

Professional Issues in IT

Omar Usman Khan, PostDoc., PhD.
omar.khan@nu.edu.pk

Assistant Professor
Department of Computer Sciences



National University of Computer & Emerging Sciences
Peshawar, Pakistan

Course Overview

- Course Title: Professional Issues in IT
- Credits that can be earned from this course: **3**
 - How?
 - Mid-Term 1: [15] % Weightage
 - Mid-Term 2: [15] % Weightage
 - Final Exam: [50] % Weightage
 - Quizzes (5-6): [10] % Weightage
 - Tasks (2-3): [10] % Weightage

Major Course Topics

Laws & Regulations

Management

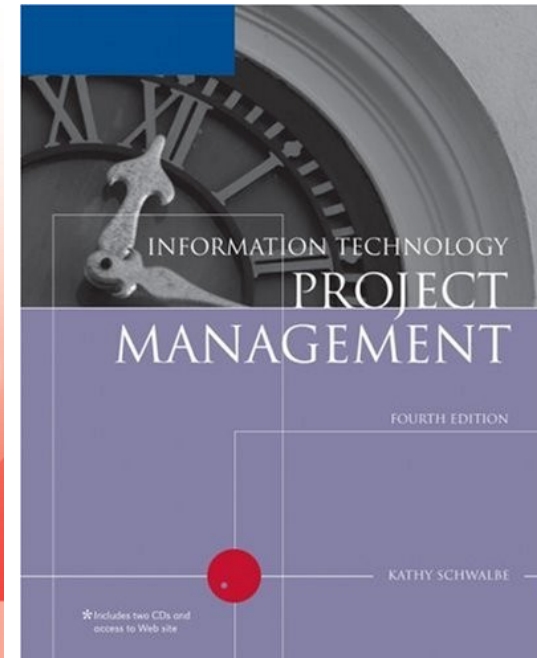
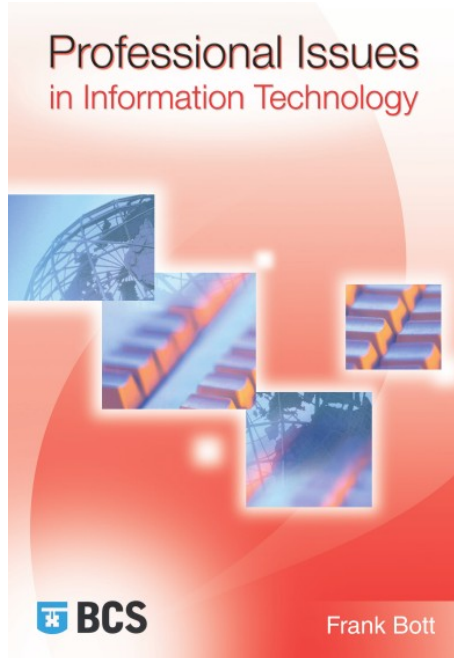
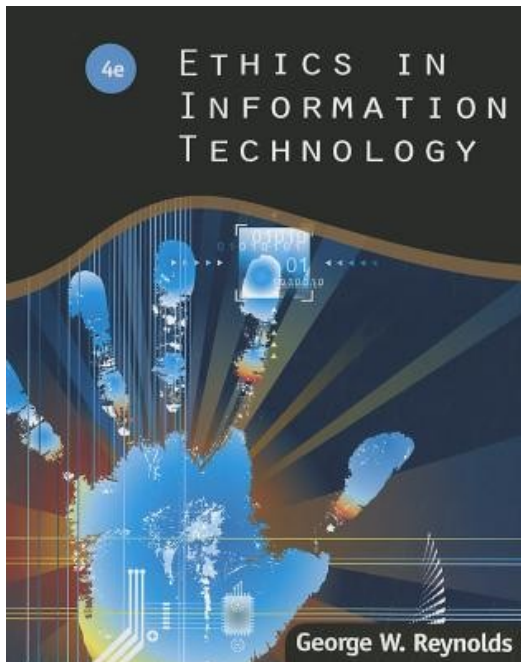
Ethics

Tools

- Laws & It's Types (Civil/Criminal Laws), Cyber Crime Laws, Creating Laws
- Professions, Professional Bodies (in Computing + Engineering), Professional Conduct
- Organizations & Companies, Types of Commercial Companies, Limited Companies, Organizational structures, etc.
- Financing a Limited Company, Sources of Finance
- Financial Management (Balance Sheets, Deprecations, Cash flow statements, HR Labor costs, etc.)
- HR Management (HR Managers, Recruitment & Selection processes, Training, Salaries, Dismissals, Discriminations, Harassment, etc.)
- Ethics (Conceptual Framework, Business Ethics, Computer Crimes, IT Security Policies, Intellectual Property & Copyright, Privacy, Social Networks, etc.)
- Risk Assessment, Version Control Systems

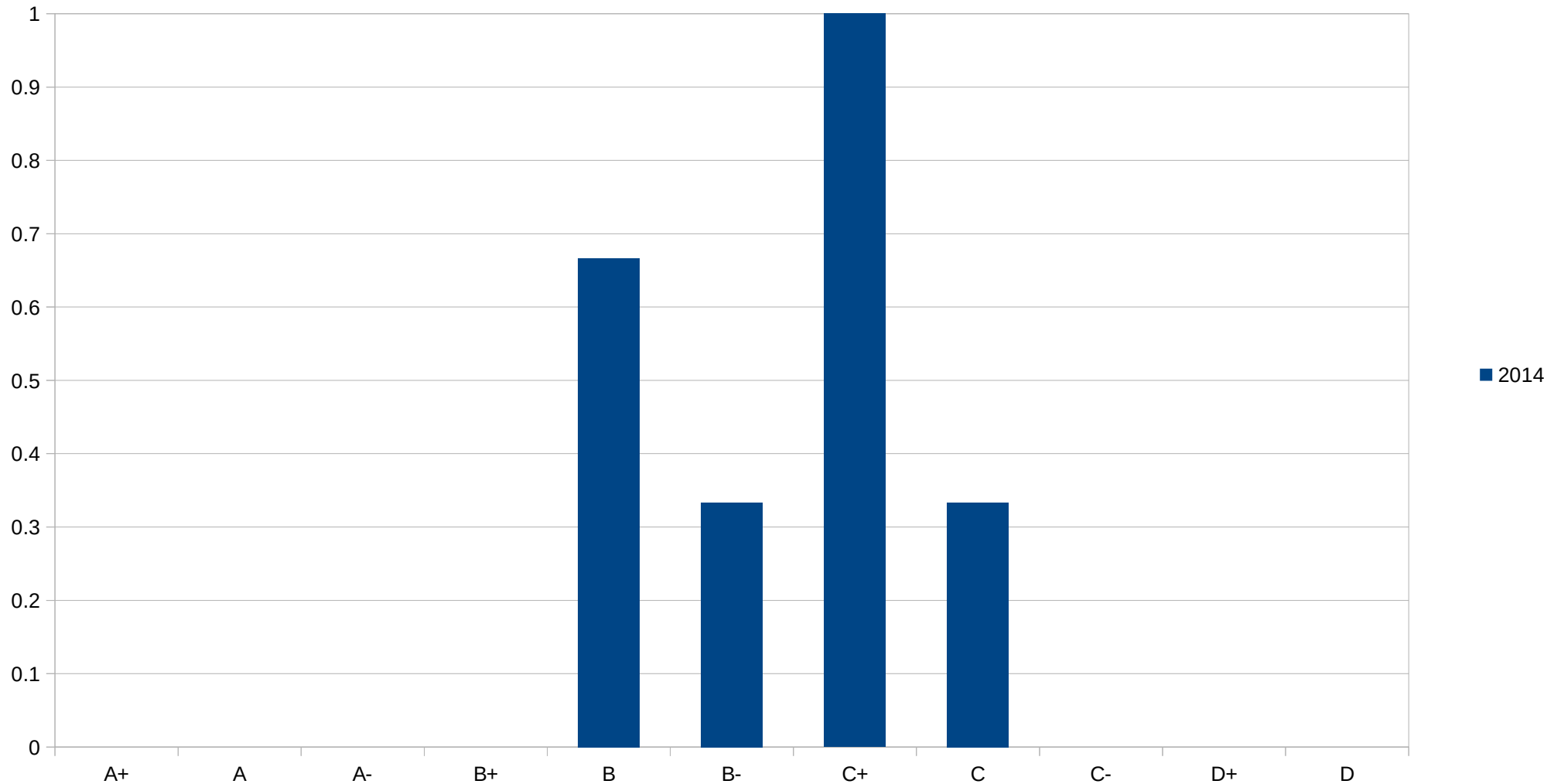
Recommended Books

- **Frank Bott, Professional Issues in Information Technology, British Computer Society**
- George Reynolds, Ethics in Information Technology, Thomson Reuters
- Kathy Schwalbe, Information Technology Project Management, Thomson Reuters



Professional Issues in IT

(Prev. Evaluations)



Degree Programs

Computer Science:

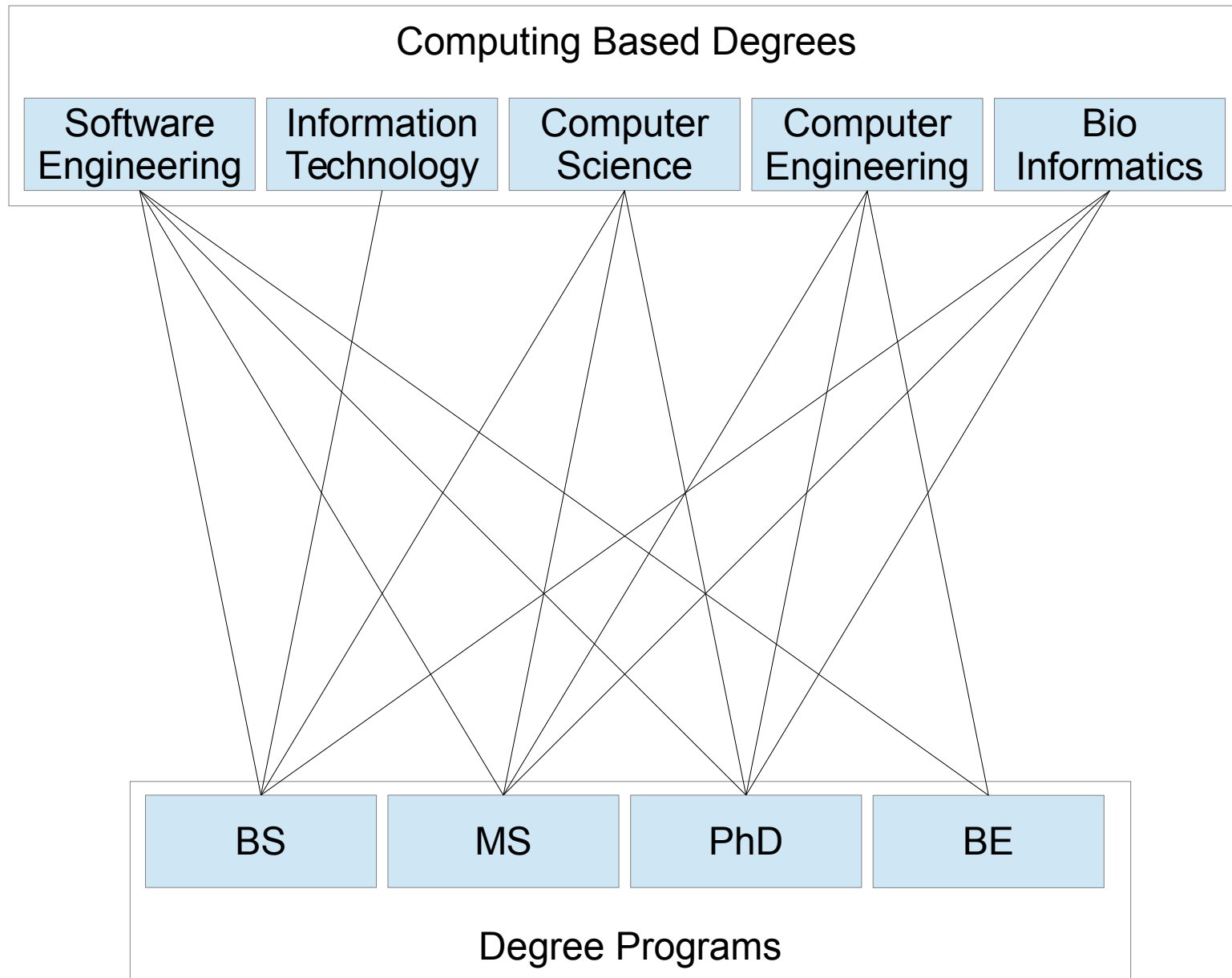
- Develop ways to solve computing problems, e.g., store data, send data, display data, etc. with best performance (using best algorithms)
- Develop new ways to use computers, and make them do new things
- Design and develop software systems
(Theory → Model → Designing → Implementation → Testing → Verification)

Software Engineering:

- Develop and maintain reliable software systems
- Provide software development practices
- Integrate computer science with engineering disciplines

Information Technology

- Use technology to meet demands of businesses, governments, health-care, schools, and other organizations
- Administration and Configuration of systems
- Installation + Maintenance
- Use and manage databases, e-governance & e-commerce portals, digital voice and multimedia communications



Why Professional Issues in IT?

- Computing is one of the key factors for progress in various areas nowadays
- It has transformed the way we live, learn, work, and play.
- Advances in computing & related technologies will help improve business, commerce, manufacturing, communication, research, education, and social interaction.
- This improvement will provide us with new tools which will definitely be a vehicle for economic growth

Why Professional Issues in IT?

- Computer Science, Computer Engineering, Information Technology, Software Engineering, etc. etc.
- Majority of universities in Pakistan that offer above degree programs do not have any course which covers:
 - Laws related to computing in Pakistan/Abroad
 - Computing Ethics in General
 - CS-based Professional Ethics in General
- This is contradictory to other professions like medicine where a course bearing this information does exist
- Engineering is also catching up

Region	Total	
	2013	2014
Federal	21	24
Punjab	23	27
Sindh	17	19
Balochistan	4	4
Khyber Pakhtunkhwa	12	14
Gilgit Baltistan	0	0
Azad Jammu Kashmir	3	4
Total	80	92
Public		55
Private		37

Computer Science/IT Courses taught in Universities in Pakistan

Data Source: NCEAC, HEC

BS Computer Science in Peshawar Based Universities

Abasyn University, Peshawar	Y
City University, Peshawar	Y
Sarhad Univesity, Peshawar	Y
University of Peshawar, Peshawar	X
FAST National University, Peshawar	W
CECOS University, Peshawar	No
IMSciences, Peshawar	No
Gandhara University, Peshawar	No
Iqra National University, Peshawar	No
Islamia College University, Peshawar	No
Agriculture University, Peshawar	No
Preston University, Peshawar	No
Qurtaba University, Peshawar	No
Shaheed Benazir Bhutto University, Peshawar	No
Virtual University, Peshawar	No

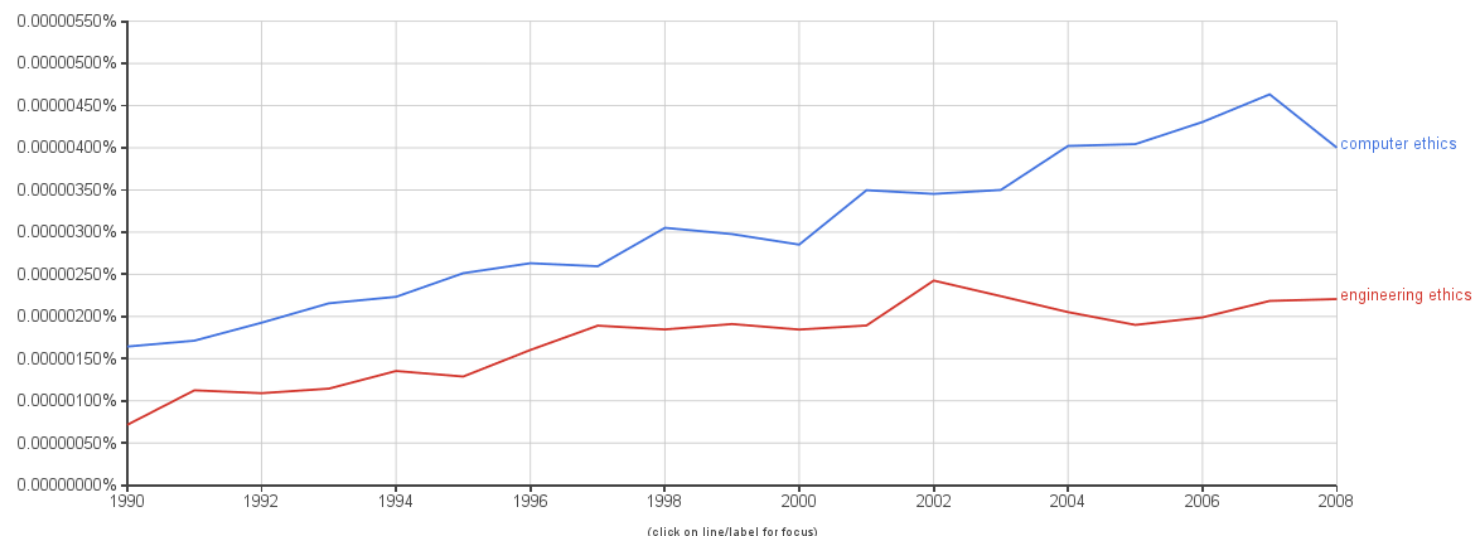
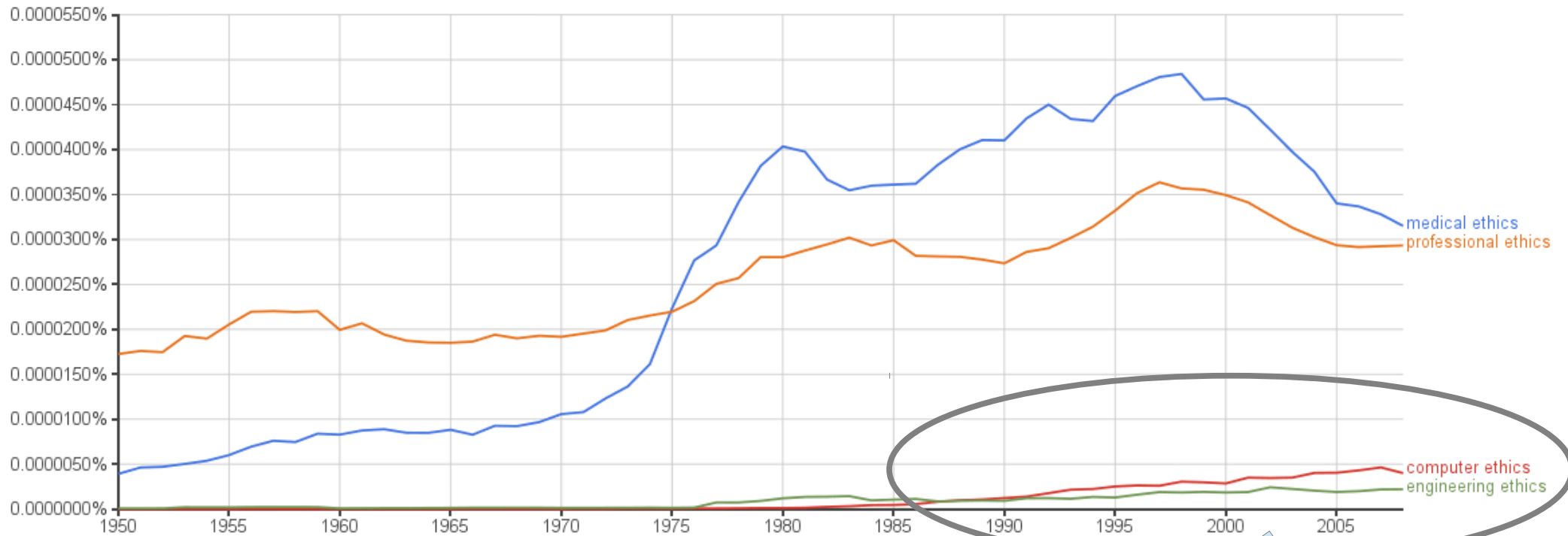
Data Source: NCEAC, 2014

BS Computer Science in Islamabad Based Universities

Air University	X	PIDE	No
Bahria University	W	Riphah International University	No
CASE	X	SZABIST	No
COMSATS	W	Shifa University	No
FAST	W	Allama Iqbal Open University	No
Urdu University	Y	Foundation University	No
International Islamic University	X	Hamdard University	No
Iqra University	X	Institute of Space Technology	No
Muhammad Ali Jinnah University	X	National Defence University	No
NUML Islamabad	Y	PIEAS	No
Preston University	Y	Abasyn University	No

Data Source: NCEAC, 2014

Ethics in Books



Source: Google NGRAM

Why Professional Issues in IT?

- Computers/IT/Software sector important for mission-critical applications
(\$\$\$ + Life/Death involved here)
- Something goes wrong, who to blame ???
- Developed countries vigorously follow Laws/Standards/Ethics, etc. related to computing
- Professionals working in CS/IT with no knowledge of these aspects risk the chance of jobs, or procurement of contracts in developed countries.

Design of a BS
Program in Computer Science

Supporting Areas

Calculus & Geometry
Linear Algebra
Statistics & Probability
Physics

Core Areas

Introduction to Computing
Programming
Object Oriented Prog.
Data Structures
Discrete Structures
Database Systems
Digital Logic Design
Operating Systems
Software Development
Communication/Networks

Electives

General Areas

English Comprehension
Technical Writing
Communication Skills
Pakistan Studies
Islamic Studies
Professional Ethics

Project/Major