 8/09

Submit as New Proposal

Save Current Changes

Course Syllabus
BMI 731: Biomedical Information Retrieval
Blackboard Course
Spring 2015

Classroom and Meeting Hours:

- Online course materials posting date and time: Every Wednesday By 11:59pm, EST
 - Online class schedules via AdobeConnect: <https://connect.uky.edu/medinforet/>
 - 1st online meeting: Week 1 (3-4p, EST) → Course Q/A
 - 2nd online meeting: Week 8 (3-4p, EST) → Course Q/A
 - Attendance for online meetings is NOT required. (Note: Recordings will be provided.)
 - NO face-to-face meetings are required for this class.
-

Contact information

- Instructor: *Sujin Kim*, Ph.D./Associate Professor
Division of Biomedical Informatics, College of Public Health &
School of Information Science, College of Communication and Information
 - Office: 230G, Multidisciplinary Science Building, Speed Sort: 0082
 - Telephone: 859-218-0110
 - E-mail: sujinkim@uky.edu (*Preferred Method of Communication*)
(*Note: Maximum response timeframe to your email should be within 48 hours.*)
 - Office Hours: Tuesdays 3p-5:30p or By Appointment
-

Course description

This class is an introductory information retrieval class that is focused on biomedical information search engines. Basic IR concepts such as index construction, optimization, visualization, and evaluation will be covered. In addition to core IR contexts, students will have an opportunity to learn about search engines, web crawling, and some Web 2.0 technologies based on hands-on exercises and assignments with a focus on techniques that can be used to access, retrieve, organize, and present information. Students will employ an open source indexing engine (e.g., Lemur or Lucene or something similar) to understand how back-end of retrieval engine is effectively and efficiently structured.

Course rationale

Retrieval engines, contents, and users for accessing, organizing, and retrieving information have become indispensable in biomedicine. It is critical to understand how retrieval engine is designed to optimize performance by learning major IR concepts including content processing, index construction, retrieval models, matching algorithms, query optimization, information visualization, and performance evaluation in various retrieval environments. This class will provide students the skills to become advanced IR users. It will also enable students to make better-informed decisions for applying various biomedical applications.

Course prerequisites

None Required.

- Basic programming experience acquired in an introductory programming course or in some professional settings is recommended. Familiarity with LAMP environments such as Linux (operating system), Apache HTTP Server, MySQL (database software), and PHP, Perl or Python will be helpful to understand the course contents.
- For those who are willing to spend extra hours outside of class, you are encouraged to refer to basic programming textbooks and online materials. Instructor will also provide various online links for students' self-studies. Again, even if you are not familiar with some form of programming, as long as you are willing to put the time into developing a basic understanding of selected course topics and assignments, you will be able to learn enough to understand the course material.

Course objectives

- Provide a fundamental introduction to information retrieval that will give students basic understanding of IR search engines to advance research and practices in various biomedical disciplines.
- Provide technical skills to understand information structure and retrieval models to better apply biomedical data, information, and knowledge in their advanced learning.
- Develop critical thinking and evaluation methods for students to better apply IR skills in translating informatics skills to clinical care.

Public Health Competencies for Statistics and Informatics

- Apply basic informatics techniques with vital statistics and public health records in the description of public health characteristics and in public health research and evaluation.
- Appreciate the importance of working collaboratively with diverse communities and constituencies (e.g. researchers, practitioners, agencies and organizations).
- Discuss the influences of social, organizational and individual factors on the use of information technology by end users.
- Collaborate with communication and informatics specialists in the process of design, implementation, and evaluation of public health programs.
- Use information technology to access, evaluate, and interpret public health data.
- Use informatics methods and resources as strategic tools to promote public health.
- Use informatics and communication methods to advocate for community public health programs and policies.

College of Public Health Competency- adopted from MPH Cross-cutting competencies, 2013

- Organize and deliver effective written and verbal communications about public health activities using appropriate communication strategies to professionals, labor, industry, the general public and the media.
- Use evidence based principles and scientific knowledge effectively when involved in evaluation and decision-making in public health.

- Manage potential conflicts of interest encountered by practitioners, researchers, and organizations.
- Collaborate in interprofessional partnerships to implement organizational initiatives at the individual, organizational, and community level.
- Apply ethical principles to public health program planning, implementation and evaluation.

Student learning outcomes:

Upon completion of this course, the student will:

- be able to understand core IR concepts including collections, matching algorithms, users, and optimization,
- be able to construct IR queries that are optimized for better performance,
- be able to use open source tools to practice document processing, indexing, and retrieving.
- be able to visualize retrieved results for better access.
- be able to critically evaluate IR engines in terms of retrieval performance, and
- be able to understand emerging retrieval model on the Web 2.0 technologies.

Required Textbook and Optional Readings

- (REQUIRED) Hersh, William. (2010). Information Retrieval: A Health and Biomedical Perspective (3rd edition). Springer: New York, NY.
- (OPTIONAL) Various readings from research articles and book chapters will be assigned based on the contents being covered. Most readings will be available online for free of charge for UK students. Students must have access to a computer with Internet connection that meets the university standard.

Technology Requirements

Since this is a distance-learning course, students are required to have stable access to a computer and hence encourage students to own a personal computer (laptop/desktop is okay but tablets are not sufficient) according to these requirements:

<http://www.uky.edu/ukit/hardwareguide>

Furthermore, to fully participate in the distance learning experience students are also required to install the following software and acquire useful hardware:

<http://www.uky.edu/DistanceLearning/current/technology/techReqs.html>

Course requirements and student evaluation

Course grades will be based upon evaluation of the following activities:

(Note: Detail guidelines about the assignments and exams will be posted at least two weeks prior to due dates.)

- Midterm exam (25%) → 250 points
- Final exam (25%) → 250 points
- Assignments (40%) → 4 assignments, 100 points each, 400 points total

- Discussion and class participation (10%) → 100 points

EXAMS: Online Blackboard exam links will be available between 6a-11:59p, EST on the scheduled dates. You will be given an hour and a half to complete each exam, once you launch it.

- Midterm Exam (25%) → 250 points

The midterm contains questions about the following topics: basic IR concepts, types of health and biomedical Information, definition, theories, properties, e-Publishing, Evidence Based Medicine, major IR Contents such as bibliographic, full-text, annotated, aggregations, indexing types, factors, controlled vocabulary, manual vs. automated indexing, and retrieval and search processes, interfaces and filtering principles and biomedical digital repositories. Question types will be a mixture of multiple answers, multiple choices, short answers, true/false, and short essay questions.

- Final Exam (25%) → 250 points

The final exam contains questions about the IR evaluation, system oriented vs. user oriented IR projects, TREC project results, clinical natural language processing such as Information extraction, text mining, categorization, TREC Q/A track, and Information seeking models and health informatics literacy in relevance to IR issues. Question types will be a mixture of multiple answers, multiple choice, short answers, true/false, and short essay questions.

- Assignments (40%)→ Further detailed instruction will be provided for each assignment at least two weeks prior to due dates. The following are short descriptions of each assignment.

1) Assignment #1 (10%): Analysis of Web Search Engine → 100 points

PubMed is the world-largest bibliographic search engine by National Library of Medicine. Your job is to take online tutorials and follow the steps to complete the given questions below. Once you complete the following steps, write a one page summary of your feedback on your learning about this assignment.

- (Step 1) Find citations to articles about the ethics of liver transplantation. What are the first five PubMed IDs of the retrieved citations?
- (Step 2) Check Details to see how the terms are mapped. Copy and paste search details.
- (Step 3) Filter to review articles. How many review articles (publication types) are retrieved?(Step 4) Select a few items and add them to the Clipboard.
- (Step 5) Go to the Clipboard and view the selected items in Abstract format to see the assigned MeSH terms. What are the assigned MeSH terms for the selected items?

2) Assignment #2 (10%): MySQL with text retrieval Engine → 100 points

You will be given a structured data set to learn advance search and filtering functionality to the sample database. Login to a sample 'worldhealth.sql' database and follow the given steps to complete the MySQL exercise to learn how to administer the structured medical database for better retrieval. You need to have (1) a homepage that allows one to do a "basic search" for countries with a link to the advance search page, (2) advance search page with options to search in different fields such as country name, pandemic disease name, WHO classification codes, etc., and (3) a filtering option to let one obtain records based on a criteria such as

population and rates of morbidity and mortality. You are asked to write your learning experience about this exercise in a page summary.

3) Assignment #3 (10%): Indexing and searching unstructured texts with Lemur → 100 points

You will be given the instruction how to set up Lemur toolkit. A Lemur is a toolkit designed to facilitate research in language modeling and information retrieval (IR), where IR is broadly interpreted to include such technologies as ad hoc and distributed retrieval, with structured queries, cross-language IR, summarization, filtering, and categorization. The system's underlying architecture was built to support the technologies above. You are asked to upload the given collection of sample discharge summaries and generate indexing keywords using Lemur tool kit. In addition, you are asked to review your learning on this assignment and summarize in one page review.

4) Assignment #4 (10%): TREC → 100 points

The Text REtrieval Conference (TREC) is co-sponsored by the National Institute of Standards and Technology (NIST) and U.S. Department of Defense, was started in 1992 as part of the TIPSTER Text program. Its purpose was to support research within the information retrieval community by providing the infrastructure necessary for large-scale evaluation of text retrieval methodologies. You are given a set of TREC queries, data collection, and review answers to learn about the information retrieval evaluation. Your one page learning summary is also expected for this assignment.

- Discussion and Participation (10%) – (4 discussion topics, 25 point each, 100 points total)

Online discussion topics will be posted on the scheduled dates for students to post and reply their opinions on the given topics. The discussion rubric will be posted prior to the topics posted.

- Technology competency tests: These tests are NOT required for credit/score but it is highly recommended to take for self-assessment about your competency on health technology skills and knowledge. The Blackboard exam links will be given in the beginning (Competency A) and the end of the semester (Competency B) scheduled on the calendar.

Grade Distribution:

<i>Points</i>	<i>Letter grade</i>
1000-900	A
899-800	B
799-700	C
0-699	E

Assignment Submission:

All assignments are to be submitted via Blackboard Assignment folder. The submission drop-link along with the detailed assignment instruction will be posted at least two weeks prior to each due. If any technical error occurs, make sure to submit a copy of your assignment via email at sujinkim@uky.edu

Instructor expectations

1. I expect you to attend or watch online every class session. This is primarily a class for us to learn through reading, presentations, hands-on demonstrations and classroom/chat room discussion.
2. I expect you to read and critically evaluate all assigned material prior to attending or viewing the lectures.
3. I expect (and encourage) you to provide honest and timely feedback regarding the content and process of this course throughout the semester.
4. I expect you during the semester to interactively engage via the online discussion board with the other students and the instructor.
5. I expect you to share in the responsibility for making this course an enjoyable and beneficial learning experience.

Special Notes:

The challenge related to teaching and taking a course on-line is not trivial. In particular, it requires that you make serious effort to keep up with readings and work, take advantage of the communication mechanisms and other tools built into the Blackboard courseware, and continually assess yourself to ensure that you have a grasp of the subject matter. It is particularly important to log onto the course often in order to keep up with the topics being discussed.

Academic honesty

Academic honesty is highly valued at the University. You must always submit work that represents your original words or ideas. If any words or ideas used in a class assignment submission do not represent your original words or ideas, you must cite all relevant sources and make clear the extent to which such sources were used. Words or ideas that require citation include, but are not limited to, all hard copy or electronic publications, whether copyrighted or not, and all verbal or visual communication when the content of such communication clearly originates from an identifiable sources. Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university, may be imposed. All incidents of cheating and plagiarism are taken very seriously at the University of Kentucky, and there are specific policies and procedures in place to prosecute them. See [S.R. 6.3.0 \(PDF\)](#) for the exact Senate Rules regarding academic offenses.

Statement on Plagiarism

The faculty of the Division of Biomedical Information and the College of Public Health will enforce and administer rules concerning plagiarism as set forth in *Student's Rights and Responsibilities*.

"Plagiarism means taking the words and thoughts of others (their ideas, concepts, images, sentences, and so forth) and using them as if they were your own, without crediting the author or citing the source. Most plagiarism is willful, a sort of theft. It is possible to plagiarize unintentionally, though, by being careless or hurried, omitting quotation marks or slipping into the words or ideas of others through inattention or simply for convenience. Whether you meant it or not, you can be found guilty of plagiarism whenever other people's language gets used without proper citation in your text. At this and most other universities, plagiarism is regarded as intellectual theft; faculty will rarely bother to determine whether you stole words on purpose or walked out of the shop having forgotten to pay." <http://www.uky.edu/Ombud/Plagiarism.pdf>

"This is how the faculty and students at UK have defined plagiarism (from Senate Rule

6.3.1):

All academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research or self-expression...

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work, whether it be published article, chapter of a book, a paper from a friend or some file, or whatever. Plagiarism also includes the practice of employing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain."

Accommodations

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, submit to me a Letter of Accommodation from the Disability Resource Center. If you have not already done so, please register with the Disability Resource Center for coordination of campus disability services available to students with disabilities. Contact Jake Karnes via email at jkarnes@email.uky.edu or by telephone 859-257-2754. You may also visit the DRC website for information on how to register for services as a student with a disability: <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>

Religious Observances

Students will be given the opportunity to make up work (typically, exams or assignments) when students notify their instructor that religious observances prevent the student from completing assignments according to deadlines stated in this syllabus. Students must notify the course instructor at least two weeks prior to such an absence and propose how to make up the missed academic work.

Inclement weather

The University of Kentucky has a detailed policy for decisions to close in inclement weather. This policy is described in detail at http://www.uky.edu/PR/News/severe_weather.htm or you can call (859) 257-1754.

Late work policy:

Assignments that are turned in late will be marked one letter grade lower unless prior approval from the instructor has been obtained. It will be based on the time stamp provided by Blackboard. (NOTE: Assignments more than one week past the original due date will not be graded.)

Excused absences policy

Attendance, excused absences and make-up opportunities for this course will conform to the course policies established by the Office of Academic Ombud Services as found at www.uky.edu/Ombud/policies.php

Other University Resources

The UK Violence Intervention and Prevention (VIP) Center provides advocacy services to women survivors of violence in the UK community. The VIP Center can provide assistance in accessing and navigating services, resources and referrals both on and off campus. Services include: academic advocacy, medical advocacy, counseling, financial advocacy, referral advocacy, and other practical needs that a student may request. 106 Frazee Hall, 257-3574 or 257-3564. <http://www.uky.edu/StudentAffairs/VIPCenter/index.html#>

Technical Requirements (Adopted from Distance Learning Recommendation):

"In order to have a successful educational experience in distance learning courses, there are minimum technology requirements that should be met. The University of Kentucky strongly recommends that each student purchase a personal computer. To review minimum recommendations and guidelines for your computer click here.

University of Kentucky distance learning students are also encouraged to acquire the following hardware, software, and Internet connection to ensure that all systems used by distance learning courses will function properly."

Go to the link at: <http://www.uky.edu/DistanceLearning/current/technology/techReqs.html> to test your network speed and other necessarily technology requirements for this class.

Information on Distance Learning Library Services

- Available at: <http://libraries.uky.edu/dlls>
- Carla Cantagallo, DL Librarian, (859) 218-1240
- Email: dllservice@email.uky.edu
- DL Interlibrary Loan Service: http://libraries.uky.edu/page.php?lweb_id=253

Information on UK Medical Center Libraries-(MCL) and Blackboard

- MCL Homepage: <http://libraries.uky.edu/MCL>
- MCL Classes: http://libraries.uky.edu/libpage.php?lweb_id=33&lib_id=12
- Off-Campus Access Instructions (Proxy Help): http://libraries.uky.edu/page.php?lweb_id=16
- Blackboard Wiki: <http://wiki.uky.edu/blackboard/Wiki%20Pages/Home.aspx>
- Blackboard Blog: <http://blog.uky.edu/Blackboard/default.aspx>

Contact information for:

- TASC <http://www.uky.edu/ukit/atg/tasc>
- Information Technology Customer Service Center <http://www.uky.edu/ukit/>

Technical Issues

- Students should contact the instructor (via email) and the UKIT help desk in case they are unable to access the materials (<http://www.uky.edu/UKIT>, 859-218-HELP) so that issues can be resolved in a timely fashion and homework can be submitted on time.

COURSE SCHEDULE

- Posting dates for course materials: Every Wednesdays by 11:59p, EST.
- Midterm and final exams will be Blackboard online exams which will be open between 6a till 11:59p on the designated dates below.
- All assignments should be submitted into Blackboard assignment folder by each assigned due date (normally Wednesdays 11:59p, EST).
- Supplementary readings and video clips will be posted in the Blackboard course readings folder, as needed.

Week	Topic	Readings	Assignment Dues
0	-Course logistics -Blackboard Features		<ul style="list-style-type: none"> • Course syllabus and Blackboard course homepage should be fully understood!
1	Online Class Meeting #1	AdobeConnect: https://connect.uky.edu/medinfoet/	Course Q/A
2	(Lesson 1) Basic IR Concepts -IR Terms, Models, Resources, Evaluation	Textbook, Chapter 1	<ul style="list-style-type: none"> • Student Contract • Introduction to Yourself • Technology Competency A
3	(Lesson 2) Health and Biomedical Information -Definition, Theories, Properties, e-Publishing, EBM	Textbook, Chapter 2	
4	(Lesson 3) IR Contents -Bibliographic, Full text, Annotated, Aggregations	Textbook, Chapter 3	<ul style="list-style-type: none"> • Assignment #1: Analysis of Web Search Engine
5	(Lesson 4) Indexing -Types, Factors, Controlled Vocabulary, Manual vs. Automated	Textbook, Chapter 4	<ul style="list-style-type: none"> • Discussion #1
6	(Lesson 5) Retrieval -Search process, Principles, Interfaces, Filtering	Textbook, Chapter 5	<ul style="list-style-type: none"> • Assignment #2: My SQL with text retrieval
7	(Lesson 6) Biomedical Digital Repositories -Definition, Content, Intellectual Property, Preservation	Textbook, Chapter 6	<ul style="list-style-type: none"> • Discussion #2
8	Online Class Meeting #2	AdobeConnect: https://connect.uky.edu/medinfoet/	Course Q/A
9	(Lesson 7) IR Evaluation – Research Directions	Textbook, Chapter 7	<ul style="list-style-type: none"> • Assignment #3: Lucene or Lemur
10	Midterm Exam	Lessons 1-6	6A – 11:59P, EST
11	Spring Break –	No Class	

	Academic Holiday		
12	(Lesson 8) Systems and User Research -System oriented vs. User oriented, TREC Projects	Textbook, Chapter 8	• Discussion #3
13	(Lesson 9) Clinical Natural Language Processing -Information Extraction, Text Mining, Categorization, TREC Q/A track	Textbook, Chapter 9	• Discussion #4
14	(Lesson 10) Health Information Seeking Behaviors -Information Seeking Models -Health Information Literacy		• Assignment #4: TREC
15	REVIEW WEEK – NO CLASS		Technology Competency B
16	Final Exam	Lessons 7-10	6A – 11:59PM, EST



Center for Clinical and
Translational Science (CCTS)

Center for Clinical and
Translational Science
UK Chandler Medical Center
Pavilion H
800 Rose Street, Room C300
Lexington, KY 40536-0293
www.cts.uky.edu

May 29, 2014

Stephen W. Wyatt, DMD, MPH
Dean
College of Public Health
111 Washington Avenue, Room 112
CAMPUS 0003

Dear Dean Wyatt:

The NIH CTSA program places great value on biomedical informatics research and training programs. For CTSA's, from a training perspective, informatics, bioinformatics and clinical/informatics content and courses for professional and academic doctoral, as well as professional and academic masters students are major priorities. Every aspect of the health sciences, from basic research, to clinical care to community based outcomes studies, will continue to be dependent on the analysis of data and the translation of data into information, and thus it is critically important that we train the next generation of clinicians and researchers in informatics. The UK Center for Clinical and Translational Science (CCTS), as part of the NIH CTSA network, has been building courses for students on our campus. The proposed courses are part of the CCTS plan to build toward an academic degree offering in biomedical informatics. In addition, the courses will also be available to professional doctoral students in Medicine and Pharmacy, and will be available for inclusion in certificate programs on our campus. These courses have potential beyond our campus; Medical schools at Marshall University, East Tennessee State University and the University of Pikeville are exploring arrangements to access these courses for their students.

As the CCTS prepares for its next grant submission in 2015-2016, these courses are an important and strategic priority.

Sincerely,

A handwritten signature in black ink, appearing to read 'Phillip A. Kern'.

Phillip A. Kern, M.D.
Professor of Medicine, Division of Endocrinology
Director, Center for Clinical and Translational Sciences
Associate Provost for Clinical and Translational Science
Director, Barnstable Brown Diabetes and Obesity Center



June 6, 2014

Stephen W. Wyatt, DMD, MPH
Dean
College of Public Health
111 Washington Avenue, Room 112
CAMPUS 0003

Dear Dean Wyatt:

As you know, the PhD program in Epidemiology and Biostatistics is intended to be an integrative doctoral program which prepares future researchers who will have substantial quantitative preparation in the unique domains of these two disciplines. The essentially strong cross-training and mentoring nature of the program is intended to develop independent researchers skilled in designing and conducting studies, as well as analyzing and interpreting the results from an increasing variety of study designs.

As the current Chair of Academic Affairs, I recently reviewed the large complement of courses in bioinformatics, clinical informatics, information retrieval, and natural language processes that have been developed by our faculty in the Division of Bioinformatics. Many of these courses may be suitable electives for our doctoral students. As you are aware, there has been an intense demand for scientifically trained (subject matter) data analysts who can address the issues in conducting studies which include large amounts of complex data.

For epidemiologists and biostatisticians working in human genome epidemiology, statistical genetics, and related disciplines, the field will require a better understanding of the management and retrieval of information from these large datasets. Training in biomedical informatics will be appealing to some of our PhD students in Epidemiology and Biostatistics and will be encouraged by many of our program faculty.

Sincerely,

A handwritten signature in black ink that reads "STEVE BROWNING". The signature is written in a cursive style with a horizontal line underneath the name.

Steven R. Browning, PhD
Associate Professor, Director of Graduate Studies for the PhD
Department of Epidemiology
111 Washington Ave, Suite 209B
Lexington, Kentucky 40536-0003
(859) 218-2235
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June 6, 2014

Stephen W. Wyatt, DMD, MPH
Dean
College of Public Health
111 Washington Avenue, Room 112
CAMPUS 0003

Dear Dean Wyatt:

I am writing to offer my enthusiastic support for the new biomedical informatics courses that are being proposed to the Graduate Council. As you know, the Master of Science program in Clinical Research Design is intended to prepare practicing health care professionals and students pursuing a terminal degree (MD, PharmD, etc.) to conduct population based research. The program is targeted to students who wish to enhance their translational research skills and increase their knowledge of population-based health and clinical trials. MDs interested in an academic appointment will find that this degree program will make them competitive for the best positions, where research skills are becoming the norm. Of particular demand for medical researchers are effective uses of biomedical data, information, and knowledge for scientific inquiry, problem solving and decision-making motivated by efforts to improve human health.

Our MS program is designed to accommodate graduates of the Certificate in Clinical Research Skills offered in conjunction with the Center for Clinical and Translational Sciences, which strongly emphasizes and relies on biomedical informatics. The addition of these courses to the list of electives that Clinical Research Design students can choose will be extremely attractive to current students, and may perhaps entice prospective students to pursue the Graduate Certificate or degree program. The faculty proposing and teaching these courses are great partners in education and research and I look forward to strengthening existing ties through implementation of these courses. For these reasons, as Director of Graduate Studies for the MS program in Clinical Research Design, I fully support these new course proposals.

Sincerely,

David M. Mannino, M.D.
Professor and Chair
Department of Preventive Medicine and Environmental Health
Director of Graduate Studies, Masters of Science in Clinical Research Design
University of Kentucky College of Public Health

Department of Pulmonary, Critical Care, and Sleep Medicine
University of Kentucky College of Medicine

Perkins, Andrea L

To: Miroslaw Truszczyński
Subject: RE: Support for BMI courses

From: mirektruszczyński@gmail.com [<mailto:mirektruszczyński@gmail.com>] **On Behalf Of** Miroslaw Truszczyński
Sent: Wednesday, July 16, 2014 9:46 AM
To: Perkins, Andrea L
Cc: Nagarajan, Radha; KIM, SUJIN; Wray, Johanna (JoJo)
Subject: Re: Support for BMI courses

I reviewed the proposals for the new biomedical courses BMI 633, 730-735. I find them useful to candidates for the Informatics Certificate, pursued typically by 2-4 students per year.

I support their approval.

Mirek Truszczyński
Director, Informatics Certificate