

RECEIVED

APR 13 2016

Course Information

Date Submitted: 6/17/2015

Current Prefix and Number: HON - University Honors Program , HON 152 HONORS IN NATL, PHYS, AND MATH SCI:
SUBT

Other Course:

Proposed Prefix and Number: HON 152

What type of change is being proposed?

Major Change

Should this course be a UK Core Course? Yes

Inquiry - Nat/Math/Phys Sci

1. General Information

a. Submitted by the College of: UNDERGRADUATE EDUCATION

b. Department/Division: Honors Program

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: Meg Marquis

Email: memarq0@email.uky.edu

Phone: 257-3619

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

f. Requested Effective Date

Semester Following Approval: Yes OR Effective Semester:

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: N/A

b. Full Title: HONORS IN NATURAL, PHYSICAL, AND MATHEMATICAL SCIENCES: SUBTITLE REQUIRED

Proposed Title: HONORS IN NATURAL, PHYSICAL, AND MATHEMATICAL SCIENCES: SUBTITLE REQUIRED

c. Current Transcript Title: HONORS IN NATL, PHYS, AND MATH SCI: SUBT

Proposed Transcript Title:

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

Proposed Meeting Patterns

SEMINAR: 3

f. Current Grading System: ABC Letter Grade Scale

Proposed Grading System: *Letter (A, B, C, etc.)*

g. Current number of credit hours: 3

Proposed number of credit hours: 3

h. Currently, is this course repeatable for additional credit? No

Proposed to be repeatable for additional credit? Yes

If Yes: Maximum number of credit hours: 6

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

2i. **Current Course Description for Bulletin:** A hands-on, science course for Honors student in which they ask a question requiring scientific analysis, develop a related experimentation regimen, collect data, do the experimentation, analyze the results, draw conclusions and appropriately disseminate the results. Students will directly experience the scientific process to learn how scientists work.

Proposed Course Description for Bulletin: A hands-on, science course for Honors student in which they ask a question requiring scientific analysis, develop a related experimentation regimen, collect data, do the experimentation, analyze the results, draw conclusions and appropriately disseminate the results. Students will directly experience the scientific process to learn how scientists work.

2j. **Current Prerequisites, if any:** Prereq: Membership in Honors

Proposed Prerequisites, if any: Prereq: Membership in Honors

2k. **Current Supplementary Teaching Component:**

Proposed Supplementary Teaching Component:

3. Currently, is this course taught off campus? No

Proposed to be taught off campus? No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed? No

If YES, explain and offer brief rationale:

5a. Are there other depts. and/or pgms that could be affected by the proposed change? No

If YES, identify the depts. and/or pgms:

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

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?

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.

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.

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?

If yes, which percentage, and which program(s)?

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?

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

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

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/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

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.

10. Does the syllabus contain all the required components? NO

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

Instructor Name:

SIGNATURE|BCWITH2|Benjamin C Withers|HON 152 CHANGE College Review|20150908

SIGNATURE|JMETT2|Joanie Ett-Mims|HON 152 CHANGE UKCEC Review|20160413

SIGNATURE|JMETT2|Joanie Ett-Mims|HON 152 CHANGE Undergrad Council Review|20160413

SIGNATURE|RJADAMS|Robert J Adams|HON 152 CHANGE UKCEC Expert Review|20160413

Course Change Form

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

[Open in full window to print or save](#)

Generate R

Attachments:

[Browse...](#)

Upload File

	ID	Attachment
Delete	6676	HON 152 004 Duncan Marilyn FINAL.docx
Delete	6677	HON 152 Wilson syllabus (revised 4-13-16).docx
Delete	6678	UKCEC memo to SC - HON 152.pdf

First 1 Last

NOTE: Start form entry by choosing the Current Prefix and Number
(*denotes required fields)

Current Prefix and Number:		HON - University Honors Program HON 152 HONORS IN NATL, PHYS, AND MATH SCI: SUBT	Proposed Prefix & Number: (example: PHY 401G) <input checked="" type="checkbox"/> Check if same as current	HON 152
* What type of change is being proposed?		<input checked="" type="checkbox"/> Major Change <input type="checkbox"/> Major - Add Distance Learning <input type="checkbox"/> Minor - change in number within the same hundred series, exc 799 is the same "hundred series" <input type="checkbox"/> Minor - editorial change in course title or description which doe change in content or emphasis <input type="checkbox"/> Minor - a change in prerequisite(s) which does not imply a cha course content or emphasis, or which is made necessary by the e or significant alteration of the prerequisite(s) <input type="checkbox"/> Minor - a cross listing of a course as described above		
Should this course be a UK Core Course? <input checked="" type="radio"/> Yes <input type="radio"/> No				
If YES, check the areas that apply:				
<input type="checkbox"/> Inquiry - Arts & Creativity <input type="checkbox"/> Composition & Communications - II <input type="checkbox"/> Inquiry - Humanities <input type="checkbox"/> Quantitative Foundations <input checked="" type="checkbox"/> Inquiry - Nat/Math/Phys Sci <input type="checkbox"/> Statistical Inferential Reasoning <input type="checkbox"/> Inquiry - Social Sciences <input type="checkbox"/> U.S. Citizenship, Community, Diversity <input type="checkbox"/> Composition & Communications - I <input type="checkbox"/> Global Dynamics				
1. General Information				
a. Submitted by the College of:		UNDERGRADUATE EDUCATION		Submission Date: 6/17/2015
b. Department/Division:		Honors Program		
c.* Is there a change in "ownership" of the course?				
<input type="radio"/> Yes <input checked="" type="radio"/> No If YES, what college/department will offer the course instead? Select...				
e.* Contact Person Name:		Meg Marquis		Email: memarq0@email.uky.edu Phone: 257-3619
e.* Responsible Faculty ID (if different from Contact)				Email: Phone:
f.* Requested Effective Date:		<input checked="" type="checkbox"/> Semester Following Approval		OR Specific Term: ²
2. Designation and Description of Proposed Course.				
a. Current Distance Learning(DL) Status:		<input checked="" type="radio"/> N/A <input type="radio"/> Already approved for DL* <input type="radio"/> Please Add <input type="radio"/> Please Drop		
*if already approved for DL, the Distance Learning Form must also be submitted <u>unless</u> the department affirms (by checking this box) that the proposed chang affect DL delivery.				
b. Full Title:		HONORS IN NATURAL, PHYSICAL, AND MATHEMATICAL SCIENCES: SUBTITLE REQUIRED		Proposed Title: * HONORS IN NATURAL, PHYSICA AND MATHEMATICAL SCIENCES: SUBTITLE REQUIRED
c. Current Transcript Title (if full title is more than 40 characters):		HONORS IN NATL, PHYS, AND MATH SCI: SUBT		
c. Proposed Transcript Title (if full title is more than 40 characters):				

d.	Current Cross-listing: <input type="checkbox"/> N/A	OR	Currently ² Cross-listed with (Prefix & Number):	none	
	Proposed – ADD ³ Cross-listing (Prefix & Number):				
	Proposed – REMOVE ^{3,2} Cross-listing (Prefix & Number):				
e.	Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours ⁵ for each meeting pattern				
Current:	Lecture	Laboratory ⁵	Recitation	Discussion	Indep. Stud
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other	Please explain:	
Proposed: *	Lecture	Laboratory ⁵	Recitation	Discussion	Indep. Stud
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other	Please explain:	
	3				
f.	Current Grading System:	ABC Letter Grade Scale			
	Proposed Grading System:*	<input checked="" type="radio"/> Letter (A, B, C, etc.) <input type="radio"/> Pass/Fail <input type="radio"/> Medicine Numeric Grade (Non-medical students will receive a letter grade) <input type="radio"/> Graduate School Grade Scale			
g.	Current number of credit hours:	3	Proposed number of credit hours:*	3	
h.*	Currently, is this course repeatable for additional credit?				<input type="radio"/> Yes <input checked="" type="radio"/> No
*	Proposed to be repeatable for additional credit?				<input checked="" type="radio"/> Yes <input type="radio"/> No
	If YES:	Maximum number of credit hours:	6		
	If YES:	Will this course allow multiple registrations during the same semester?			<input checked="" type="radio"/> Yes <input type="radio"/> No
i.	Current Course Description for Bulletin:				
	A hands-on, science course for Honors student in which they ask a question requiring scientific analysis, develop a related experimentation regimen, collect data, do the experimentation, analyze the results, draw conclusions and appropriately disseminate the results. Students will directly experience the scientific process to learn how scientists work.				
*	Proposed Course Description for Bulletin:				
	A hands-on, science course for Honors student in which they ask a question requiring scientific analysis, develop a related experimentation regimen, collect data, do the experimentation, analyze the results, draw conclusions and appropriately disseminate the results. Students will directly experience the scientific process to learn how scientists work.				
j.	Current Prerequisites, if any:				
	Prereq: Membership in Honors				
*	Proposed Prerequisites, if any:				
	Prereq: Membership in Honors				
k.	Current Supplementary Teaching Component, if any:				<input type="radio"/> Community-Based Experience

	<input type="radio"/> Service Learning <input type="radio"/> Both	
Proposed Supplementary Teaching Component:	<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both <input type="radio"/> No Change	
3. Currently, is this course taught off campus?	<input type="radio"/> Yes <input type="radio"/> No	
* Proposed to be taught off campus?	<input type="radio"/> Yes <input type="radio"/> No	
If YES, enter the off campus address:		
4.* Are significant changes in content/student learning outcomes of the course being proposed?	<input type="radio"/> Yes <input type="radio"/> No	
If YES, explain and offer brief rationale:		
5. Course Relationship to Program(s).		
a.* Are there other depts and/or pgms that could be affected by the proposed change?	<input type="radio"/> Yes <input type="radio"/> No	
If YES, identify the depts. and/or pgms:		
b.* Will modifying this course result in a new requirement ² for ANY program?	<input type="radio"/> Yes <input type="radio"/> No	
If YES ² , list the program(s) here:		
6. Information to be Placed on Syllabus.		
a.	<input type="checkbox"/>	Check box if <u>changed to 400G or 500.</u> If <u>changed to 400G- or 500-level</u> course you must send in a syllabus and you <i>must include the differentiation</i> between undergraduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading course for graduate students. (See SR 3.1.4.)

¹See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair.* If Chair deems the change as "not minor," the form will appropriate academic Council for normal processing and contact person is informed.

²Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

³Signature of the chair of the cross-listing department is required on the Signature Routing Log.

⁴Removing a cross-listing does not drop the other course – it merely unlinks the two courses.

⁵Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting gene least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

⁶You must also submit the Distance Learning Form in order for the course to be considered for DL delivery.

⁷In order to change a program, a program change form must also be submitted.

Student Learning Outcomes:

This course satisfies the Intellectual Inquiry in the Natural/Physical/Mathematical Sciences requirement in UK Core. Thus, by the end of the course, students will be able to:

1. Describe methods of inquiry that lead to scientific knowledge based on evidence.
2. Explain fundamental principles in a branch of science.
3. Apply fundamental principles to interpret and make predictions in a branch of science.
4. Demonstrate an understanding of at least one scientific discovery that changed the way scientists understand the world.
5. Give examples of how science interacts with society.
6. Conduct a hands-on project using scientific methods to include design, data collection, analysis, summary of the results, conclusions, alternative approaches, and future studies.
7. Recognize when information is needed and demonstrate the ability to find, evaluate and use effectively sources of scientific information

Course Objectives: The overall objective is to understand the properties underlying circadian rhythms and the influence of these rhythms on behavior, health and performance. At the end of the course you will be able to:

1. Understand the fundamental concepts of circadian rhythms
2. Explain the how light and other factors regulate circadian rhythms
3. Recognize the reciprocal interactions between circadian rhythms and lifestyle
4. Appreciate the role of circadian rhythms in regulating performance, and cognition.
5. Understand the importance of circadian rhythms in health
6. Gain confidence in presenting defending ideas based on scientific findings

Recommended Materials:

Rhythms of Life: The Biological Clocks That Control The Daily Lives of Every Living Thing, by Russell G. Foster and Leon Kreitzman, Yale University Press, 2005. Available in Kennedy Book Store, 405 S. Limestone St.

Several chapters of this book will be used, and will be provided electronically on the class website.

Research articles: *(This is a preliminary list, subject to change. Additional articles will be assigned later. All articles will be available electronically on the course website).*

1. Acer-Childs E. and Brandstaetter R. (2015) The impact of circadian phenotype and time since awakening on diurnal performance in athletes. Current Biology 25:518-522.
2. Wright et al (2013) Entrainment of the human circadian clock to the natural light-dark cycle. Current Biology 23:1554-1558.
3. Chang A-M. et al (2015) Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness. Proc. Natl. Acad. Sci. 112:1232-1237.
4. Buxton et al (2003) Exercise elicits phase shifts and acute alterations of melatonin that vary with circadian phase. American Journal of Physiology. Regulatory, Integrative, and Comparative Physiology 284:R714-724.
5. Gill S. and Panda S. (2015) A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. Cell Metabolism 22:1-10.
6. Wright et al (2006) Sleep and wakefulness out of phase with internal biological time impairs learning in humans. Journal of Cognitive Neuroscience 18:508-521.
7. Cho K. (2001) Chronic 'jet lag' produces temporal lobe atrophy and spatial cognitive deficits. Nature Neuroscience 4:567-568.

Honors Program Pledge of Excellence: *As a member of the University of Kentucky Honors Program, I dedicate myself to intellectual inquiry, life-long learning, and critical thinking. I pledge to demonstrate personal and academic integrity both in and outside of the classroom. I pledge to always be willing to engage my peers in earnest and respectful discussion with an open mind.*

Description of course activities, assignments, and grading

Activities: In-class activities will occur throughout the semester. These may include individual worksheets or surveys, or problem solving exercises in small groups.

Assignments:

Scientific project: Students will conduct a semester-long class project designed to investigate factors regulating circadian rhythms and how their effects can be determined. This project will include hypothesis testing, principles of experimental design, data analysis and interpretation.

TED talks: In class TED talks, such as power-point talk, will be presented by pairs of students. Guidelines for TED talks will be reviewed in class and posted on the website. Choice of presentation #, as shown on the Class schedule, must be selected by Jan. 20 and submitted to the course instructor by email. Presentation numbers will be assigned on a first come, first served basis. (Students are encourage to meet with a course instructor during the process of preparing the TED talk). The ppt file must be submitted electronically 24 hours prior to presentation). As well as presenting TED talks, students are required to submit written critiques of all of the TED talks presented by other students. Each critique should consist of a ~1-page synopsis and evaluation of the presentation. All critiques are due on at 5 PM of the next class day after the TED talk.

Current event presentation: Each student will also make an informal presentation of a "current event." The current event presentation will be a brief discussion (~3-7 minutes) of an item read in a magazine or newspaper or heard on the radio or TV that concerns circadian rhythms. Each student will chose an item and send an email message, briefly describing the current event, to the course instructor by midnight before the class session for which the presentation is planned.

Journal assignments: For each reading assignment of a research article (not textbook chapters), a written entry must be made in an on-line journal. This entry should include a brief summary of the main points in the article, and some personal comments or questions. The journal entry for each article should be approximately one page long.

Grading:

In class activities including scientific project	10%
TED talk	10%
Critiques of TED talks	20%
Current event presentation	5%
Journal entries before mid-term	7.5%
Journal entries after mid-term	7.5%
Exam I	20%

The following traditional grading system will be used:

A = 90 – 100%; B = 80 – 89; C = 70 – 79; D = 60 – 69; E = < 60

Final grades may be scaled up depending on the overall distribution of scores, but in no cases will grades be lower than this scale.

Other:

University and Departmental Policies

Submission of Assignments: Assignments will be submitted to the course website, by midnight of the assignment date. Late assignments will receive only partial credit.

Attendance Policy: Attendance is required as part of the class grade is based on in-class participation and presentations.

Class conduct: Professional and polite behavior is expected at all times. Full attention to class activities, without the distraction of cell phones or texting, is required. Discussions may include a variety of viewpoints and opinions; all of these should be considered with respect. Repeated offenses could result in loss of points and/or a lower letter grade.

Excused Absences:

Students need to notify the professor of absences prior to class when possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

Verification of Absences:

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request "appropriate verification" when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Accommodation Due to Disability: 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, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at drc@uky.edu. Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.

Academic Integrity: You are expected to adhere to the university's policy on academic integrity. Fabrication, plagiarism, cheating and other violations of the code will not be tolerated in this course. When you are using other people's ideas to make a point, you must give the source credit through proper attribution. Merely cutting and pasting Web site information into your assignment without attribution is wrong and a resulting charge of plagiarism can result in a failing final grade for the course.

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.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Senate Rules 6.3.1 (see <http://www.uky.edu/Faculty/Senate/> for the current set of *Senate Rules*) states that 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. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

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

Plagiarism includes reproducing someone else's work (including, but not limited to a published article, a book, a website, computer code, or a paper from a friend) without clear attribution. Plagiarism also includes the practice of employing or allowing 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.

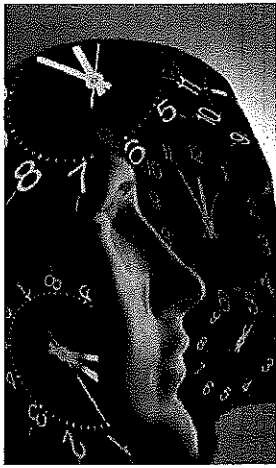
Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Course Calendar (Subject to change; readings will be added during semester)

Wk	Dates	Topic	Instructor
1	Thurs. Jan. 14	Introduction to the course and to biological rhythms Foster – Chapters 1-2	Duncan
2	Tues. Jan. 19	Principles of Science What is evidence-based science? How can we evaluate information that appears on the web? What is ethical research using animal or human subjects?	Delisle
2	Thurs. Jan. 21	Basic properties and adaptive functions of circadian rhythms What are circadian rhythms and how are they useful? Foster – Chapters 3- 4	Duncan
3	Tues. Jan. 26	Basic properties of sleep How is sleep regulated and how does sleep alter brain and bodily function? Foster – Chapter 11, pp. 177-192 Chronotypes (morning larks versus night owls) Facer-Childs and Brandstaetter (2015) – Impact of circadian phenotype and time since awakening on diurnal performance in athletes	Duncan
3	Thurs. Jan. 28	Regulation of circadian rhythms by light – entrainment and masking <i>How are circadian rhythms synchronized to the outside world?</i> Foster – Chapter 6, pp. 82-89	Duncan
4	Tues. Feb. 2	Regulation of circadian rhythms by light (continued) Wright et al (2013) Human entrainment to a natural light-dark cycle	Duncan
4	Thurs. Feb.4	Circadian rhythms, sleep, and performance Chang et al (2015) – Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness	Duncan
5	Tues. Feb. 9	Regulation of circadian rhythms by nonphotic signals What kinds of timing signals besides light influence circadian rhythms? <i>TED talk 1: properties of circadian rhythms and effects of light</i>	Duncan
5	Thurs. Feb. 11	Regulation of circadian rhythms by nonphotic signals (continued) Buxton et al (2003) Exercise elicits phase shifts in humans	Duncan
6	Tues. Feb. 16	Master circadian clock in the brain How does a small brain region coordinate circadian rhythms throughout the body? Foster – Chapters 5, 7, and Chapter 10, pp. 172-176 <i>TED talk 2: regulation of circadian rhythms by nonphotic signals</i>	Duncan
6	Thurs. Feb. 18	Circadian clocks throughout the body Where are circadian clocks located, and what do they do?	Delisle
7	Tues. Feb. 23	Circadian rhythms in metabolism What is metabolism? How do circadian rhythms influence our metabolism and metabolic disease? <i>TED talk 3: Master circadian in the brain</i>	Delisle

7	Thurs. Feb. 25	Circadian rhythms in metabolism, continued	Delisle
8	Tues. Mar. 1	Catch-up/Review <i>TED talk 4: Circadian clocks throughout the body</i>	Duncan
8	Thurs. Mar. 3	Exam 1	Duncan
9	Tues. Mar. 8	Muscle circadian clocks What makes muscles move? Why do strong muscles depend on robust circadian clocks?	Delisle
9	Thurs. Mar. 10	Muscle circadian clocks, continued	Delisle
10	Mar. 15, Mar. 17	SPRING BREAK	
11	Tues. Mar. 22	Circadian rhythms in cardiovascular function What is the cardiovascular system? How do circadian clocks regulate heartbeat and blood pressure? <i>TED talk 5: Circadian rhythms in metabolism</i>	Delisle
11	Thurs. Mar. 24	Circadian rhythms in cardiovascular function, continued	Delisle
12	Tues. Mar. 29	Circadian rhythms in cardiovascular disease, continued How does the circadian clock confer an advantage to the home team? <i>TED talk 6: Circadian rhythms in muscle</i>	Delisle
12	Thurs. Mar. 31	Circadian rhythms and fitness/athletic performance How does the circadian clock confer an advantage to the home team?	Delisle
13	Tues. April 5	Circadian regulation of learning and memory What happens to cognition when circadian rhythms are disrupted? Wright et al (2006) Sleep and wakefulness out of phase with internal biological time impairs learning in humans <i>TED talk 7: Circadian rhythms in cardiovascular function</i>	Duncan
13	Thurs. April 7	Circadian regulation of learning and memory, continued	Duncan
14	Tues. April 12	Shiftwork, jet lag, and health How does shift work or jet lag affect health and how can these challenges be managed? Cho (2001) Chronic 'jet lag' produces temporal lobe atrophy and spatial cognitive deficits <i>TED talk 8: Circadian rhythms in fitness</i>	Duncan
14	Thurs. April 14	Shiftwork, jet lag, and health, continued	Duncan
15	Tues. April 19	Open Topic: Chronic light pollution How does ubiquitous lighting affect circadian rhythms and health?	Delisle

		<i>TED talk 9: Circadian rhythms in learning and memory</i>	
15	Thurs. April 21	Open Topic: (Seasonality, melatonin, and seasonal affective disorder)	Delisle
16	Tues. April 26	<p>Open Topic: (Time-restricted feeding, or another topic to be determined)</p> <p>Gill and Panda (2015) A smartphone App reveals erratic diurnal eating patterns in humans that can be modulated for health benefits</p> <p><i>TED talk 10: Circadian rhythms in shiftwork, jet lag, and health</i></p>	Duncan
16	Thurs. April 28	Review	Duncan/ Delisle
17	May 5 1:00 PM	Exam 2	Duncan/ Delisle



The University of Kentucky Honors Program

Honors in Natural, Physical, and
Mathematical Sciences

“Circadian rhythms: Fitness in the time domain”

HON 152-004

Spring 2016

Tues/Thurs 12:30-1:45 PM

Central Residence Hall, Room 001

Instructors:
Office Address:
Office Phone:
Office Hours:
Email:

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Course Description: A hands-on, science course for Honors student in which they ask a question requiring scientific analysis, develop a related experimentation regimen, collect data, do the experimentation, analyze the results, draw conclusions and appropriately disseminate the results. Students will directly experience the scientific process to learn how scientists work.

Course Overview: Are you a night owl or a morning lark? Did you know that your tendency to be one or the other is controlled by an internal biological clock and its response to light and other signals? Similar to nearly all living organisms, people have their own internal clocks that regulate their daily (circadian) rhythms. Circadian rhythms prepare us for everyday situations by anticipating the daily changes in our environment. For example, how effectively we exercise, study, sleep, and metabolize our food varies over 24 hours, with peaks and troughs occurring at specific times of day. Circadian rhythms are coordinated by a master clock in the brain and are also regulated by a multitude of clocks located in virtually all cells in the body! These discoveries have introduced a new dimension to our overall fitness level: TIME. How well synchronized are our body's clocks, with each other and with the environment? What happens to our clocks when shift work or jet lag disrupts our daily schedules? The robustness of circadian rhythms is now recognized as important indicator of health, while attenuation of circadian rhythms contributes to disease. This course provides you with the fundamentals for understanding and interpreting physiological circadian rhythms, internal biological clocks, and how they relate to human health.

Prerequisite: Membership in Honors

Course Calendar (When unforeseen circumstances necessitate changes, those should be negotiated with the class and reflect the nature of the circumstances necessitating the change. For example, a severe winter storm causing cancelation of classes on exam day would necessitate a change in the exam date or perhaps result in a take-home exam.)

1	Th 1-15	Introduction	
2	T 1-20	Human Aging	
3	Th 1-22	Human Aging	
4	T 1-27	Research Methods	
5	Th 1-29	Research Methods	
6	T 2-3	Health and Longevity	
7	Th 2-5	Health and Longevity	
8	T 2-10	Student Presentation 1	
9	Th 2-12	Theories of Aging	
10	T 2-17	Theories of Aging	Ad Report Due
11	Th 2-19	Student Presentation 2	
12	T 2-24	Menopause	
13	Th 2-26	No Class	
14	T 3-3	Menopause	Research Report Due
15	Th 3-5	Student Presentation 3	
16	T 3-10	Ad Report Presentations	<i>Mid-Term Grades Due</i>
17	Th 3-12	Ad Report Presentations	
	3-17 and 3-19	No Class-Spring Break	
18	T 3-24	Aging Mind	Final Essay Approval Deadline
19	Th 3-26	Aging Mind	
20	T 3-31	Alzheimer's Disease-Dr. Wilcock	
21	Th 4-2	Alzheimer's Disease-Dr. Wilcock	
22	T 4/7	Student Presentation 4	
23	Th 4/9	Student Presentation 5	
24	T 4/14	Aging and Medicine	
25	Th 4/16	Aging and Medicine	
26	T 4/21	Aging and Public Policy	
27	Th 4/23	Student Presentation 6	
28	T 4/28	Student Presentation 7	
29	Th 4/30	Final Essay Due	

via email at drc@uky.edu. Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.

Academic Integrity: 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.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Senate Rules 6.3.1 (see <http://www.uky.edu/Faculty/Senate/> for the current set of *Senate Rules*) states that 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. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

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

Plagiarism includes reproducing someone else's work (including, but not limited to a published article, a book, a website, computer code, or a paper from a friend) without clear attribution. Plagiarism also includes the practice of employing or allowing 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.

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Grading:**A: 90-100****B: 80-89****C: 70-79****D: 60-69****E: below 60****University and Departmental Policies**

Submission of Assignments (optional): Writing assignments and final projects must be turned in during class or sent by email to melinda.wilson@uky.edu (MS Word files only) by 11:59 pm of the due date. Please write **HON 152** in the Subject line, and tell me what the file is in the body of the email. The date/time stamp on the e-mail *when I receive it* will be the official submission time, not the time when you send it. Plan ahead: e-mail failure or faulty Internet connection will NOT excuse you for being late. Students will receive credit only for material turned in on time. Assignments and final essays received within 24 hours **after** the deadline will incur a point deduction, unless the student has an excused absence.

Attendance Policy: Since student performance is evaluated by class participation, attendance is mandatory. Absences will be considered excused at the discretion of the instructor according to University policies described below.

Excused Absences: Students need to notify the professor of absences prior to class when possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

Verification of Absences: Students may be asked to verify their absences in order for them to be considered excused. *Senate Rule 5.2.4.2* states that faculty have the right to request "appropriate verification" when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Accommodation Due to Disability: 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, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and

thinking. The objective is to learn how our bodies age and the effects of aging in society. At the end of the course, you will be able to:

1. Define aging and its impact on human life in the context of our society.
2. Understand and analyze primary sources in the field of aging.
3. Discuss specific conditions and diseases that show how aging influences human health.

Required Materials: There is no required textbook for this course. Readings will be assigned and for the research paper library resources will be used. I assume students are familiar with UK Library services, including access to e-journals and databases (PubMed). For assistance with these resources, please use the Ask-a-Librarian service (<http://libraries.uky.edu/>).

Honors Program Pledge of Excellence: *As a member of the University of Kentucky Honors Program, I dedicate myself to intellectual inquiry, life-long learning, and critical thinking. I pledge to demonstrate personal and academic integrity both in and outside of the classroom. I pledge to always be willing to engage my peers in earnest and respectful discussion with an open mind.*

Description of Course Activities and Assignments

Canvas: We will use Canvas for class announcements, assignments, and grades. Students will also receive course materials and announcements via their UK e-mail account. If you do not use UK e-mail, you need to activate it and to check it regularly. Contact UK Customer Service Center for questions or problems with Canvas: phone 218-4357 (218-HELP) or send email to 218help@uky.edu. Quick answers are available by clicking the *Help* link at the top of any Canvas screen or checking the TASC website at (<http://www.uky.edu/TASC/index.php>).

The class will involve readings, lectures (minimal), in class discussions and activities. Additionally, students will prepare a presentation and lead a discussion (in groups) of societal impacts of an aging population.

Outside Assignments (details will be given in class): Additional assignments include 1) A written report describing an aging-related hypothesis that includes analysis of a scholarly article to support or refute this hypothesis. 2) A written critical analysis of a popular media advertisement of an anti-aging product (this report will also be presented and discussed in class). 3) A final essay on an aging topic of the student's choice (instructor approval required).

Classroom Conduct:

As a student engaging in many intellectual pursuits, you are expected to maintain a level of dignity and respect towards faculty, staff, and fellow students. You are expected to value differences among all members of our academic community. You have the right to take reasoned exception and to voice opinions contrary to those offered by the instructor and/or other students (S.R. 6.1.2). Equally, a faculty member has the right -- and the responsibility -- to ensure that all academic discourse occurs in a context characterized by respect and civility. Acceptable decorum and civility does not include attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, national/regional origin.

Digital etiquette: please turn off phones before class starts; our time together should be apart from outside distractions. Students may use a laptop or a tablet to take notes or to display class assignments. I may even call on students with laptops to look up facts during class. However, students distracted by what's on their screens will be asked to put them away.

Grading:

Midterm Grades:

Mid-term grades will be posted by the deadline set in the Academic Calendar.

Final Grades:

Grading evaluations will consist of the attendance and in-class participation (30%), the quality of the final essay (25%), performance on the oral presentation (15%), performance on the research report (10%), performance on the advertising report (10%), and completion of in class assignments and activities (10%).



**The University of Kentucky
Honors Program
Honors in Natural, Physical, and Mathematical
Sciences**



**“Human Aging: The Ticking Biological Clock
Within”**

HON 152-004

Spring 2017

12:30-1:45pm T/Th

Central Residence Hall #2, Room 001

Instructor: Melinda E. Wilson, Ph.D.
Office Address: MS609A Willard Medical Sciences Bldg.
Office Phone: 323-9618
Office Hours: by appointment
Email: melinda.wilson@uky.edu

Prerequisite: Membership in Honors

Course description: A hands-on, science course for Honors student in which they ask a question requiring scientific analysis, develop a related experimentation regimen, collect data, do the experimentation, analyze the results, draw conclusions and appropriately disseminate the results. Students will directly experience the scientific process to learn how scientists work.

Course overview: Is death inevitable? This question is one of the most ancient questions known to humans. Why do we age? Can we slow down the aging process? Why do some animals live for decades and others for hours? This course will help both science and non-science majors explore the basic mechanisms of human aging and the consequences of aging relative to human disease. We will also explore the effect of an aging population in the practice of medicine. Additionally students will learn to critically evaluate scientific data used in popular media. Class meetings will be a mixture of discussions of reading assignments and presentations. Students will be evaluated based on participation in class discussions, presentations and writing assignments.

Student Learning Outcomes:

This course satisfies the Intellectual Inquiry in the Natural/Physical/Mathematical Sciences requirement in UK Core. Thus, by the end of the course, students will be able to:

1. Describe methods of inquiry that lead to scientific knowledge and distinguish scientific fact from pseudoscience.
2. Explain fundamental principles in a branch of science.
3. Apply fundamental principles to interpret and make predictions in a branch of science.
4. Demonstrate an understanding of at least one scientific discovery that changed the way scientists understand the world.
5. Give examples of how science interacts with society.
6. Conduct a hands-on project using scientific methods to include design, data collection, analysis, summary of the results, conclusions, alternative approaches, and future studies.
7. Recognize when information is needed and demonstrate the ability to find, evaluate and use effectively sources of scientific information

Course Objectives:

To help prepare science and non-science students on a life long path of inquisition and critical



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April 13, 2016

Memorandum

To: Senate Council

From: Joanie Ett-Mims, UK Core Education Committee coordinator

Re: HON course change UKCEC approval

The UKCEC received a course change request for HON 152 on September 8, 2015. The request was to allow the course to be repeatable for credit one time under a different subtitle. Since the course has already been approved for UK Core and no changes to the course content were requested, the UKCEC did not require the department to attach the course review form in eCATS. The UKCEC voted to approve the course and sent it forward to the Undergraduate Council on April 11, 2016.

The Undergraduate Council voted to approve the course change and sent it forward to Senate Council on April 12, 2016.

Thank you for your consideration.