



**INDIANA UNIVERSITY
SCHOOL OF MEDICINE
COMPETENCY HANDBOOK**

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Introduction

Indiana University School of Medicine (IUSM) has had a competency-based curriculum since 1999. It was one of the first in North America and continues to be one of the best developed. Throughout your first two years of education at IUSM, you will participate in a variety of learning experiences that will integrate competencies along with basic science and clinical material. You will be evaluated and expected to attain Level 1, beginner achievement within each competency by the end of your second year of medical school.

The competencies are:

I - Effective Communication

II - Basic Clinical Skills

III - Using Science to Guide Diagnosis, Management, Therapeutics, and Prevention

IV - Lifelong Learning

V - Self-Awareness, Self-Care, and Personal Growth

VI - The Social and Community Contexts of Health Care

VII - Moral Reasoning and Ethical Judgment

VIII - Problem Solving

IX - Professionalism and Role Recognition

The overall objective of the IUSM curriculum is to produce physicians who have a strong biomedical grounding and simultaneously have the personal qualities necessary to provide care that integrates biological, psychological and social dimensions of care that will improve health and alleviate suffering.

The Curriculum

The IUSM competency curriculum consists of three developmental levels of achievement from basic to advanced. The first level introduces basic activities that will familiarize you with all 9 competencies. It is expected that Level 1 will be achieved by the end of the second year of medical school. The second level involves putting the competencies into action in the clinical arena and is expected to be completed by the end of the third year. Finally, Level 3, involves mastery of least three competencies obtained by doing special projects, electives, and other activities. All students must be proficient at Levels 1 and 2 in *all* nine competencies as well as achieving Level 3 mastery in *at least three* competencies to be eligible for graduation.

Timeline for Competency Completion

YEAR 1	YEAR 2	YEAR 3	YEAR 4
LEVEL 1 ALL COMPETENCIES		LEVEL 2 ALL COMPETENCIES	
		LEVEL 3 THREE OR MORE COMPETENCIES*	

*Students may have experiences in years 1 & 2 that can be applied toward a special project approved by a competency director. If a student has an idea they would like to implement that would be appropriate for credit toward acquiring a Level 3 competency (examples include putting on community health fairs, medical service trips, publishing research, etc.) he or she should contact the appropriate competency director to submit an independent study proposal.

Competency	Competency Director
I – Effective Communication	Glenda Westmoreland, MD gwestmor@iupui.edu
II – Basic Clinical Skills	Aloysius (Butch) Humbert, MD ahumbert@iupui.edu
III – Using Science to Guide Diagnosis, Management, Therapeutics & Prevention	Virginia Thurston, PhD vthursto@iupui.edu
IV – Lifelong Learning	Frances Brahmi, PhD fbrahmi@iupui.edu
V – Self-Awareness, Self-Care & Personal Growth	Nancy Butler, MD nbutler@iupui.edu
VI – Social and Community Contexts of Health Care	Deanna Willis, MD drwillis@iupui.edu
VII – Moral Reasoning and Ethical Judgment	Margaret Gaffney, MD mgaffney@iupui.edu
VIII – Problem Solving	<i>To Be Named</i>
IX – Professionalism & Role Recognition	Richard Frankel, PhD rfrankel@iupui.edu

You were able to compose a personal statement that got you into medical school, but could you...

- ... interview the spouse of a cadaver donor about what it was like to learn anatomy from him/her
- ... work cooperatively with a group of your peers on an assigned project in which the grade was collective

Competency I – Effective Communication

A competent medical student should be able to listen attentively and communicate effectively with faculty, other students, patients, families, and health care team members. By practicing and mastering these skills, the student learns that interpersonal rapport is required to form and maintain optimal and effective interactions with others.

Expectations

Level 1 students will demonstrate:

- Basic oral and written communication skills involving both academic studies and interactions with colleagues.
- Competence in oral communications in interactive settings, such as with an individual or simulated patient or faculty member.
- Effective communication in written communications of informal nature, such as descriptive reports and hospital progress notes.
- The ability to follow prescribed elementary processes for interviews and write-ups, such as one would find in a medical / scientific publication or basic interviewing handbook.

Examples of Coursework

Year One:

Gross Anatomy – Group autopsy report

Biochemistry – Oral presentation of a genetic disease

Neuroscience – Discussion during Clinical Correlations

Year Two:

Introduction to Medicine – Oral presentation of patient history

Pharmacology – Prescription writing activity

You've probably been CPR certified before and are the go-to person whenever someone gets hurt on a camping trip (or other activity), but could you...

...perform a focused neurological exam
...insert a central vein catheter
...manage a ventilator for a patient in a coma

Competency II – Basic Clinical Skills

A competent medical student should be able to elicit and record a complete and accurate history and perform a skillful examination appropriate to a variety of patient encounters. This medical student should be able to correctly determine whether to perform a comprehensive or suitably focused history and physical examination. The medical student should be able to correctly select, proficiently perform, and accurately interpret selected clinical procedures and laboratory tests.

Expectations

Level 1 students will be able to...

- Elicit a complete medical history and perform a complete physical examination using proper technique
- Understand how to organize and analyze the data collected, though the quality of the history of the present illness and differential diagnosis will be limited by their knowledge of the pertinent diseases
- Possess an introductory knowledge of routine clinical procedures and will have been taught them, though they will not be expected to be able to perform these procedures without supervision.

Examples of Coursework

Year One:

CPR Training – CPR skills
Intro to Medicine – Basic history taking skills OSTE

Year Two:

Neuroscience and Clinical Neurology – Radiology, CT/MRI
Intro to Clinical Medicine II – Suturing, venipuncture, IV, universal precautions, intubation, etc

You did well enough on the MCATs, have a good undergraduate science GPA, and may even still remember that the kidney produces urine by filtering blood, but medical school can teach you to ...

...understand the interplay between diabetes mellitus and vascular disease on a biochemical, cellular, and organ system level

...interpret lab results from complete blood counts and comprehensive metabolic panels for modifying treatment regimens

Competency III – Using Science to Guide Diagnosis, Management, Therapeutics and Prevention

First and second year medical students will be required to apply basic science knowledge at the molecular, cellular, systemic, and environmental levels toward the diagnosis, management, therapy, and preventive care of the diseased state. This education will be based on our current understanding and cutting-edge advances of contemporary basic sciences

The competent Level 1 medical student will use this knowledge to formulate medical assessments of patients in order to produce relevant differential diagnoses, appropriate medical therapies/interventions, and a complete medical plan directed toward patient care and well-being. The competent Level 1 student will also recognize and utilize opportunities, where appropriate, toward prevention of medical diseases and improving patient education.

Examples of Coursework

You will learn in:

Microbiology that *M. tuberculosis* is an acid-fast bacillus

Immunology that *M. tuberculosis* binds mannose receptors on macrophages and stimulates cytokine production via a TH1 response

Gross Anatomy and Histology about the function and structure of organs/tissues of the human body.

Physiology that a TB infection of lung tissue predisposes an individual to alterations in oxygen saturation and respiration rate

You will also learn in:

Pathology that the gross presentation of organs from a patient with *M. tuberculosis* infection shows caseous necrosis of the parenchymal tissue

ICM II that chest x-rays of TB patients show a millet seed presentation and present with fever, night sweats, weight loss, hemoptysis, and shortness of breath

Pharmacology that treatments for *M. tuberculosis* include Rifampin, Isoniazid, Ethambutol, and Pyrazinamide

Your goal in the first two years of medical school is to be able to synthesize information from all of these courses! With this skill, you will be able to formulate an appropriate assessment and plan for a patient who presents with fatigue, weight loss, night sweats, hemoptysis, and shortness of breath. Then, you will be able to order a complete work up to determine if the patient has *M. tuberculosis*.

By developing a strong knowledge base from your basic science courses, you will acquire the necessary fund of knowledge that will lead to your success with the USMLE, clerkship years, residency, and most importantly as a future physician!

You've already decided that you love learning, or at least are willing to submit to another 6+ years of it.
You might know how to earn an A on a physiology final, but could you...

...evaluate the best evidence for comparative effectiveness research on healthcare costs??
...locate quickly and effectively the resources needed to create a treatment plan for a patient with end stage renal disease?

Competency IV – Lifelong Learning

The competent medical student should be aware of the limits of his / her personal knowledge and experience. The competent medical student should be able to actively set and pursue clear learning goals; exploit new opportunities for intellectual growth and professional enlightenment; perform critical, reliable and valid self-assessment; and apply the knowledge gained to the practice of his / her profession.

Expectations

Level 1 students will exhibit...

- Proficiency in information retrieval and demonstrating the appropriate skills necessary for retrieving information.
- Ability to define learning issues and utilize modern information searching modalities, organize data, compile, and use information that is retrieved.
- Open and critical evaluation of one's personal performance on a variety of clinical and academic tasks.
- Recognition of problems in his / her learning and seek assistance as necessary.

Examples of Coursework

Year One:

Biochemistry – Information search for Problem Based Learning case

Histology – Literature search on birth defects

Year Two:

Pharmacology – New drug profile

You have developed some awareness of your personal qualities through life experience. You have ideas about your personal needs—what keeps you healthy and focused and perhaps some ideas about your own personality style. But could you...

...mesh your own personality style with fellow students who think and act differently from you
...constructively engage with a patient whose behavior is making their health problems worse
...accept criticism maturely and use it to improve yourself and your interactions with others
...balance commitments of personal and family life without shortchanging either and keeping up enough energy for both

Competency V – Self-Awareness, Self-Care and Personal Growth

The competent medical student should approach the practice of medicine with awareness of his / her limits, strengths, weaknesses, and personal vulnerabilities. The competent medical student assesses personal values and priorities in order to develop and maintain an appropriate balance of personal and professional commitments. He / she seeks help and advice when needed for his / her own difficulties and develops personally appropriate coping strategies. A medical student should be able to recognize his / her effect on others in professional contacts. He / she seeks, accurately receives, and appropriately responds to performance feedback.

Expectations

Level 1 students will ...

- Demonstrate awareness of relevant issues as they are present in their experiences to this point.
- Explore their own beliefs, values, style, and priorities as they relate to the broad context of preparation for professional activities.
- Identify and respond to signs of stress in themselves.
- Actively examine potential areas of weakness both in interpersonal interaction and self-development, conceiving of potential options and solutions for addressing these deficiencies.

Examples of Coursework

Year One:

- Intro to Medicine –Learn the stage related developmental issues for your age as well as others
-Learn your personal response to differing cultures and attitudes about medical care
- Gross Anatomy -Write about your responses to cadaver dissection
- MBTI -Examine your preferred coping traits and how you apply them to your individual and group curricular activities as well personal coping in school
- OSTE -Review of Optimized-Standardized Training Exercise (OSTE)

Year Two:

- Peer / Self Assessment – Peer evaluation and self reflection activity

You've probably done some volunteer work in the past and might still be donating time regularly. You understand the inequalities of healthcare delivery across different socioeconomic strata and you might have read *The Spirit Catches You and You Fall Down*, but could you...

- ...tailor a treatment regimen that takes into account cultural views on health, disease, and treatment in order to increase patient compliance
- ...work with a school nurse to help a patient use their asthma medicine more appropriately

Competency VI – The Social and Community Contexts of Health Care

Students should be able to recognize the diverse factors that influence the health of the individual and the community; identify the sociocultural, familial, psychological, economic, environmental, legal, political, and spiritual factors impacting health care and health care delivery; and respond to these factors by planning and advocating the appropriate course of action at both the individual and the community level.

Expectations

Level 1 students will be expected to...

- reflect on and acknowledge their own cultural and spiritual traditions, as well as gender, class, and sexual socialization experiences.
- articulate ways in which these factors influence their approach to medical practice.
- demonstrate nonjudgmental attitude toward value systems and beliefs different from their own.
- explore the role of community service through site visits, discussion with staff and patients, and observations of the provision of services.

Examples of Coursework

Year One:

Intro to Medicine – Community clinic site visits

Histology / Embryology – Discussion of social aspects of patient case

Year Two:

Intro to Medicine – Informational presentations by providers, site visits, discussions with staff / patients, information gathering, and observations

You've probably established a difference between right and wrong by this point and can recognize it when you see it. Your judgment has been good enough so far to stay out of trouble, but could you...

...recognize conflicts of interest in yourself or colleagues regarding access to old exam questions given to you by an upper classman

...make difficult patient care decisions like resolving right to life issues where a family's, patient's, and your own medical opinion are in conflict

Competency VII – Moral Reasoning and Ethical Judgment

The competent medical student will be able to recognize the ethical issues of medical practice and health policy; identify alternatives in difficult ethical choices; analyze systematically the conflicting considerations supporting different alternatives; and formulate, defend, and effectively carry out a course of action that takes account of this ethical complexity. Medical students should have a willingness to recognize the nature of the value systems of patients and others with commitment to his / her own system and the ethical choices necessary to maintain his / her own ethical integrity.

Expectations

Level 1 students will be able to...

- Employ ethical concepts and reasoning when presented with model ethical cases in medicine.
- Recognize ethical issues in medical practice and identify the most relevant ethical considerations in them.

Examples of Coursework

Year One:

Histology / Embryology – Ethics case studies

ICM I – Small group sessions, writing assignments (patient-doctor relationship, end of life issues, professional ethics)

Physiology – Team Based Learning

Year Two:

Introduction to Medicine II – Ethics lectures and discussion

Medical Pharmacology – Team Based Learning

Genetics – lectures and discussion

You know you're good at solving problems. You've solved the problem of gaining acceptance to medical school, but can you...

...identify the relevant information in a poorly defined problem in order to provide clarity for decision making
...draw on multiple fields of knowledge to synthesize a solution to an issue with multiple variables

Competency VIII – Problem Solving

A medical student at Level 1 of problem solving should be able to recognize and thoroughly characterize a problem while considering all the scientific, social, and economic implications. The student should be able to develop an informed plan of action after gathering relevant information from diverse resources. After considering all the data and possible resolutions to the problem, the student will then act to resolve the problem.

Expectations

Level 1 students should be able to...

- Display competence in the basic problem solving skills necessary to solve medical problems.
- Recognize a problem, examine it objectively, collect and integrate pertinent information, generate potential solutions, formulate a plan of action, implement a solution, and subsequently assess the results of his / her actions.
- Frame, understand, and solve a straightforward problem.

Examples of Coursework

Year One:

Neuroscience – Team Based Learning, clinical correlations
Physiology – Critical thinking emphasis in exams

Year Two:

Systemic Pathology – Case study review and analysis

You might consider yourself a somewhat professional person. You dress appropriately, act with integrity, already understand HIPAA somewhat and gave a satisfactory answer to the “What does professionalism mean to you” question in your interview, but can you...

...resolve tension and conflicts effectively when disagreements arise in the classroom
...recognize when it is appropriate to refer a patient to a physician with a more specialized knowledge base

Competency IX – Professionalism and Role Recognition

The competent first or second year medical student should be able to recognize the powerful impact of his / her professional attitudes and behavior on others and consistently demonstrate the highest standards of excellence, duty, and accountability to other students, faculty, other healthcare workers, and the patient. Medical students should value the humanity of all individuals and not exploit other students, faculty, or patients for personal gain. The competent medical student should recognize his / her role in working collaboratively with others to meet the health care needs of the individual and the community.

Expectations

Level 1 students should be able to...

- Be responsible, reliable, dependable, and demonstrate integrity, honesty, courtesy and self-discipline in the classroom and in the clinical setting.
- Project a professional image in manner, dress, and action.
- Begin to recognize personal limitations and biases and find ways to overcome and adapt to them.
- Demonstrate empathy for patients and respect their rights and privacy.
- Have a basic knowledge of and understand the importance of rigorous adherence to the institution's policies and standard operating procedures.
- Recognize ethical and legal issues in medical practice.

Examples of Coursework

Year One:

Gross Anatomy – Observation for professional behavior in laboratory

ICM I – Physician shadowing activity, small group discussions, writing assignment

Biochemistry – Observation of small group interaction

Year Two:

Medical Genetics – Clinical visits, meeting with patient families

Assessment

Competencies will be evaluated through course activities scheduled during the courses and clerkships both using formal evaluation methods as well as by faculty observation. These activities are specific and predetermined but are not necessarily presented as competency-based activities when they occur in the coursework. Activities may not be formally assessed or formally assessed, with the latter category further broken down into formative or summative assessed activities.

Not formally assessed - The activities that are not formally assessed have earned that title because they are not evaluated using any specific rubric, but course directors will observe patterns of activity and achievement. An example would be Professionalism and Role Recognition. It is expected that all interactions with staff and faculty will be conducted in a professional manner. However, a student that makes a habit of unprofessional interaction can be brought to the attention of the competency coordinator so that the student knows both that their activities are considered unprofessional and that there are means available to correct deficiencies.

Formative exercises - The difference between formative and summative activities is best exemplified by using an analogy of tests and quizzes. Formative exercises are designed to assess students and provide feedback for students to improve if necessary, without serious repercussions if the student does poorly on the activity. This is similar to how a quiz can be used to test knowledge, letting a student know if they need to improve (indicated by a poor grade) while being a low-stakes activity (failing a single quiz should not seriously hurt your final grade).

Summative exercises - Summative exercises are more like tests or final exams in that they are supposed to evaluate students after they have had some chance to gauge their performance with opportunity to correct shortcomings as needed. Summative exercises are usually less frequent, more in-depth, and count more toward the evaluation of the student the same way that final exams are less frequent, more in-depth, and count more toward the final grade than any one quiz.

Reporting Your Progress

Competency Transcript - At the end of the educational experience, a Competency Transcript will be created to document the student's achievement in the Competency Curriculum. The Competency Transcript contains all the results of the final evaluations from each year, including if the student needed remediation for a final evaluation of unsatisfactory. This Transcript will contain only dates when each level is achieved and annotation indicating if remediation was needed due to a summative evaluation of unsatisfactory. The Transcript pairs with the grades transcript and is submitted to ERAS, a service from the AAMC that compiles transcripts and USMLE exam scores to be sent to residency programs (<http://www.aamc.org/students/eras/>)

Competency Advisor's Report - A student's progress in the competency curriculum also will be tracked on a Competency Advisor's Report. Upon rising to MS3 each student will be assigned a competency advisor, similar to an undergraduate advisor in that the competency advisor should help the student make sure that all competencies are being acquired as needed for the student to graduate. This Competency Advisor's Report is more specific than the Competency Transcript because it contains comments from the competency director that made the final summative evaluation. This Competency Advisor's Report will be used to write the Dean's letter sent to residency programs. The comments on the Competency Advisor's Report provide an excellent means to create a letter that is more tailored to each student and can provide a more complete picture of the student above and beyond what could be provided if the letter were created from information in a personal statement.

Remediation

Remediation can take a few different forms. If students perform poorly on specific activities, the course instructor would contact the student and request that an assignment be redone, such as if a student does a literature search for a course but uses poor resources. If a student is found by the summative panel to have an unsatisfactory evaluation, the student will be instructed to meet with the center competency coordinator to discuss remediation options of a more intense nature, which could include a special project, taking a course in public speaking, or shadowing a physician with a written evaluation submitted to the director.

Remediation of specific activities is not recorded in a form that will appear on the Competency Transcript but will appear on the Competency Advisor's Report. These may or may not show up in the Dean's Letter, however remember that the purpose of the competency curriculum is to track growth, and if a student showed receptiveness and understanding with regards to remediation that will also be noted. Remediation of an unsatisfactory grade on the final competency assessment will be noted on the Competency Transcript by an asterisk (**) next to the grade.

Resources

DoCC (Database of Competency Curriculum)

A full list of courses and their competency components can be found on the Database of Competency Curriculum (DoCC) found at <http://meded.iusm.iu.edu/curriculae/>

After Logging in, under the heading “Research Curriculum” click the link [Search](#). A page will come up with search criteria. On this page titled “Competency Search” one can find courses dealing with specific competencies or see what competencies are addressed by a single course.

Academic Year:

Competency	Competency Level	Center	Department
Effective Communication	Level 1 (Year 1)	BL	Anatomy and Cell Biology
Basic Clinical Skills	Level 1 (Year 2)	EV	Anesthesia
Using Science	Level 2 (Year 3)	FW	Biochemistry and Molecular Biology
Lifelong Learning	Level 3 (Year 4)	IN	Cellular and Integrative Physiology
Self-Awareness		LA	Dermatology
Social & Community		MU	Emergency Medicine
Moral Reasoning		NW	Family Medicine
Problem Solving		SB	Interdisciplinary
Professionalism		TH	Library
			Medical and Molecular Genetics
			Medicine

For example, to see what courses have a component dealing with Competency VIII during the first year at Fort Wayne, one might select a search like this (you can right-click and choose “select all” for the department field to select all departments, or individual departments can be selected)

Clicking the Search button and scrolling down reveals a list of courses

Search results

View	View	Ctr	Course #	MSAS #	Title	Competency	Level	Course Director	Assessed*	Course Type
<input type="button" value="Single"/>	<input type="button" value="Multiple"/>	FW	AC D508	02DN508	Neuroscience	Problem Solving	Level 1/Year 1	Sweazey, Robert	Y	Regular
<input type="button" value="Single"/>	<input type="button" value="Multiple"/>	FW	CE F515	02HA515	Physiology	Problem Solving	Level 1/Year 1	Bell, David	Y	Regular

*-Competencies that are taught but whether formally assessed in a course. (Yes/No)

There are then two choices

1) Clicking on “view” under SINGLE will show a list of activities for the specific competency for the specific course.

2) Clicking on “view” under MULTIPLE will show a list of activities for all competencies for the specific course.

After viewing a course, the page that loads will have a breakdown of course activities under different headings

Criteria / Objectives- these are the competencies addressed by this course. Some courses will be more specific as to what aspect of a competency is being addressed.

Educational Methods- these are the actual activities that have been identified as pertaining to the competencies. Performance on these activities will provide the material used to assess final competency grades in the summative evaluation.

Description of Activity- this is a more general description of the activities used to evaluate competency

Assessment Methods- this is how your instructor(s) will collect information from the activities performed by students. These methods are what generate information that will be evaluated using assessment tools.

Assessment Tools- these are the official academic processes that will organize the information obtained from the assessment methods. An example would be a Likert scale.

Feedback Methods- this section describes how a course instructor(s) will inform the student as to how the student is progressing toward acquiring a competency.

Satisfactory Performance Requirements- here one can find what specifically is expected of them in order for the instructor(s) to say that the student is competent in the summative evaluation.

Remediation- This section will show students what will be required should they fail to meet the satisfactory performance requirements.

WHAT ELSE IS AVAILABLE THROUGH DoCC?

Other services available in DoCC include information on the Relationship-Centered Care Initiative (RCCI), a program in place with the goal of improving the social environment of the school to be more positive, collaborative, and constructive. Information on this initiative can be found on the main page under the heading "Research Curriculum" by clicking the link Informal Curriculum.

DoCC also contains references to professional literature published by IUSM faculty in implementing and teaching the competency based curriculum. In addition, references to professional literature that discusses the importance of the different competencies in medical education are found on DoCC. These article references can be found on the main page under the heading "Access Resources" and then by clicking on the link Publications by IUSM Faculty or Professional Literature respectively.

MSIS (Medical Student Interactive Site)

Students are able to track their competency progression by going to MSIS (Medical Student Interactive Site) <http://meca.iusm.iu.edu/MSIS/index.htm>. After students log in, they can select "Reports" from the list of links, and then "Competency Report" from the dropdown menu. The Competency Grade Report is separated into "Final Grades" and "Preliminary Grades." The "Final Grades" section will show the final competency grades as will appear on the Competency Transcript and Advisor's Report. The information contained in the "Preliminary Grades" section will only appear on the Advisor's Report. The only person that will see the MSIS Competency Grade Report specifically will be the student.

MSIS is also where students will need to go to register and submit work regarding the level 3 competencies. More information regarding level 3 competencies and the process for registration can be found by using the Level 3 Planning Guide found on the MECA Website at <http://meded.iusm.iu.edu/Resources/ForStudent>