

Overview of Health Informatics Capstone

Overview of Health Informatics Capstone Project

Purpose: Provide a concise, organized reference for students and faculty preparing, executing, and evaluating a health?informatics capstone.

1. What Is a Capstone in Health Informatics?

Aspect	Description
Definition	A culminating, project?based experience that integrates knowledge from coursework, clinical practice, and informatics theory.
Goal	Demonstrate the ability to identify a real?world health?IT problem, apply informatics methods, and deliver a viable solution or evidence?based recommendation.
Typical Formats	• Software prototype or dashboard • Data?analytics report (e.g., predictive modeling) • Workflow redesign with process?mapping • Policy or standards assessment • Implementation plan for a health?IT system
Stakeholders	Students, faculty advisors, clinical partners, IT vendors, IRB (if human data are used), and potential end?users (clinicians, patients, administrators).

2. Project Lifecycle – Step?by?Step

Phase	Key Activities	Deliverables
1. Initiation	• Choose a problem domain (clinical, public health, administration). • Conduct a brief literature scan. • Secure a sponsor or clinical partner.	• Project charter (problem statement, objectives, scope).

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Phase	Key Activities	Deliverables
	Define research questions and functional requirements.	
2. Planning	- Create a work breakdown structure (WBS). - Develop a timeline (Gantt chart) and risk log. - Obtain IRB/ethical approval if needed. - Identify data sources (EHR, claims, registries, sensors, surveys). - Assess data quality, completeness, and privacy constraints.	Detailed project plan, data?use agreement, ethics approval letter.
3. Data Acquisition & Management	- Perform de?identification / HIPAA compliance steps. - Store data in a secure, documented repository. - Choose appropriate informatics methods (e.g., NLP, machine learning, clinical decision support rules, process mining).	Data dictionary, data?access log, secure storage configuration.
4. Analysis & Development	- Build prototypes, dashboards, or analytical models. - Conduct iterative testing with mock data or sandbox environments. - Define evaluation metrics (accuracy, sensitivity, usability, workflow impact, cost ?benefit).	Code repository, model documentation, prototype screenshots, test?case results.
5. Evaluation	- Perform validation (cross?validation, user?testing, pilot rollout). - Collect qualitative feedback from end?users. - Prepare final written report (APA/AMA style).	Evaluation report, statistical results, usability survey data.
6. Dissemination	- Create a slide deck for oral defense. - Optionally submit a manuscript to a peer ?reviewed journal or conference.	Capstone thesis, presentation deck, optional manuscript.

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Phase	Key Activities	Deliverables
7. Closure	• Archive code, data, and documentation per institutional policy. • Conduct a lessons?learned session with the project team.	• Project archive, lessons?learned summary.

3. Core Competencies Demonstrated

Competency	Example Evidence
Clinical Knowledge	Understanding of the clinical workflow being improved.
Data Literacy	Ability to extract, clean, and transform health data sets.

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