



**MSIE in Healthcare Systems
Engineering**



UCF INDUSTRIAL ENGINEERING &
MANAGEMENT SYSTEMS

MASTER OF SCIENCE IN HEALTHCARE SYSTEMS ENGINEERING

Earn your MS degree online in two years

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COURSE OF STUDY

HSC 6636	Issues in the Health Professions
EIN 6551	Systems Engineering
EIN 6357	Advanced Engineering Economics
EIN 5117	Management Information Systems
ESI 5359	Risk Assessment & Management
ESI 5219	Engineering Statistics
ESI 5531	Discrete Systems Simulation
ESI 6609	IE Analytics in Healthcare
ESI 6224	Quality Management
EIN 5140	Project Engineering (Capstone)

QUICK FACTS

- Fully online degree
- 2 year completion
- 7½ week classes
- Admission three times per year
 - Fall - June 15
 - Spring - November 15
 - Summer - March 15
- Requires 30 credit hours (10 courses)
- No GRE requirement
- Wide range of professional and research opportunities



Our healthcare systems are changing – globally, nationally, regionally, and locally – and much of that change is happening without the support of systems engineers who understand the issues associated with massive systemic change involving a diversity of people and organizations. Many healthcare professionals have significant expertise in their respective healthcare occupations, but often lack expertise in continuously improving the design of systems, processes, or products. A May 2014 study¹ recommended that “the United States build a healthcare workforce that is equipped with essential systems engineering competencies that will enable system redesign.”

The deadline to apply for **Fall 2016** is **June 15**

FOR MORE INFORMATION:

CONTACT A SUCCESS COACH

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& Management Systems
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PROGRAM OVERVIEW

This web-based online masters program in Healthcare Systems Engineering is designed to attract students with a variety of educational backgrounds and keen interest in working in the healthcare field. It provides existing healthcare practitioners, and individuals with an engineering background who are interested in joining the rapidly expanding field of healthcare systems, with models and tools such as quantitative analysis, systems modeling, and computer simulation for effective decision-making in healthcare organizations and systems.

Translating a specific design into an organizational or physical reality in the most effective manner, and with highest possible quality, is the focus of the Industrial Engineering and Management Systems field. This program is tailored to meet the needs of a broad range of working professionals interested in leading healthcare systems engineering and management initiatives. It is the first program of its kind, with no other university currently offering a similar program fully online.

¹ Better Health Care And Lower Costs: Accelerating Improvement Through Systems Engineering, May 2014, President's Council of Advisors on Science and Technology (PCAST)

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Overarching Questions

- How do we **engineer a more effective healthcare system** that promotes individual and population health with maximal quality at minimal intervention, risk, and cost?
- What do industrial engineers need to know, and be able to do, to **enable that engineering to occur across healthcare systems** from individual patients and providers up to social-scale institutions?

Program Themes

- Analyze the healthcare system as a **distributed logistics, transportation, facilities, and services network** in which patients and medical care are brought together across points in the system at **multiple levels of scale and detail**.
- Describe the healthcare system as a vertical integration **serving a cradle-to-grave horizontal market** with parallel systems involving the **actual clinical treatment** of patients vs. the **maintenance of health records**.
- Analyze the direct and **emergent system impacts** of shifts taking place across the healthcare sector, and the changing economics of the globalizing healthcare system.

Highlights

- Curriculum is a **set list of 10 courses**, with no electives planned at this time
- **30 credits** in two years
- All courses are **on-line only** for **7½ week sessions**
- All courses emphasize healthcare-specific areas of interest and concern
- Five classes per year: Fall-A, Fall-B, Spring-A, Spring-B, and Summer
- New students admitted in **Fall-A** and **Spring-A** terms only, expanding over time as program scales

HSC 6636
Issues & Trends in the
Health Professions

August-September 2016

EIN 6551
Systems Engineering

October-November 2016

EIN 6357
Advanced Engineering
Economics

January-February 2017

EIN 5117
Management
Information Systems

March-April 2017

FIRST COHORT

ESI 5359
Risk Assessment &
Management

May-June 2017

ESI 5219
Engineering Statistics

August-September 2017

ESI 5531
Discrete Systems
Simulation

October-November 2017

ESI 6609
Industrial Engineering
Analytics in Healthcare

January-February 2018

ESI 6224
Quality Management

March-April 2018

EIN 5140
Project Engineering
(Capstone)

May-June 2018

Year 1

Year 2

Current Activities

- Marketing
 - Outreach to prospective students and organizations
 - Web-based marketing based on keywords of interest
 - Publications, postings, and webinars through professional societies: HIMSS, IIE, INCOSE

March 1 – April 29

9,526 page views

177 unique info forms

313 OSS inquiries

8 info session signups

Facebook:

404,557 impressions

57,583 people reached

15,218 clicks

3.811% click through

Current Activities

- Marketing
 - Outreach to prospective students and organizations
 - Web-based marketing based on keywords of interest
 - Publications, postings, and webinars through professional societies: HIMSS, IIE, INCOSE
- Curriculum & Pedagogy
 - Adapting courses to the on-line environment
 - Adapting courses to the 7½ week timeframe
 - Broadening courses to include healthcare perspective
- Classes start **August 21st**

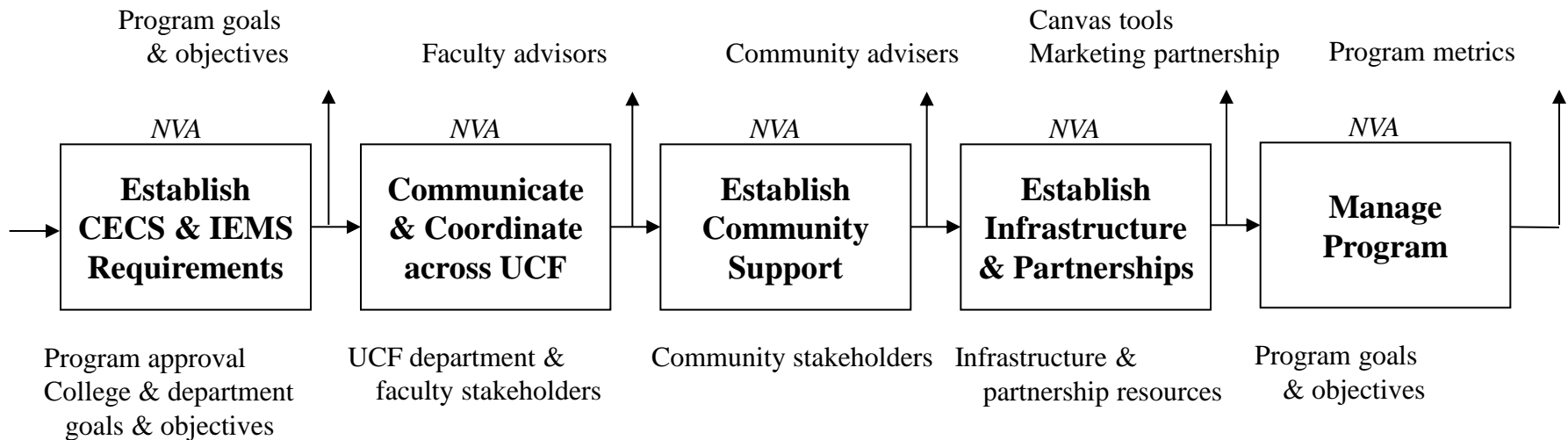


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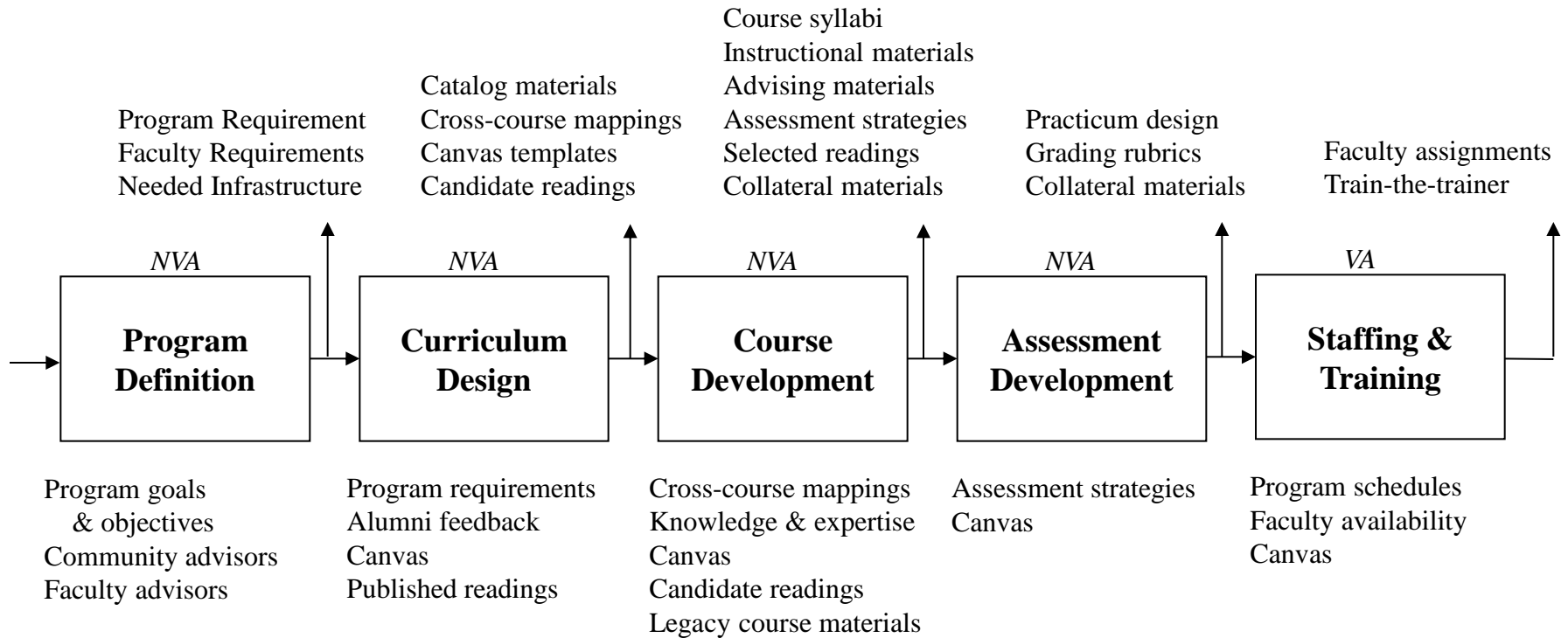
HSE Program Management PMAP



System of Internal Controls
Community & faculty engagement

Key Metrics
Advisory group size & duration

HSE Program Operations PMAP



System of Internal Controls

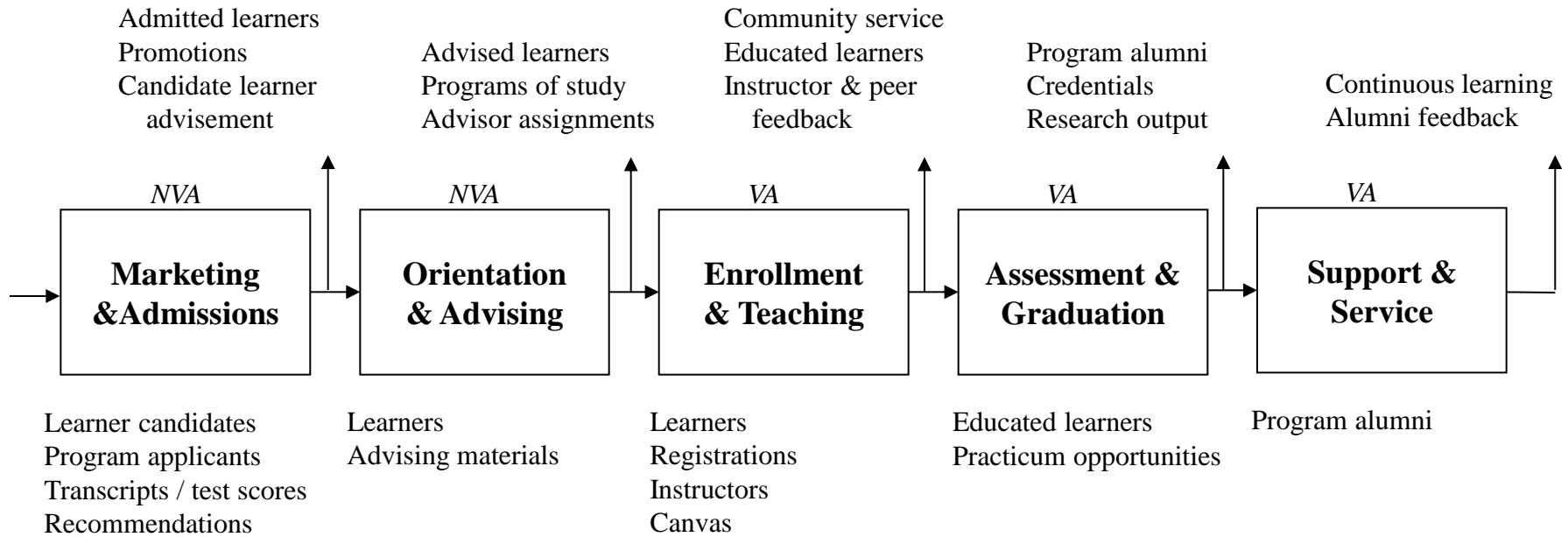
Confirmed faculty assignment lead times

Key Metrics

Course materials completeness & freshness

Faculty-to-course ratios and readiness

HSE Program Execution PMAP



System of Internal Controls

Program advising
Program of study

Key Metrics

Admission ratios, quantitative & qualitative
Course completion rates & levels
Progressions toward practicum & graduation
Market share