

# Interdisciplinary Ph. D. Program in Information Security

## Area A. Required courses (8)

Four technical courses:

- --- CS 52600 Information Security or C&IT 55500 Advanced Network Security
- --- CS 55500 Cryptography
- --- CS 62600 Advanced Information Assurance
- --- CS 65500 Advanced Cryptology—or equivalents

Two philosophical/ethical courses:

- --- PHIL 52400 Contemporary Ethical Theory and
- --- PHIL 58000 Proseminar in Philosophy—or equivalents; e.g. TECH 62100 Information Assurance Ethics

Two political/social courses:

- --- POL 62000 Proseminar in Public Policy and
- --- TECH 62100 Technology and Policy

### Area B. Recommended courses

Any eight	courses	not taken	in	Area	Δ.

89500 Advanced Quantitative Methods For Decision Making Under Uncertainty 89100 Research in Agricultural Economics 89100 Resourch in Agricultural Economics 89100 Button and Security 89101 Foundations in Homeland Security 89101 Foundations in Homeland Security 89101 Contemporary Issues in Transportation 89101 Security 89101 Contemporary Issues in Transportation 89101 Security 89101 Security 89101 Security 89101 Network Security & Security 89101 Contemporary Issues in Transportation 89101 Security 89101 Network Security & Security 89101 Security 89101 Contemporary Issues in Transportation 89101 Network Security & Security 89101 Network Security & Security 89101 Security 89101 Contemporary Issues in Transportation 89101 Network Security & Security 89101 Network Security & Security 89101 Contemporary Issues in Transportation 89101 Network Security & Security Sec	AGEC	59600	Forensic Economics I		59000F	TC Fault-tolerant Computer System Design
B8100   Research in Agricultural Economics   B8100   Consumer Behavior Theory   Seminar On Topics in Computer Sciences   Semonar Consumer Behavior Theory   Seminar Consumer Paleavior Theory   Seminar Computer Sciences   Semonar Consumer Behavior Theory   Seminar Computer Sciences   Semonar Computer Architecture   Semonar Computer Architecture   Semonar Computer Systems   Semonar Computer System		60800	Benefit-Cost Analysis		62600	Advanced Information Assurance
Making Under Uncertainty   65500   Advanced Cryptology   590001   590001   Feature in Agricultural Economics   590001		68500	Advanced Quantitative Methods For Decision		63600	
Service   Serv			Making Under Uncertainty			Advanced Cryptology
Second		<mark>69100</mark>	Research in Agricultural Économics		69000+	
Second Security   Se	ASM	59100A		CSR	-	· · · · · · · · · · · · · · · · · · ·
Homeland Security 57300 Foundations in Homeland Security 58100 Contemporary Issues in Transportation Security Security 45500 Metwork Security 45500 Wireless Network Security & 45500 Wireless Network Security & 45500 Wireless Network Security & 45500 Information Security Risk Assessment 55800 Information Security Risk Assessment 15500 Advanced Cyberforensics 558100AIS Applied Intelligent Systems 58100C Applied Cryptography 58100C Applied Cryptography 58100C Applied Cryptography 58100C Applied Intelligent Systems 58100S Information Security Management 62300R Risk and Technology 62300NLS Nat Lang Info Assur & Sec Sem COM 51200 Theories Of Interpersonal Communication Fessearch 62300 Small Group Communication Research 62300 Special Topics In Mass Communication Research 62400 Porgramming for the Internet 62500 Special Topics In Mass Communication Research 62500 Porgramming Languages 62500 Special Topics In Mass Communication Research 62500 Research 62500 Special Topics In Mass Communication Research 62500 Special Topics In Mass Communication Research 62500 Special Topics In Mass Communication Research 62500 Research 62500 Special Topics In Mass Communication 62500 Special Topics In Mass Communication				ECE	56500	•
AT         57300         Foundations in Homeland Security         57400         Software Engineering Methodology           68100         Contemporary Issues in Transportation Security         68200         Machana Data Mining           45500         Network Security & Management         ECET         52500         Applications in Forensic Engineering Technology           49900C         Oyberforensics: Advanced Technical Issues Information Security Risk Assessment         ECON         68200         Natural Language Process ing (LING 68900)           55700         Advanced Cyberforensics: Advanced Technical Issues Integration         ECON         6800         Malary Language Process (LING 68900)           55800         Information Security Risk Assessment         53200         Came Theory         Game Theory           55800         Bioinformatics Computing And Systems Integration         55700         Foundations in Homeland Security (ASM 59000)         55800         Conditions in Homeland Security (ASM 59000)         57700         Human Factors in Engineering Process           58100C         Applied Crypfography         67400         Copt Com Mth Prod Onth         Human Factors in Engineering Process           58100S         Information Security (ASM 59000)         IT         54800         Human Factors in Engineering Of Interactive Software           58100S         Information Security (ASM 59000)         M						·
Security Security Security A5500 Maria Scale Digital Device Forensics A5500 Metwork Security A5500 Wireless Network Security & ECCT 52500 Applications in Forensic Engineering Technology A5500 Metwork Security & ECON 60600 Microeconomic Theory I A5500 Management A5500 Management A5500 Basic Computer Forensics A5500 Basic Computing Communication A5500 Basic Communic	AT	57300	•		57400	
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45500 Network Security 4 45600 Wireless Network Security 8 45600 Security Risk Assessment 8 552800 Information Security Risk Assessment 1 55600 Basic Computer Forensics 55700 Advanced Cyberforensics 55700 Advanced Cyberforensics 55700 Advanced Cyberforensics 55800 Bioinformatics Computing And Systems 16197700 Applied Intelligent Systems 558100-12 Applied Intelligent Systems 65800 Foundations in Homeland Security 17 58100 Foundations in Homeland Security (ASM 59000) LING 50000 Introduction to Linguistics 5100 Single Intelligent Systems 58100AS I Applied Intelligent Systems 68100Z Programming for the Internet 62300R Risk and Technology 62300R Risk and Techn	CNIT	42100	Small Scale Digital Device Forensics	<b>ECET</b>	52500	Applications in Forensic Engineering
Management   61000   Game Theory		45500	<del>_</del>			
Management   61000   Game Theory		45600	Wireless Network Security &	<b>ECON</b>	60600	
49900C Cyberforensics: Advanced Technical Issues   ENGL   62800   Natural Language Process   52800   Information Security Risk Assessment   IE   53000   Quality Control   Reliability   S3200			•			
52800   Information Security Risk Assessment   IE   53000   Quality Control		49900C	Cyberforensics: Advanced Technical Issues	<b>ENGL</b>	62800	•
55600   Basic Computer Forensics   53200   Reliability		52800	<del>-</del>	ΙE	53000	
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55800   Bioinformatics Computing And Systems   1ntegration   1ntegration   58100AlS Applied Intelligent Systems   55900\$   Human Factors in Engineering		55700	·		54800	
58100AIS Applied Intelligent Systems       65900 Human Aspects of Computing         58100C Foundations in Homeland Security       IT 54500 Biometrics Technology And Applications Syntax I: Syntactic Analysis Semantics         58100 Applied Cryptography       658100 Applied Cryptography       52100 Syntax I: Syntactic Analysis Semantics         58100 Applied Cryptography       58100 Current Topics in Cyber Forensics Station Systems       58100 Semantics         58100 Current Topics in Cyber Forensics Station Verrent Topics in Cyber Forensics Stations       MGMT Stational Language Process (ECE 66900)         58100 Current Topics in Cyber Forensics Station Stations       MGMT Stational Language Process (ECE 66900)         62300 NLS Nat Lang Info Assur & Sec Sem       OBHR 68100 Behavior Organization         62300 Theories Of Interpersonal Communication Technology Stational Communication Research       PHL Stational Languages         55800 Historical Trends In Mass Communication Research Stational Communication Research Policy Proseminar In Science, Technology, And Politics Processinar In Science, Technology, And Politics Processinar In Science, Technology And Politics Processinary In Science Pro		55800	Bioinformatics Computing And Systems		55900§	Cognitive Engineering Of Interactive Software
58100AIS Applied Intelligent Systems       65900 Human Aspects of Computing         58100C Foundations in Homeland Security       IT 54500 Biometrics Technology And Applications Syntax I: Syntactic Analysis Semantics         58100 Applied Cryptography       658100 Applied Cryptography       52100 Syntax I: Syntactic Analysis Semantics         58100 Applied Cryptography       58100 Current Topics in Cyber Forensics Station Systems       58100 Semantics         58100 Current Topics in Cyber Forensics Station Verrent Topics in Cyber Forensics Stations       MGMT Stational Language Process (ECE 66900)         58100 Current Topics in Cyber Forensics Station Stations       MGMT Stational Language Process (ECE 66900)         62300 NLS Nat Lang Info Assur & Sec Sem       OBHR 68100 Behavior Organization         62300 Theories Of Interpersonal Communication Technology Stational Communication Research       PHL Stational Languages         55800 Historical Trends In Mass Communication Research Stational Communication Research Policy Proseminar In Science, Technology, And Politics Processinar In Science, Technology, And Politics Processinar In Science, Technology And Politics Processinary In Science Pro			Integration		57700§	Human Factors in Engineering
S8100   Foundations in Homeland Security (ASM 59000)   LING 50000   Introduction to Linguistics   Introduction to Linguistics   S8100   Managing Resources and Applications for Homeland Security (ASM 59000)   S3100   Syntax I: Syntactic Analysis   Semantics   Lexical and Sentential   Semantics   Semantic		58100AIS	S Applied Intelligent Systems			
S8100   Foundations in Homeland Security (ASM 59000)   LING 50000   Introduction to Linguisitics   S9100   Syntax   Sy		58100C	Applied Cryptography		67400	Cpt Com Mth Prod Cntrl
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S8100   Managing Resources and Applications for Homeland Security (ASM 59000)   53100   Syntax I: Syntactic Analysis for Homeland Security (ASM 59000)   53100   Semantics I: Lexical and Sentential Semantics			(ASM 59000)	LING	50000	
58100ASI Applied Intelligent Systems   58100S   Information Security Management   58100V   Current Topics in Cyber Forensics   58100V   Programming for the Internet   58100V   Programication Security for Managers   Policial Trends of Interpressonal Communication   Phill   Phill   Programming Interpretation   Phill   Programming Interpretation   Phill   Programming Interpretation   Policial Interpretation		58100	Managing Resources and Applications		52100	
S8100V			for Homeland Security (ASM 59000)		53100	Semantics I: Lexical and Sentential
S8100V   Current Topics in Cyber Forensics   S8100Z   Programming for the Internet   58100Z   Programming Languages   58100Z						Semantics
S8100Z   Programming for the Internet   62300R   Risk and Technology   62300NLS   Nat Lang Info Assur & Sec Sem   OBHR   68100   Behavior Organizations   Behavior Organizations   Behavior Organizations   Behavior Organizations   Behavior Organizations   Did to the content of the content organizations   Did to the content organization   Did to the content organizations   Did to the content organiz		58100S	Information Security Management		68900	Natural Language Process (ECE 66900)
62300R Risk and Technology 62300NLS Nat Lang Info Assur & Sec Sem COM 51200 Theories Of Interpersonal Communication 51800 Theories Of Persuasion 52000 Small Group Communication 55800 Historical Trends In Mass Communication Research 57400 Organizational Communication 63200 Special Topics In Mass Communication 53600\$ Data Communication and Computer Networks 56500 Programming Languages 58000 Algorithm Design, Analysis, and Individual Behavior in Organizations 68300 Individual Behavior in Organizations Contemporary Ethical Theory 68300 Individual Behavior in Organizations 68400 Contemporary Ethical Theory 68400 Seminar in Philosophy 62400 Seminar in Ethics 62400 Proseminar In Science, Technology, And Politics 62100 Proseminar In Science, Technology 62100 Proseminar In Science, Technology 62100 Proseminar In Science, Technology 62				MGMT	54700§	Computer Communication Systems
COM 51200 Theories Of Interpersonal Communication 51800 Theories Of Persuasion PHIL 52400† Contemporary Ethical Theory 52000 Small Group Communication FS800 Historical Trends In Mass Communication Research POL 62000 Proseminar in Philosophy S5900 Current Trends In Mass Communication Research PSY 55500\$ Cognitive Engineering Of Interactive Software PSY 55000 Operating Systems S63000 Detail Topics In Mass Computer Networks S8000 Algorithm Design, Analysis, and Implementation Topics In Computer S09000† Topics In Computer Sciences S1700 Design of Experiments S1700 Design of Experiments S1700 Statistical Inference					59000	Forensic Accounting
COM 51200 Theories Of Interpersonal Communication 51800 Theories Of Persuasion PHIL 52400† Contemporary Ethical Theory 52000 Small Group Communication F5800 Historical Trends In Mass Communication Research POL 62000 Proseminar in Philosophy 62400 Seminar in Ethics Proseminar In Science, Technology, And Politics Policy Proseminar In Science, Technology, And Politics Proseminar In Science, T					68400	Information Security for Managers
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52000 Small Group Communication 55800 Historical Trends In Mass Communication Research FOL	COM					
S5800				PHIL	52400†	Contemporary Ethical Theory
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Color Key

If Course Title Relevant

Last Revised 11/6/13

TECH 58100 Workshop In Technology

#### Area C. Elective Courses

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•	ii course				
AT	57300 <mark>58100</mark>	Foundations in Homeland Security	FNR IT	55800 50700	Digital Remote Sensing and GIS
	<u>36 100</u>	Contemporary Issues in Transportation Security	11	50700	Measurement and Evaluation in Industry and Technology
COM	61000	Seminar: Special Topics in Rhetorical	LING	50000	Introduction to Linguistics
		Studies		53100	Semantics I: Lexical And Sentential
	61200	Seminar: Special Topics In Interpersonal			Semantics
		Communication		53200	Semantics II: Formal And Grammatical
	61800	Seminar: Special Topics In Persuasion			Semantics
		Theory	MGMT	50500	Management Accounting II
	67400	Seminar: Special Topics In Organizational		50600	Auditing
		Communication		54400	Database Management Systems
	67600	Seminar: Special Topics in Health		54500	Systems Development
		Communication			Logistics
CS	50200	Compiling and Programming Systems			Directed Readings In Management
	54100	Database Systems		59000	Digital Game Design Techniques
	54200	Distributed Database Systems		60000	3
	57300	Data Mining		60100	Managerial Accounting
ECE	54400	Digital Communications		63000	Legal and Social Foundations of
	56200	Introduction to Data Management		00000	Management
	56500	Computer Architecture	OBLID	68300	Princ of Info Systems
	56600	CISC Microprocessor System Design	OBHR	64200	
	57000	Artificial Intelligence		64300	Comp And Reward Sys II
	57300	Compilers And Translator Writing		66300	Sem In Orgnztn Theory
	63200	Systems Machine Learning & Data Mining	PSY	66700 55600	Team Work
ECET		Machine Learning & Data Mining	P51	57900	Job Design Human Factors Laboratory
ECON	67600	Selected Topics in Sensors Economics of Uncertainty and		57900	Human Factors Laboratory
LCON	07000	Information I	CNIT	62300	Research Methods for Computing
	67700	Economics of Uncertainty and			64600) (Beginning Fall 2013)
	51100	Information II	(1 chiace	.5 1 _ 011	ofood, (beginning I all 2010)
EDCI	64400	Legal Issues in Career and Technical			
		Education			

Any course from Area B above, not taken to satisfy Area B requirement, can be taken in Area C.

Courses from at least five different graduate programs should be taken among Areas A, B, and C. Five graduate courses must constitute a declared and approved meaningful sub-concentration.

§ Note: May take one or the other of the following but not both:

CS 53600 or MGMT 54700 PSY 57700 or IE 57700 PSY 55500 or IE 55900

† When content is appropriate

#### Specific departmental requirements

- Students graduating via the Department of Communication must satisfy that department's requirements for the Masters' degree in Information Security, take COM 60000 and COM 60100 and make sure that they earn a minimum of 12 graduate credits in Communication;
- Students graduating via Technology must satisfy that department's requirements for the Masters' degree in Information Security;
- Students graduating via Linguistics must take LING 53100 and LING 68900: Natural Language Processing.

Last Revised 11/6/13 Color Key