Biomedical Informatics Graduate Program (PhD, MS with thesis, MS without thesis)

Learning Objectives for the BMI Health and Clinical Informatics Training Programs:

**Graduate Certificate – Health and Clinical Informatics Major**

At the end of the program, the graduate will be able to:

- Apply informatics theories, methods and tools related to health care in an industrial workplace.
- Exhibit knowledge in the biological, health and clinical information systems domains that are related to the field of health and clinical informatics.
- Identify differences in organizations and personal behaviors that affect the diffusion of informatics technology.
- Adhere to the professional and legal conduct standards of the field of health and clinical informatics.

**MS without thesis (Professional Master’s with capstone project or internship) Health and Clinical Informatics Major**

At the end of the program, the graduate will be able to:

- Apply informatics theories, methods and tools related to personal health, health care, public health, and biomedical research in an industrial workplace.
- Exhibit knowledge in the underlying biological and health domains that are related to the field of health and clinical informatics.
- Identify differences in organizations and personal behaviors that affect the diffusion of informatics technology.
- Adhere to the professional and legal conduct standards of the field of health and clinical informatics.
- Display effective oral and written presentation skills.
- Show competence in use of information technology tools.

**MS with thesis (Research Master’s) Health and Clinical Informatics Major**

At the end of the program, the graduate will be able to:

- Apply informatics theories, methods and tools related to personal health, health care, public health, and biomedical research in an academic setting.
- Exhibit knowledge in the underlying biological and health domains that are related to the field of clinical informatics.
- Evaluate informatics tools and techniques for solving specific biomedical and health problems.
• Adhere to the professional and legal conduct standards of the field of clinical informatics.
• Produce solutions that address academic or industrial needs using informatics tools and knowledge.
• Demonstrate scholarly oral and written presentations.
PhD Health and Clinical Informatics Major

At the end of the program, the graduate will be able to:

- Apply informatics theories, methods and tools related to personal health, health care, public health, and biomedical research in a research setting.
- Exhibit knowledge in the underlying biological and health domains that are related to the field of health and clinical informatics.
- Apply appropriate evaluative tools to the solution of specific biomedical and health informatics problems.
- Adhere to the professional and legal conduct standards of the field of health and clinical informatics.
- Integrate knowledge in a specialized cognate area in order to form a foundation for future research in health and clinical informatics.
- Demonstrate communication skills through scholarly oral presentations and written publications.
- Construct and deliver educational content in clinical informatics to the standards of the department and field.
- Conduct independent research which contributes new knowledge to the field of health and clinical informatics.
Learning Objectives for the BMI Bioinformatics & Computational Biomedicine (BCB) Training Programs:

**MS without thesis (Professional Master’s with capstone project or internship) BCB Major**

At the end of the program, the graduate will be able to

- Apply bioinformatics methods and tools related to genomics, proteomics, biology, and physiology in an industrial workplace.
- Exhibit knowledge in the underlying biological phenomena related to bioinformatics and computational biomedicine.
- Identify statistical analyses which can be used to solve bioinformatics and computational biology problems.
- Adhere to the professional and legal conduct standards of the field of bioinformatics and computational biomedicine.
- Display effective oral and written presentation skills.
- Show competence in use of the computational tools required for work in bioinformatics and computational biomedicine.

**MS with thesis (Research Master’s) BCB Major**

At the end of the program, the graduate will be able to:

- Apply bioinformatics methods and tools related to genomics, proteomics, biology, and physiology in an academic setting.
- Exhibit knowledge in the underlying biological phenomena related to bioinformatics and computational biomedicine.
- Evaluate statistical analyses which can be used to solve bioinformatics and computational biomedicine problems.
- Adhere to the professional and legal conduct standards of the field of bioinformatics and computational biomedicine.
- Produce solutions that address academic or industrial needs using bioinformatics and computational biomedicine tools and knowledge.
- Demonstrate scholarly oral and written presentations
PhD BCB Major

At the end of the program, the graduate will be able to:

- Apply bioinformatics methods and tools related to genomics, proteomics, biology, and physiology in a research setting.
- Exhibit knowledge in the underlying biological phenomena related to bioinformatics and computational biomedicine.
- Apply appropriate statistical analyses and other evaluative tools to the solution of specific problems in bioinformatics and computational biomedicine.
- Adhere to the professional and legal conduct standards of the field of bioinformatics and computational biomedicine.
- Demonstrate communication skills through scholarly oral presentations and written publications.
- Integrate knowledge in a specialized cognate area in order to form a foundation for future research in bioinformatics and computational biomedicine.
- Construct and deliver educational content in bioinformatics and computational biology to the standards of the department and field.
- Conduct independent research which contributes new knowledge to the field of bioinformatics and computational biomedicine.