IS2020

UPDATING THE MODEL CURRICULUM

IS 2020 -- time for review and revision

IS 2010 (Topi, et al)

IS 2002 (Gorgone, et al)

IS'97 (Longenecker et al)

IS’90 (Longenecker, et al)

DPMA ’86 (DPMA)

IS’81 (Nunamaker, et al)

IS’72 (Teichroew, et al)
IS2020 CURRICULUM TASKFORCE

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<tr>
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<th>Organization</th>
<th>Institution</th>
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PANEL AS PART OF THE IS2020 WORK

- IS2010 approved by ACM/AIS in 2009
- Exploratory committee report published in 04/2018
- IS2020 Task Force initiated in 04/2019
- First panel in AMCIS 08/2019
- First F2F meeting following AMCIS 08/2019
- We are in the very beginning stage
  - all kinds of inputs are valuable!
PANEL SCHEDULE

- Introduction
- Key principles identified by the Exploratory Taskforce guiding the IS2020 efforts
- Articulation of the current (IS2010) model curriculum - issues suggesting updates.
- Current model curriculum trends and movement towards the use of competency models.
- Changing industry expectations: adequacy of IS2010
- IS2020 project schedule and IS2020 as a living document
- Open discussion
- Please feel free to ask/comment at any point!
GUIDING PRINCIPLES (EXPLORATORY TASKFORCE)

The model curriculum should:
1. represent a consensus from the IS community.
2. be designed to help IS programs produce competent and confident entry-level graduates well suited to workplace responsibilities.
3. guide but not prescribe.
4. be flexible and adaptable to most IS programs.
5. not be restricted to a specific application domain.
6. determine whether the model curriculum must have a core of content that is common to all IS programs globally.
7. not focus on specific issues related to pedagogy.
8. be coordinated and aligned with CC2020.
Seven Core Courses recommended by IS2010

1. Foundations of Information Systems
2. Data and Information Management
3. Enterprise Architecture
4. IS Project Management
5. IT Infrastructure
6. Systems Analysis and Design
7. IS Strategy, Management, and Acquisition
Website Data from 34 top ranked Info. Systems Departments

1. Foundations of Information Systems (97% required, 3% elective)
2. Data and Information Management (91% required, 9% elective)
3. Enterprise Architecture (24% required, 12% elective, 64% not evident)
4. IS Project Management (35% required, 24% elective, 41% not evident)
5. IT Infrastructure (35% required, 24% elective, 41% not evident)
6. Systems Analysis and Design (38% required, 24% elective, 38% not evident)
7. IS Strategy, Management, and Acquisition (41% required, 18% elective, 41% not evident)
Should any of these topics be a core course?

- Application Development (currently Elective)
- Data Networks and Computer Architecture (currently Elective)
- Data Analytics
- Human Computer Interaction/User Experience
- Security
- Role of IS in Society
- Emerging technologies
- Digitalization / Innovation
- Others?
ABET CURRICULUM GUIDELINES FOR INFORMATION SYSTEMS

ABET curriculum requirements specify topics, but do not prescribe specific courses.

These requirements are:

a. At least 30 semester credit hours (or equivalent) that include coverage of fundamentals and applied practice in application development; data and information management; information technology infrastructure; systems analysis, design and acquisition; project management; and the role of information systems in organizations.

b. At least 15 additional semester credit hours (or equivalent) of a cohesive set of topics that provide an understanding of an information systems environment.

c. Quantitative analysis or methods that must include statistics.
VALUE OF MODEL CURRICULA FOR IS

- Help build IS program curriculum using best practices
  - Program Learning Outcomes
  - Courses and Sequence
- Help to ensure some consistency across different programs
- Accelerate the process of designing curriculum
PREVIOUS APPROACHES

- IS curricula (IS 2002, IS 2010, MSIS 2000, and MSIS 2006) have been represented mainly through courses: Core and Electives
  - For each course learning objectives and topics are defined
  - Emphasis on a course-specific view
    - IS 2010: Specified program-level graduate capabilities at a high level of abstraction, but no mapping to the course level

Source: MSIS 2016: Global Competency Model for Graduate Degree Programs in Information Systems
LEARNING OUTCOMES AND COMPETENCIES

▸ What is a Learning Outcome (LO)?
  ▸ “relate to the knowledge, skills, and behaviours that students acquire as they progress through the program” (ABET)
  ▸ Example: Acquire system requirements specification skills

▸ What is a Competency (CE)?
  ▸ “Competencies represent a dynamic combination of cognitive and metacognitive skills, demonstration of knowledge and understanding, interpersonal, intellectual and practical skills, and ethical values”. (Lockoff et al. 2010)
  ▸ What an individual is able to *DO* on completing a course (Ilse Baumgartner and Venky Shankararaman. 2013)

▸ CC2020 - Competencies = Knowledge (K) + Skills (S) + Dispositions (D)
  Competency Leaf Framework (Frezza et al., 2018) In the context of a competency, a disposition helps to order knowledge and skill in context; to connect the ability (knowledge and skill) with the follow-through of the appropriate behaviour.
AMCIS 2019 PANEL ON THE IS2020 MODEL CURRICULUM

COMPETENCY MODEL BASED APPROACHES

A common European framework for ICT Professionals in all industry sectors
http://www.ecompetences.eu/

Skills Framework for the Information Age
https://www.sfia-online.org/en/framework/sfia-7

Tool for career exploration and job analysis
https://www.onetonline.org/

Skills framework for career exploration and job analysis
https://www.skillsfuture.sg/skills-framework/ict

Source: MSIS 2016: Global Competency Model for Graduate Degree Programs in Information
MSIS2016 Competency Model

Source: MSIS 2016: Global Competency Model for Graduate Degree Programs in Information Systems
INDUSTRY EXPECTATIONS AND IS 2010 GAP ANALYSIS

- Alignment with industry competency models and competency frameworks
  - SFIA, eCF, Competency Model Clearinghouse, O*Net Job Skills Survey, SkillsFuture, Korn Ferry Leadership Architect
- Alignment with industry shift towards strong technical skills
- Technical depth and mastery
- IS2020 should be responsive to change
- Create a living document
- Monitor the technology environment
INDUSTRY EXPECTATIONS AND IS 2010 GAP ANALYSIS

- IS2020 should align with performance outcomes
  - What competencies area associated with high performing IS employees?
- IS2020 should serve as a foundation for research
  - Support a multitude of research streams
PRELIMINARY SCHEDULE

▸ First F2F meeting following AMCIS Aug. 2019
▸ Second panel in SIGEd conference, Munich Dec. 14th 2019
▸ Second F2F meeting in Munich Dec. 2019
▸ 1-2 additional panel presentations during 2020
▸ Target: first version of guidelines by Dec. 2020 @ ICIS 2020
▸ IS2020 as a living document
IS2020 AS A LIVING DOCUMENT

- **Purpose:** Designing IS2020 as a ‘living artifact’, to be continuously updated based on ongoing insights and developments from academic and professional communities.

- **Initial ideas/questions:**
  - Interactive digital platform/forum/apps?
  - Annual panels in academic/professional conferences?
  - Permanent joint committee?
  - Integration with e.g. CC2020 and MSIS2016?
  - Other?
FEEDBACK AND QUESTIONS?
HOW TO FOLLOW UP OUR WORK?

IS2020.org

Comment/feedback tool coming soon to contribute to this process.