

Competencies	Courses		Learning Opportunities and Assessments	
<p>1. Recognize the physiological basis of and pathophysiological processes involved in cardiovascular and other major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 P	X	Journal Clubs
		340.751 P	X	Welch Center Grand Rounds
		340.803 R	X	Welch Center Research in Progress Meetings
		340.855 R	X	Written Comprehensive/Qualifying Exam
		340.871 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		550.630 R	X	Master's Research & Essay/Thesis
<p>2. Describe the risk factors associated with cardiovascular and major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 P	X	Journal Clubs
		340.751 P	X	Welch Center Grand Rounds
		340.803 R	X	Welch Center Research in Progress Meetings
		340.855 R	X	Written Comprehensive/Qualifying Exam
		340.871 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		550.630 R	X	Master's Research & Essay/Thesis

Competencies	Courses		Learning Opportunities and Assessments	
<p>3. Describe the prevalence and societal impact of cardiovascular and major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 P	X	Journal Clubs
		340.751 P	X	Welch Center Grand Rounds
		340.803 R	X	Welch Center Research in Progress Meetings
		340.855 R	X	Written Comprehensive/Qualifying Exam
		340.871 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		550.630 R	X	Master's Research & Essay/Thesis
<p>4. Describe comorbidities and associated complications of cardiovascular and major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 P	X	Journal Clubs
		340.751 P	X	Welch Center Grand Rounds
		340.803 R	X	Welch Center Research in Progress Meetings
		340.855 R	X	Written Comprehensive/Qualifying Exam
		340.871 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		550.630 R	X	Master's Research & Essay/Thesis

Competencies	Courses		Learning Opportunities and Assessments	
<p>5. Describe the symptoms, screening, and diagnosis for cardiovascular and major diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 P	X	Journal Clubs
		340.751 P	X	Welch Center Grand Rounds
		340.803 R	X	Welch Center Research in Progress Meetings
		340.855 R	X	Written Comprehensive/Qualifying Exam
		340.871 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		550.630 R	X	Master's Research & Essay/Thesis
<p>6. Recognize the prevention strategies and treatment and management options for cardiovascular and major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 P	X	Journal Clubs
		340.751 P	X	Welch Center Grand Rounds
		340.803 R	X	Welch Center Research in Progress Meetings
		340.855 R	X	Written Comprehensive/Qualifying Exam
		340.871 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		550.630 R	X	Master's Research & Essay/Thesis

Competencies	Courses		Learning Opportunities and Assessments	
<p>7. Describe and compare various study designs (observational, clinical trials, decision analysis, meta-analysis, health systems research, informatics), explaining their appropriate applications and the methodological challenges associated with each.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P	X	Master's Research & Essay/Thesis
		340.753 P		
		340.754 R		
340.871 R				
<p>8. Describe randomization and the intention-to-treat principles.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P		Master's Research & Essay/Thesis
		340.753 P		
		340.754 R		
340.871 R				

Competencies	Courses		Learning Opportunities and Assessments	
<p>9. Describe issues related to diagnostic testing studies and measurement of exposures and outcomes.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P		Master's Research & Essay/Thesis
		340.753 P		
		340.754 R		
		340.871 R		
<p>10. Recognize ethical and regulatory issues associated with each study design, particularly clinical trials.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P	X	Master's Research & Essay/Thesis
		340.753 P		
		340.754 R		
		340.871 R		

Competencies	Courses		Learning Opportunities and Assessments	
<p>11. Understand and describe high quality measures of exposure and outcome in the study of cardiovascular and major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P	X	Master’s Research & Essay/Thesis
		340.753 P		
		340.754 R		
		340.871 R		
<p>12. Understand and describe analytic techniques for the assessment of exposure-disease associations and control of confounding.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P	X	Master’s Research & Essay/Thesis
		340.753 P		
		340.754 R		
		340.871 R		

Competencies	Courses		Learning Opportunities and Assessments	
<p>13. Understand and describe analytic techniques for the assessment of exposure-disease associations and control of confounding.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P	X	Master's Research & Essay/Thesis
		340.753 P		
		340.754 R		
		340.871 R		
<p>14. Understand and describe the multifactorial nature of cardiovascular and other major chronic diseases and implications for their study in an epidemiologic context and for prevention and treatment of these conditions.</p>		340.607 P	X	Course Work/Exams
		340.613 R	X	Seminars
		340.620 P	X	Journal Clubs
		340.644 P	X	Welch Center Grand Rounds
		340.645 P	X	Welch Center Research in Progress Meetings
		340.660 R	X	Written Comprehensive/Qualifying Exam
		340.687 R	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.752 P	X	Master's Research & Essay/Thesis
		340.753 P		
		340.754 R		
		340.871 R		

Competencies	Courses		Learning Opportunities and Assessments	
<p>15. Critically evaluate study design, analytic methods, data presentation, and conclusions of scientific papers.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis
<p>16. Implement high quality measures of exposure and outcome in the study of cardiovascular and major chronic diseases.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis

Competencies	Courses		Learning Opportunities and Assessments	
<p>17. Implement analytic techniques for the assessment of exposure-disease associations and control of confounding.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis
<p>18. Implement analytic techniques to evaluate causes for cardiovascular and other major chronic disease and discuss the strengths and limitations and implications of these strategies.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis

Competencies	Courses		Learning Opportunities and Assessments	
<p>19. Draw inferences and understand implications of epidemiologic research for public health, clinical care, future research, and policy.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis
<p>20. Communicate effectively across multiple platforms (oral, written, electronic) the results and findings from epidemiologic studies of cardiovascular and major chronic diseases and their implications for policy.</p>		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis

Competencies	Courses		Learning Opportunities and Assessments	
<p>21. Apply analytic techniques in the context of the study of cardiovascular and other major chronic diseases:</p> <ul style="list-style-type: none"> • Descriptive statistics • Quality control, assurance, and evaluation (e.g. CV, measures of Validity and reliability, Bland-Altman plots) • Control of confounding (e.g. stratification, standardization, regression) • Risk prediction (e.g. AUC, C-statistic, NRI) • Evaluation of relative vs absolute risk and population attributable risk measures 		340.607 P	X	Course Work/Exams
		340.644 P	X	Seminars
		340.687 R	X	Journal Clubs
		340.728 R	X	Welch Center Grand Rounds
		340.753 P	X	Welch Center Research in Progress Meetings
		340.754 R	X	Written Comprehensive/Qualifying Exam
		340.820 P	X	Non-thesis Research (Assistantship, Apprentice, etc.)
		340.871 R	X	Master's Research & Essay/Thesis