
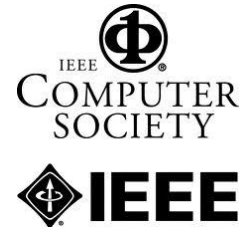


Update: Joint  &  
Computing Curricula  
Computer Science 2013



Beth Hawthorne

Ron Dodge

Remzi Seker



# Important Milestones

- February 2012 – **Strawman Draft release**
  - **Comment period open**
- June 2012 – CISSE
- June 2012 – ACM Education Council
- July 15, 2012 – Comment period closed
  - [www.cs2013.org](http://www.cs2013.org)
- February 2013 – **Ironman release**
- July 15, 2013 – Comment period closed
- December 2013 – **Final Guidelines**



**UNDERGRADUTE  
COMPUTER SCIENCE  
BODY OF KNOWLEDGE**

Strawman Draft

# 18 Knowledge Areas

1. AL - Algorithms and Complexity
2. AR - Architecture and Organization
3. CN - Computational Science
4. DS - Discrete Structures
5. GV - Graphics and Visual Computing
6. HC - Human-Computer Interaction
7. **IAS - Information Assurance and Security**  
**<new>**
8. IM - Information Management
9. IS - Intelligent Systems

# 18 Knowledge Areas cont'd

10. NC - Networking and Communication
11. OS - Operating Systems
12. PBD - Platform-based Development
13. PD - Parallel and Distributed Computing <new>
14. PL - Programming Languages
15. SDF - Software Development Fundamentals
16. SE - Software Engineering
17. SF - Systems Fundamentals
18. SP - Social and Professional

## 2 Groups of IAS Topics

- Topics germane to **new** Information Assurance and Security KA
- IAS topics integrated into other KAs

	Core Tier-1	Core Tier-2	Electives
Germane	2	6	Y
Integrated	23	46	Y
<b>Total Hours</b>	<b>25</b>	<b>52</b>	

# IAS KA

Topics	Core Tier-1	Core Tier-2	Electives
Fundamental Concepts	1	2	N
Network Security	1	4	N
Cryptography			Y
Risk Management			Y
Security Policy and Governance			Y
Digital Forensics			Y
Security Architecture & Systems Administration			Y
Secure Software Design & Engineering			Y

# IAS Integrated other KAs

KA/Topic	Core Tier-1	Core Tier-2	Electives
OS/Overview of OS	1		
OS/OS Principles	1		
OS/Concurrency		3	
OS/Scheduling and Dispatch		3	
OS/Memory Management		1	
OS/Security and Protection		2	
OS/Virtual Machines			Y
OS/Device Management			Y
OS/File Systems			Y
OS/Real Time and Embedded Systems			Y
OS/Fault Tolerance			Y

# IAS Integrated other KAs cont'd

KA/Topic	Core Tier-1	Core Tier-2	Include Electives
OS/System Performance Evaluation			Y
NC/Introduction	1.5		
NC/Networked Applications	1.5		
NC/Reliable Data Delivery		2	
NC/Routing and Forwarding		1.5	
NC/Local Area Networks		1.5	
NC/Resource Allocation		1	
NC/Mobility		1	
PBD/Web Platforms			Y
PBD/Mobile Platforms			Y
PBD/Industrial Platforms			Y
IM/Information Management Concepts		2	

# IAS Integrated other KAs cont'd

KA/Topic	Core Tier-1	Core Tier-2	Electives
IM/Transaction Processing			Y
IM/Distributed Databases			Y
PL/Functional Programming		2	
PL/Type Systems	1	4	
PL/Language Translation & Execution	1	3	
PD/Parallelism Fundamentals	1		Y
PD/Communication & Coordination	1	3	
SDF/Development Methods	9		
SE/Software Processes	1		
SE/Software Project Management		3	
SE/Tools and Environments		1	
SE/Software Construction		2	
SE/Software Verification Validation		3	

# IAS Integrated other KAs cont'd

KA/Topic	Core Tier-1	Core Tier-2	Electives
IS/Reasoning Under Uncertainty			Y
SP/Professional Ethics	2	I	
SP/Intellectual Property	2		
SP/Security Policies, Laws & Computer Crimes			Y
HCI/Human factors & security			Y

# Course Exemplars

- CS2013 steering committee soliciting course exemplars for possible inclusion
- Template to complete
  - hardcopy handout
  - email for electronic version
- Email either Ron or Beth Hawthorne by August 1, 2012 with completed exemplar
  - [Ron.Dodge@usma.edu](mailto:Ron.Dodge@usma.edu)
  - [ehawthorne@acm.org](mailto:ehawthorne@acm.org)



**QUESTIONS**

**[WWW.CS2013.ORG](http://WWW.CS2013.ORG)**