

Integrated Science Course  
(ISC) Healthy Aging & Quality Dying, Course IDIS 5630

**Course Administration**

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**Course Description/Mission Statement:**

*How does this course advance foundational science?*

The purpose of this course is to expand the foundational science knowledge of aging and dying in order to slow down the aging process of patients, prevent iatrogenic events in older adults, and improve the quality of life and dying. The course accomplishes this through a variety of classroom didactic and other educational activities such as case-based learning and creation of an enduring educational project, as well as a variety of patient-care experiences.

Our course allows opportunities for translation of the foundational knowledge gained into several patient care sites, mentored by Geriatrics and Palliative Care faculty. Students will encounter relevant patient populations (Geriatrics, Palliative, Hospice) where they can apply foundational science knowledge which they have gained elsewhere in the course. These clinical settings include: inpatient and Outpatient Geriatrics, Community Nursing Home, Palliative Care Unit (inpatient), Home Hospice, and Inpatient Hospice.

### **Course-Specific Learning Objectives**

*By the conclusion of this course, students should be able to:*

1. Describe the epidemiology of aging and its impact on the healthcare system.
2. Explain the cellular mechanisms of aging and identify behavioral and pharmacologic interventions to delay aging.
3. Explain how age-related physiologic changes contribute to homeostenosis and result in clinical syndromes associated with aging.
4. Describe the science of medication safety with attention to age-appropriate drug and dose selections, accurate medication reconciliation, avoidance of prescribing cascades, and evidence based deprescribing in the older adult.
5. Compare and contrast different settings of care in terms of admission criteria, level of care, financing, and potential hazards associated with each; and describe an evidence-based approach to improve the quality of transitions of care.
6. Construct a plan to communicate with patients and family members to deliver bad news, to identify goals of care, to elicit preferences of care along a spectrum of serious illness, and to explain palliative care and hospice.

### **Common ISC Learning Objectives**

*By the conclusion of this course, students should be able to:*

1. \*Demonstrate knowledge and understanding of the foundational science for the ISC course topics (MK2a/MK2b/MK7a/MK7b/MK7c).
2. Integrate foundational science knowledge into clinical scenarios through the exploration of patient evaluation (symptoms, diagnostic studies, and underlying pathophysiology) and management plan development (MK2a/MK2b/MK7a/MK7b/MK7c/PC2a)
3. Model a commitment to continuous self-regulated learning as evidenced by the collection, analysis, interpretation, and implementation of newly acquired information (MK7b/MK7c/PC7a/PBLI3a)
4. Display professional demeanor and duty while demonstrating compassion and respect for all persons, utilizing effective communication strategies (honesty and transparency) with patients, families, and healthcare colleagues, regardless of their cultural background (PR1a/IPCS7b.1)
5. Function as an effective member of the patient care team, including effectively managing interpersonal conflict and the incorporation of constructive feedback (SBP2a)

***\*This is the primary objective of the ISCs***

### **Personal Learning Objectives:**

Students are required to submit at least 2 personal learning objectives before the course begins through the REDcap survey sent out by course administration.

## **Course Materials**

All course materials and assignments will be made available on VSTAR ([vstar-learn.app.vanderbilt.edu](https://vstar-learn.app.vanderbilt.edu)). If you cannot access this course in VSTAR, please contact the Immersion Phase Program Coordinator, LaToya Ford ([latoya.m.ford@vanderbilt.edu](mailto:latoya.m.ford@vanderbilt.edu)), immediately. Due to copyright issue we cannot post PDF of articles directly in VSTAR Learn. Students will be responsible for downloading relevant materials and being prepared for class.

If you experience technical difficulties while taking a quiz/exam or uploading/posting an assignment in VSTAR Learn, please notify the course directors immediately. We will speak with IT to resolve the problem.

## **Educational Activities**

### **Educational Strategies**

Educational strategies that will be used to facilitate student achievement of the learning objectives include the following:

- Active learning: case-based learning, CELA simulation, role playing during palliative care workshops, interactive foundational science sessions
- Passive learning: lecture-based foundational science sessions
- Self-directed learning: case-based learning, enduring educational resource project, patient write-up, transitions in care activity, completion of required readings

### **Foundational Science Integration**

Students will encounter patient populations relevant to the foundational science they have learned in the patient care sites cited above. Besides these mentored clinical patient care experiences, students will have a classroom-based “communication skills workshop” and opportunity to apply this knowledge in a simulated CELA patient encounter during our course. They will also have a reflective patient write-up and opportunity to create an enduring educational resource to translate foundational knowledge into a product which can be used teach providers and/or patients/families. In addition to these exercises, students will have the chance to learn and integrate Geriatrics, Palliative/Hospice, and End-of-Life foundational science topics with two CBL cases.

### **Use of Primary Literature**

Many of the foundational science didactics are based on primary literature. Additionally, citation of primary literature for peer teaching in CBL and the enduring educational resource project is encouraged and serves as a basis for student assessment.

### **Course Schedule**

Students will receive an individualized schedule at the start of the course, based off of their preferences that were submitted in the pre-course Redcap survey and based off of clinical availability.

### **Skills Week**

In the first week of the course, students will participate in case-based learning, interactive lectures, workshops, role play, and deliberate practice in CELA in order to build a foundation in knowledge and clinical skills that they will use throughout the course. These sessions will have a mix of foundational science and clinical skills components. Examples of clinical skills that students are

expected to master:

- Counsel patients on healthy aging
- Screen patients for geriatric syndromes (e.g. polypharmacy, falls, frailty, functional decline, malnutrition, delirium, dementia, depression, incontinence)
- Introduce palliative care and hospice
- Deliver bad news
  - Discuss code status and advance directives
- Estimate prognosis using evidence-based tools
- Communicate about prognosis with patients and families
- Manage pain and other symptoms at the end of life

### Foundational Science Sessions

In the remainder of the course, students will attend mandatory foundational science didactic sessions that will occur Monday and Tuesdays between 10am or 11am and 1pm. During this time, students engaged in clinical work should be excused to attend these didactic sessions. These sessions will use a variety of learning modalities including lectures, group discussions, and workshops. Preparatory work for each session will be listed in Vstar.

### Clinical Experiences

#### *Inpatient Week*

All students will have one week in the inpatient setting caring for older adults (Acute Care for the Elderly Unit at Vanderbilt (ACE), geriatric consults at the Nashville VA, Palliative Care Unit at Vanderbilt, post-acute rehab, or geriatric-psychiatry unit at VPH. Students are expected to follow at least two patients, formulating their own assessment, diagnostic and therapeutic plans, and then present those plans to the attending physician. Emphasis will be placed not on volume of patients seen by students but rather on 1) understanding the impact of physiologic changes of aging on disease presentation, disease management, and drug selection and dosing, and 2) developing a treatment plan that aligns with patients' goals and values and focuses on maximizing function and quality of life. Students will be expected to perform independent evaluation (gather history and perform physical exam, prioritize a differential diagnosis, recommend and interpret diagnostic screening tests), enter orders for co-signature, form clinical questions and retrieve evidence to advance patient care, collaborate as a member of an interprofessional team, identify system failure and contribute to a culture of safety and improvement to prevent iatrogenesis (e.g. falls, pressure ulcers, delirium, malnutrition, and functional decline)—all Entrustable Professional Activities students should be able to perform independently.

#### *Outpatient Week*

Students will have a second clinical week dedicated to a variety of outpatient experiences. These experiences may include primary and subspecialty care clinics, nursing home experiences, primary care home visits, inpatient hospice, and home hospice visits. Not every student will have an experience in each care setting; however, students will share their experiences with each other in a group setting and engage in peer teaching so that all can learn from each other's experiences.

#### *Additional required learning activities*

##### 1. Transitions in care activity

In the transitions in care activity, students will select a patient during a nursing home visit on their outpatient week. Using a structured interview, they will assess the quality of the transition

from patients', family members' (if present or available by phone), and nursing home staff perspectives. A written report will be Results from their experiences will be shared during a group discussion in week 4 of the course.

2. Enduring Educational Resource Project

Students will also have a final project creating an enduring educational resource. The intended audience/user of the educational resource can be medical students, physicians, members of the interdisciplinary teams, patients, or families and caregivers. In the education project, students will select a foundational science topic of interest. They have the option of meeting with one of the course faculty to develop their product. These are encouraged to be accessible online (e.g. online modules, blog entries, 5-minute videos) for broad dissemination, although this is not required. Students will submit 5 final exam questions on their topic. At the end of the course, the students will present their projects at the Healthy Aging & Quality Dying Symposium, where course directors and instructors will evaluate the resources and a winner will be determined and receive a special recognition. If students choose to create videos, they must be less than 7 minutes in length.

3. Patient write-up

Every student will identify one patient during their inpatient week and complete a comprehensive write up for that patient, due on VSTAR at the end of their inpatient week (due by 8am Monday after inpatient week). Late submissions will lose 5% points per day. Please see the grading rubric on V-star which covers specific details of what is to be included in the write-up. This should be similar to a History & Physical note, but include a discussion of relevant pathophysiology and a rationale for the treatment plan in the problem-based assessment/plan. Students can pick their own patient based on their own interests. This note should be de-identified: do not include patient's name, DOB or other major identifiers. You should include the VUMC medical record number so the faculty evaluator can cross-reference the medical record if needed. Do not copy and paste clinical notes from the patient's medical record. This will result in an unsatisfactory evaluation (fail) for the patient write up component.

### **Assessments, Expectations, and Policies:**

#### **Student Assessment:**

The final grade in this course will be assigned on an honors/high pass/pass/fail (H/HP/P/F) basis. The course's grades will address performance in five or six separate, but equally important competency domains: Medical Knowledge, Patient Care, Interpersonal and Communication Skills, Practice-Based Learning and Improvement, Systems-Based Practice, and Professionalism. Grading of performance within each competency domain can be informed by a variety of assessment methods that may include quantitative scores and qualitative feedback.

- ISCs will use both **qualitative measures** (VUSM competency milestones) and **quantitative measures** (such as quizzes, examinations, presentations, and reflections).
- To pass a course, each student must pass both the **quantitative and qualitative measures**.
- To obtain honors, a student should demonstrate excellent performance in *all* aspects of the course

## Quantitative Assessments

<i>Component</i>	<i>Percentage</i>
Patient write-up	25%
Weekly Quizzes	40%
Enduring Educational Resource Project	30%
CELA Week 4	5%

*Table 1*

- Four weekly quizzes will cover material in the 30+ didactic sessions. Quizzes will occur at the end of each week. The didactic schedule on VStar is color-coded to show which sessions are tested in which quizzes. Please note that while the each quiz is meant to test knowledge related to specific didactic sessions, the course material builds on itself and principles that are covered in week 1 may be pertinent for material covered in week 4. Also note that the quizzes may test details or facts covered in class that are reflective of a student's deeper knowledge of a certain principle related to the course learning objectives.

### Qualitative Assessments

- Competency milestone data about each student should be collected from 2 unique observers (e.g. clinical faculty, residents, teaching faculty) who are able to assess student performance in key competencies during the activities of the course. ISCs are required to measure the competencies as defined in Table 2.
- Your attending from your inpatient clinical week will be sent a milestone evaluation to complete.
- For an in-depth description of each competency/milestone, please go to: <https://medschool.vanderbilt.edu/ume/isc-milestones-students>
- Course directors will synthesize this input into a final, summative assessment for each competency domain (in gray below).

### Competency domains and milestones that are required for student assessment in the ISCs/Frequency of assessment and feedback of the above milestones:

Assignment/Activity	Evaluator	Form	Date	Milestone										
				MK 2a	MK 2b	MK 7a	MK 7b	MK 7c	PC 2a	PC 7a	IPCS 7b.1	PBLI 3a	SBP 2a	PR 1b
CBL 1 Faculty	Duggan, Wooldridge	CBL	Week 1	x	x	x	x	x				x		x
CBL 2 Faculty	Duggan, Wooldridge	CBL	Week 1	x	x	x	x	x				x		x
Midcourse Feedback	Duggan, Wooldridge	PBL/SBP	Week 2										x	
Inpatient clinical week	Geriatric and PCU faculty*	PC-Inpatient	Week 2-3					x	x	x				x
Outpatient clinical experiences	Geriatric and palliative faculty*	PC-Outpatient	Week 2-3						x	x	x	x		
Transitions in care activity writeup	Duggan, Wooldridge	TIC	Week 4	x	x									x
Enduring Educational Resource Project	Duggan, Wooldridge	EER	Week 4	x		x	x					x		
CELA Friday Week 1	Duggan, Wooldridge	EER	Week 4										x	
CELA Friday Week 4	Duggan, Wooldridge	EER	Week 4						x	x	x	x		

\*At least one of the following: Mariu Duggan, Victor Legner, Ralf Habermann, Hina Budhwani, Parul Goyal, Tara Horr, Susan Bell, Laura Dugan, Jim Powers, Andy Wooldridge, Bill Petrie, Fellows (Geri-med/geri-psych)

Table 2

### Assigning a final grade

Students' final grades will use their performance on quantitative measures as a foundation for final grade assessment that should be adjusted, as appropriate, to reflect their performance on competency domains, using the Threshold/Target/Reach levels for milestones (<https://medschool.vanderbilt.edu/ume/isc-milestones-students>), as follows:

<b>Final Grade</b>	<b>Quantitative Score</b>	<b>Summative Competency Ratings (Qualitative Score) (6 domains assessed)</b>
<i>Risk of Failure (course director discretion)</i>	<70%	Any Sub-Threshold OR >2 Thresholds
<i>Pass</i>	At least 70%	No more than 2 Thresholds All others at Target or above
<i>High Pass</i>	At least 80%	At least 3 Reaches All others at Target
<i>Honors</i>	At least 90%	Nothing below Target 5 Reaches

Table 3

### Student grievance concerning grades

Students can seek redress of a problem with a grade no later than four weeks after the grade is released. Students with a grievance should confer directly with the ISC Directors. Every effort should be made to resolve the problem fairly and promptly at this level. If the student and ISC Directors cannot resolve the problem through discussion, the Medical student can formally request an appeal, within two weeks of talking with the course director, from the Associate Dean for Medical Student Affairs (ADMSA). Appeal will prompt a review of the course's assessment practices by the Standing Assessment Committee, as well as a review of the individual student's situation by the ADMSA, the Associate Dean for Undergraduate Medical Education, and a neutral faculty reviewer. If resolution is still not achieved, the ADMSA will make a recommendation to the Senior Associate Dean for Health Sciences Education, who will make the final decision.

### Course Policies

Absence from any scheduled didactics must be approved by a course director.

If absence from any scheduled clinical activity is anticipated due to illness or other urgent issue, the course directors and the clinical preceptor must be emailed.

Use of laptops and cell phones for personal, non-course related reasons during scheduled didactics is prohibited.