CIS MAJORS' OPINIONS OF GAINS IN KNOWLEDGE AND INTEREST IN IT SECURITY TOPICS

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INTRODUCTION

How much does a CIS Major (student) learn during their college degree experience about individual CIS topics and how has their knowledge of these topics changed during this experience?

Which CIS topics is a CIS Major "interested in" during their college degree experience and how has their personal interest in these topics changed during this time?

Also, what are the CIS Faculty estimates of what CIS Majors know and are interested in?

These three questions are the bases of this survey-based research, which compares and analyzes the perceptions and opinions of the following groups:

- "beginning" CIS majors in an early CIS class
- "finishing" CIS majors in the CIS Capstone class
- CIS Faculty.

The survey listed eight different CIS topics (listed here alphabetically): Computer Security, Data Base Management Systems, Decision Support Systems, Programming, Systems and Systems Theory, Systems Design and Development, Telecommunications, WEB Sites and E-Commerce

The CIS majors were asked to give their opinion/perception of their "current knowledge" and also their "personal interest" of and in the topic. Faculty were asked to estimate the Current Knowledge and Personal Interest in each topic of the CIS Majors as a group.

All data is self reported perceptions and opinions. No tests of knowledge or competency were included.

The results could be used for CIS Department self-evaluation of the curriculum, in re discussions of student perceptions and expectations of CIS topics, and for CIS major "assessment" analysis.

This is a work in progress.

A. THE SURVEY INSTRUMENT AND SURVEY STATISTICS

Date: _____ Class (e.g., CIS 283)_____ Your Major: _____

CIS MAJORS' OPINIONS OF CURRENT KNOWLEDGE AND PERSONAL INTEREST IN SELECTED "CIS/INFORMATION TECHNOLOGY (IT)" TOPICS

- Answer each question with one number, using a scale of 1 through 9.
- 1 meaning "very little" and 9 meaning "very much".
- There are no right or wrong answers!
- Just please give your best opinion of the topic and question asked.
- If you are now nothing about the topic, leave column blank.

	Your Current Knowledge of Topic	**Your Personal Interest in Topic**
Application System Controls		
Building and Physical Security		
Disaster Recovery		
Encryption and Decryption		
Identity Theft		
Off-Premise Backup		
On-line Security		
Operational Security		
Privacy Law and Issues		
Sarbanes-Oxley Law		
Viruses and Virus Protection		
VOIP Security		
Wireless Security		

SURVEY STATISTICS

"BEGINNING": Students in CIS 283 who were CIS majors: Number = 24
"FINISHING": Students in CIS 490, all of which are CIS majors: Number = 7
Total Students Surveyed = 31

B. THE CIS CURRICULUM AT CAL STATE UNIVERSITY LOS ANGELES

CIS 100 Introduction to Information Systems
CIS 283 Introduction to Programming
CIS 301 Introduction to Information Systems
CIS 405A Data Base Management Systems
CIS 405B Systems Analysis and Design
CIS 410 Computer Hardware and Software
CIS 461 WEB Design
CIS 484 Telecommunications
CIS 490 CIS Capstone Course

Note that a course directly on the topic of Security is not offered.

C. SUMMARY OF DATA COLLECTED:
CIS MAJORS' ESTIMATES OF
"CURRENT KNOWLEDGE OF IT SECURITY TOPICS"

All Charts are "ordered" in descending order from highest to lowest score

CHART 1: BEGINNING CIS MAJORS

	Score	Rank
Viruses & Virus Protection	4.9	1
Wireless Security	4.3	2
Disaster Recovery	4.2	3
Sarbanes-Oxley Law	4.1	4
On-Line Security	4.0	5
Application Systems Controls	4.0	5
Identity Theft	3.7	7
Operational Security	3.6	8
Off-Premise Backup	3.3	9
Encryption & Decryption	3.0	10
VOIP Security	3.0	10
Building & Physical Security	3.0	10
Privacy Laws & Issues	2.8	13
AVERAGE:	3.7	

CHART 2: FINISHING CIS MAJORS

	Score	Rank
Wireless Security	5.4	1
Disaster Recovery	5.3	2
Viruses & Virus Protection	5.3	2
Off-Premise Backup	4.9	4
Encryption & Decryption	4.9	4
Operational Security	4.5	6
On-Line Security	4.1	7
Building & Physical Security	4.0	8
Identity Theft	4.0	8
Sarbanes-Oxley Law	4.0	8
Application Systems Controls	3.5	11
VOIP Security	2.9	12
Privacy Laws & Issues	2.4	13
AVERAGE:	4.2	

CHART 3: BEGINNING v. FINISHING CIS MAJORS:

	BEGINNING CIS Majors	FINISHING CIS Majors	DIFF	% DIFF	RANK
Encryption & Decryption	3.0	4.9	+ 1.9	64	1
Off-Premise Backup	3.3	4.9	+ 1.6	48	2
Wireless Security	4.3	5.4	+ 1.1	26	3
Disaster Recovery	4.2	5.3	+ 1.1	26	3
Building & Physical Security	3.0	4.0	+ 1.0	33	5
Operational Security	3.6	4.5	+ 0.9	25	6
Viruses & Virus Protection	4.9	5.3	+ 0.4	8	7
Identity Theft	3.7	4.0	+ 0.3	8	8
On-Line Security	4.0	4.1	+ 0.1	3	9
Sarbanes-Oxley Law	4.1	4.0	- 0.1	-2	9
VOIP Security	3.0	2.9	- 0.1	-3	9
Privacy Laws & Issues	2.8	2.4	- 0.4	-14	11
Application Systems Controls	4.0	3.5	- 0.5	-13	12
AVERAGE:	3.7	4.2	+ 0.5	14	

D. SUMMARY OF DATA COLLECTED
CIS MAJORS' ESTIMATES OF
"PERSONAL INTEREST IN IT SECURITY TOPICS"

All Charts are "ordered" in descending order from highest to lowest score

CHART 4: BEGINNING CIS MAJORS

	Score	Rank
On-Line Security	7.9	1
Wireless Security	7.8	2
Identity Theft	7.8	3
Viruses & Virus Protection	7.7	4
Encryption & Decryption	7.6	5
Disaster Recovery	7.5	6
Operational Security	7.4	7
Application Systems Controls	7.4	7
Off-Premise Backup	7.0	9
VOIP Security	6.8	10
Building & Physical Security	6.4	11
Sarbanes-Oxley Law	6.0	12
Privacy Laws & Issues	5.9	13
AVERAGE:	7.2	

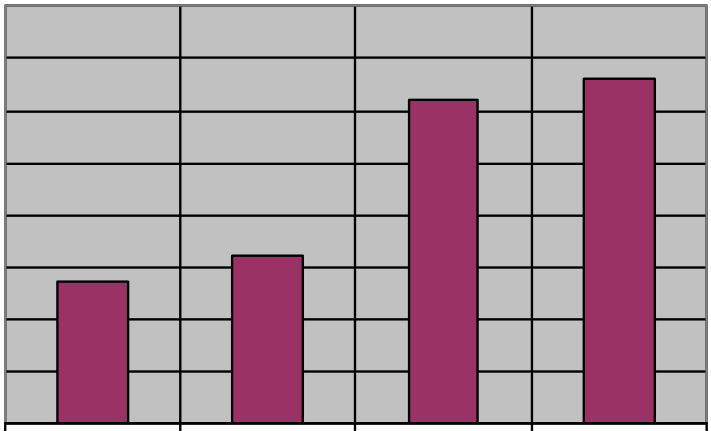
CHART 5: FINISHING CIS MAJORS

	Score	Rank
On-Line Security	9.0	1
Viruses & Virus Protection	8.8	2
Wireless Security	8.7	3
Disaster Recovery	8.5	4
Operational Security	8.5	4
Building & Physical Security	8.0	6
Identity Theft	7.3	7
VOIP Security	7.3	7
Encryption & Decryption	7.2	9
Off-Premise Backup	6.8	10
Sarbanes-Oxley Law	6.7	11
Application Systems Controls	6.7	11
Privacy Laws & Issues	4.8	13
AVERAGE:	7.6	

CHART 6: BEGINNING v. FINISHING CIS MAJORS:

	BEGINNING CIS Majors	FINISHING CIS Majors	DIFF	% DIFF	RANK
Building & Physical Security	6.4	8.0	+ 1.6		1
On-Line Security	7.9	9.0	+ 1.1		2
Operational Security	7.4	8.5	+ 1.1		2
Viruses & Virus Protection	7.7	8.8	+ 1.1		2
Disaster Recovery	7.5	8.5	+ 1.0		5
Wireless Security	7.8	8.7	+ 0.9		6
Sarbanes-Oxley Law	6.0	6.7	+ 0.7		7
VOIP Security	6.8	7.3	+ 0.5		8
Off-Premise Backup	7.0	6.8	- 0.2		9
Encryption & Decryption	7.6	7.2	- 0.4		10
Identity Theft	7.8	7.3	- 0.5		11
Application Systems Controls	7.4	6.7	- 0.7		12
Privacy Laws & Issues	5.9	4.8	- 1.1		13
AVERAGE:	7.2	7.6	+ 0.4		

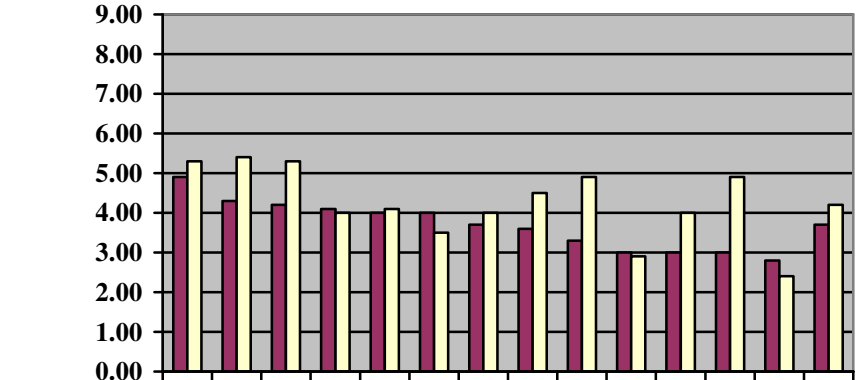
CHART 7: AVERAGES
Current Knowledge of Beginning and Finishing CIS Majors
v. Personal Interest in Topic of Beginning and Finishing CIS Majors



	Cur Knowl. of Beginners	Cur Knowl. of Finishing	Interests of Beginning	Interests of Finishing
Averages	3.7	4.2	7.2	7.6

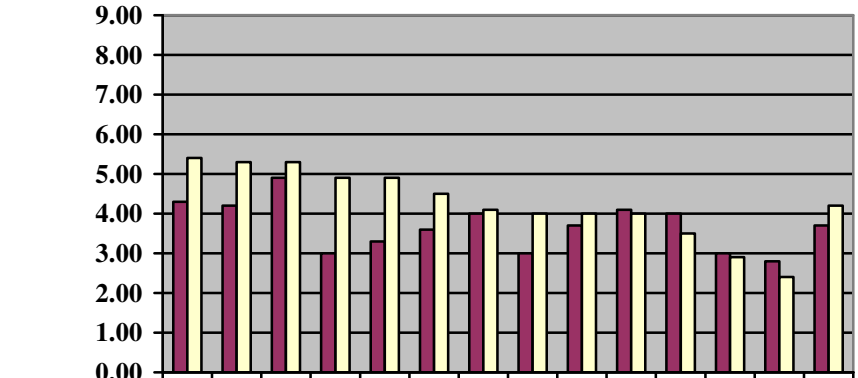
3 CHARTS
CIS MAJORS' CURRENT KNOWLEDGE: BEGINNING V. FINISHING

CHART 7
Current Knowledge of Beginning CIS Majors (on left); Finishing CIS Majors (on right)
In Descending Order by BEGINNING CIS Major Opinion of Current Knowledge



	VI	WI	DR	SX	OL	AP	ID	OP	OF	VO	BU	EN	PV	AV
Beginning	4.9	4.3	4.2	4.1	4	4	3.7	3.6	3.3	3	3	3	2.8	3.7
Finishing	5.3	5.4	5.3	4	4.1	3.5	4	4.5	4.9	2.9	4	4.9	2.4	4.2

CHART 8
Current Knowledge of Beginning CIS Majors (on left); Finishing CIS Majors (on right)
In Descending Order by FINISHING CIS Major Opinion of Current Knowledge

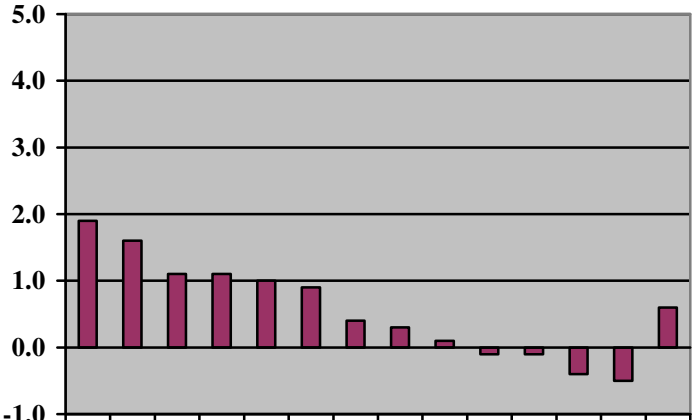


	WI	DR	VI	EN	OF	OP	OL	BU	ID	SX	AP	VO	PV	AV
Beginning	4.3	4.2	4.9	3	3.3	3.6	4	3	3.7	4.1	4	3	2.8	3.7
Finishing	5.4	5.3	5.3	4.9	4.9	4.5	4.1	4	4	4	3.5	2.9	2.4	4.2

LEGEND:

AP = Application Systems Controls	OF = Off-Premise Backup	VI = Virus and Virus Protection
BU = Building and Physical Security	OL = On-Line Security	VO = Voip Security
DR = Disaster Recovery	OP = Operational Security	WI = Wireless Security
EN = Encryption and Decryption	PV = Privacy Laws	AV = Average
ID = Identity Theft	SX = Sarbanes-Oxley	

CHART 9: DIFFERENCES BETWEEN:
Current Knowledge of Beginning CIS Majors and Current Knowledge of Finishing CIS Majors
In Descending Order by Difference



	EN	OF	DR	WI	BU	OP	VI	ID	OL	SX	VO	PV	AP	AV
DIFFERENCE:	1.9	1.6	1.1	1.1	1	0.9	0.4	0.3	0.1	-0	-0	-0	-1	0.6

LEGEND:

AP = Application Systems Controls	OF = Off-Premise Backup	VI = Virus and Virus Protection
BU = Building and Physical Security	OL = On-Line Security	VO = Voip Security
DR = Disaster Recovery	OP = Operational Security	WI = Wireless Security
EN = Encryption and Decryption	PV = Privacy Laws	AV = Average
ID = Identity Theft	SX = Sarbanes-Oxley	

3 CHARTS
BEGINNING AND FINISHING CIS MAJORS' ESTIMATES OF FINISHING PERSONAL INTEREST IN IT SECURITY TOPICS

CHART 10
Beginning CIS Majors (on left); Finishing CIS Majors (on right)
In Descending Order by BEGINNING CIS Major Personal Interest in Topic

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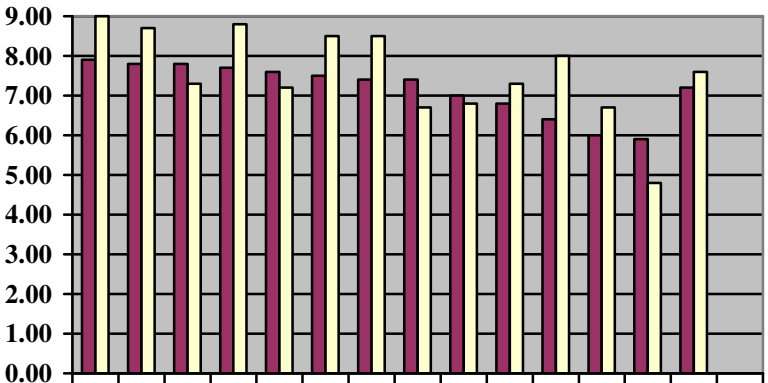
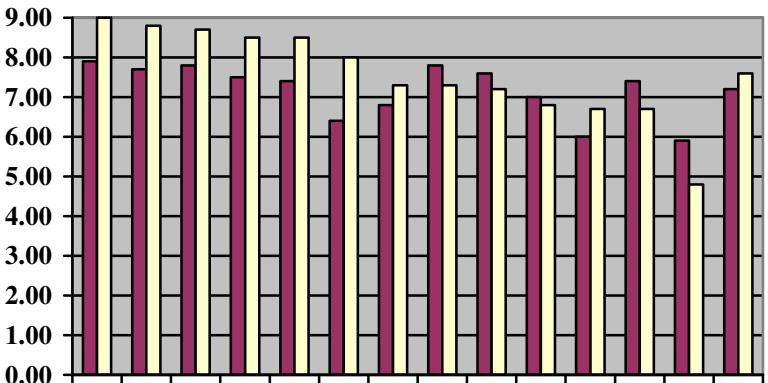


	OL	WI	ID	VI	EN	DR	OP	AP	OF	VO	BU	SX	PV	AV	
Beginning	7.9	7.8	7.8	7.7	7.6	7.5	7.4	7.4	7	6.8	6.4	6	5.9	7.2	
Finishing	9	8.7	7.3	8.8	7.2	8.5	8.5	6.7	6.8	7.3	8	6.7	4.8	7.6	

CHART 11
Beginning CIS Majors (on left); Finishing CIS Majors (on right)
In Descending Order by FINISHING CIS Major Personal Interest in Topic

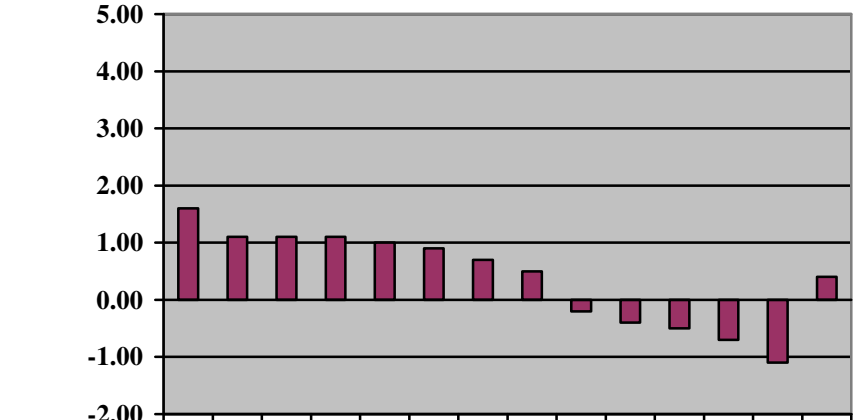


	OL	VI	WI	DR	OP	BU	VO	ID	EN	OF	SX	AP	PV	AV
Beginning	7.9	7.7	7.8	7.5	7.4	6.4	6.8	7.8	7.6	7	6	7.4	5.9	7.2
Finishing	9	8.8	8.7	8.5	8.5	8	7.3	7.3	7.2	6.8	6.7	6.7	4.8	7.6

LEGEND:

AP = Application Systems Controls	OF = Off-Premise Backup	VI = Virus and Virus Protection
BU = Building and Physical Security	OL = On-Line Security	VO = Voip Security
DR = Disaster Recovery	OP = Operational Security	WI = Wireless Security
EN = Encryption and Decryption	PV = Privacy Laws	AV = Average
ID = Identity Theft	SX = Sarbanes-Oxley	

CHART 12: DIFFERENCES BETWEEN:
Personal Interest In Topic of Beginning CIS Majors and Personal Interest In Topic of Finishing CIS Majors
In Descending Order by Difference



	BU	VI	OP	OL	DR	WI	SX	VO	OF	EN	ID	AP	PV	AV
Difference	1.6	1.1	1.1	1.1	1	0.9	0.7	0.5	-0	-0	-1	-1	-1	0.4

LEGEND:

AP = Application Systems Controls	OF = Off-Premise Backup	VI = Virus and Virus Protection
BU = Building and Physical Security	OL = On-Line Security	VO = Voip Security
DR = Disaster Recovery	OP = Operational Security	WI = Wireless Security
EN = Encryption and Decryption	PV = Privacy Laws	AV = Average
ID = Identity Theft	SX = Sarbanes-Oxley	