## Data Template 2.6.1: Courses and activities through which competencies are met

### Epidemiology MS

<table>
<thead>
<tr>
<th>Core Competencies</th>
<th>Courses and other learning experiences by which the competency is met</th>
<th>Assessment of the competency</th>
<th>Recent program changes related to this competency assessment</th>
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</thead>
</table>
| Identify major health issues in the population, and describe these issues in terms of magnitude, person, place, time, and their associated risk factors | • (P) EPIDEM 2110: Principles of Epidemiology  
• (P) EPIDEM 2160: Infectious Disease Epidemiology  
• (P) EPIDEM 2170: Chronic Disease Epidemiology  
• (R) EPIDEM 2260: Epidemiologic Basis of Disease Control  
• (R) EPIDEM 2171: Cancer Epidemiology  
• (R) EPIDEM 2210: Master’s Thesis | • Exam questions in EPI 2110  
• Comprehensive exam | Curricula are evaluated every 3 years in the department. The manner of the assessment of this and all competencies will be reviewed and updated (where appropriate) at the next review in 2015. |
| Identify and locate key sources of data for epidemiologic purposes | • (P) EPIDEM 2110: Principles of Epidemiology  
• (P) EPIDEM 2160: Infectious Disease Epidemiology  
• (R) EPIDEM 2170: Chronic Disease Epidemiology  
• (R) EPIDEM 2210: Master’s Thesis | • Completion of population assignment in EPI 2110  
• Comprehensive exam | Created a separate and more focused Chronic Disease Class (EPIDEM 2170) in 2013. |
| Calculate and interpret basic epidemiology measures | • (P) EPIDEM 2110: Principles of Epidemiology  
• (P) EPIDEM 2160: Infectious Disease Epidemiology  
• (P) EPIDEM 2180: Epidemiologic Methods I  
• (P) EPIDEM 2181: Design of Clinical Trials  
• (R) EPIDEM 2187: Epidemiologic Methods II  
• (R) BIOST 2041: Intro Statistical Methods I  
• (R) BIOST 2042: Intro Statistical Methods II | • Exam questions in EPI 2110 and EPI 2180  
• Thesis defense includes an evaluation form completed by the thesis committee members | Augmented EPIDEM 2180: Epidemiologic Methods I to include an extra credit in 2012 |
| Describe models of disease etiology and control | • (P) EPIDEM 2110: Principles of Epidemiology  
• (P) EPIDEM 2160: Infectious Disease Epidemiology  
• (P) EPIDEM 2180: Epidemiologic Methods I  
• (R) PUBHLT 2011: Essentials of Public Health | • Comprehensive exam | |
| Identify the principles and limitations of public health screening programs | • (P) EPIDEM 2110: Principles of Epidemiology  
• (R) EPIDEM 2260: Epidemiologic Basis of Disease Control  
• (R) EPIDEM 2171: Cancer Epidemiology | • Exam questions in EPI 2110 | |
| Describe research study designs and understand their | • (P) EPIDEM 2110: Principles of Epidemiology  
• (P) EPIDEM 2180: Epidemiologic Methods I | • Exam questions in EPI 2110 and EPI 2180 | Augmented EPIDEM 2180: Epidemiologic Methods I to |
| **application, strengths, and limitations** | • (R) EPIDEM 2181: Design of Clinical Trials  
• (R) EPIDEM 2183: Reading, Analyzing and Interpreting the Medical Literature | • Comprehensive exam  
• Thesis defense | include an extra credit in 2012 |
| **Recognize basic ethical principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data** | • (P) IRB Research Training Modules  
• (R) PUBHLT 2030: Research Ethics  
• (R) EPIDEM 2110: Principles of Epidemiology  
• (R) EPIDEM 2181: Design of Clinical Trials | • Pass IRB modules  
• Thesis defense | Advocated for and supported new school-wide research ethics course (PUBHLT 2030) |
| **Create data files appropriate for data analysis** | • (P) EPIDEM 2185: SAS for Data Management & Analysis  
• (P) EPIDEM 2180: Epidemiologic Methods I  
• (R) EPIDEM 2210: Master’s Thesis | • Thesis defense |  |
| **Conduct basic epidemiologic analyses using descriptive and inferential statistical approaches** | • (P) BIOST 2041: Intro Statistical Methods I  
• (P) BIOST 2042: Intro Statistical Methods II  
• (P) EPIDEM 2180: Epidemiologic Methods I  
• (P) EPIDEM 2181: Design of Clinical Trials  
• (R) EPIDEM 2185: SAS for Data Management & Analysis  
• (R) EPIDEM 2187: Epidemiologic Methods II  
• (R) EPIDEM 2210: Master’s Thesis | • Exam questions in EPI 2180  
• Thesis defense | Developed a new SAS course (EPIDEM 2185) in 2009 tailored to the needs of the Epidemiology students. Epidemiologic Methods I assignments aligned to build upon these skills |
| **Conduct epidemiologic analysis using linear, logistic, Cox, and Poisson regression models** | • (P) BIOST 2042: Intro Statistical Methods II  
• (P) EPIDEM 2180: Epidemiologic Methods I  
• (P) BIOST 2049: Applied Regression Analysis  
• (R) EPIDEM 2181: Design of Clinical Trials  
• (R) EPIDEM 2187: Epidemiologic Methods II  
• (R) EPIDEM 2210: Master’s Thesis | • Exam questions in EPI 2187  
• Thesis defense |  |
| **Interpret epidemiologic results in a causal framework** | • (P) EPIDEM 2110: Principles of Epidemiology  
• (P) BIOST 2041: Intro Statistical Methods I  
• (P) BIOST 2042: Intro Statistical Methods II  
• (P) EPIDEM 2180: Epidemiologic Methods I  
• (P) EPIDEM 2181: Design of Clinical Trials  
• (P) EPIDEM 2187: Epidemiologic Methods II  
• (R) EPIDEM 2160: Infectious Disease Epidemiology  
• (R) EPIDEM 2183: Reading, Analyzing, and Interpreting the Medical Literature | • Exam questions in EPI 2110 and EPI 2187  
• Thesis defense | Augmented EPIDEM 2187: Epidemiologic Methods II to include an extra credit in 2012; notably this extra credit (10.5 hours) focused on causal inference principles |
| Evaluate the strengths and limitations of the epidemiologic literature | (P) EPIDEM 2110: Principles of Epidemiology  
(P) EPIDEM 2181: Design of Clinical Trials  
(R) EPIDEM 2183: Reading, Analyzing, and Interpreting the Medical Literature  
(R) EPIDEM 2210: Master’s Thesis | Comprehensive exam |
| Communicate epidemiologic information to lay and professional audiences | (P) EPIDEM 2210: Master’s Thesis | Thesis defense  
Completion of presentation requirement including a form that the advisor must sign.  
Established presentation requirement for graduation of 1 public presentation of epidemiologic work |
| Demonstrate mastery of a substantive area, including knowledge and application of that knowledge in conducting original research related to the topic | (P) EPIDEM 2210: Master’s Thesis | Thesis defense includes an evaluation form completed by the thesis committee members |

\( P = \text{Primary}, \ R = \text{Reinforcing} \)