

## **Career Paths** **for Undergraduate Students with Concentration in** **Information Systems and Technology (IST)**

*Note: this is not an official course requirements document, but simply a guide to help undergraduate students select IST courses*

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*“Today, our clients face increasingly challenging strategic and competitive issues arising from the rapid and sudden emergence of new and often disruptive technologies...success requires the integration of such crucial topics as products and markets, customers and competition, and emerging and future technology”—IBM Business Consulting Services*

An *information technology (IT)* professional is different than a computer science professional in that the latter focuses on the understanding of the internal computer machinery and the software that makes it work. In contrast IT professionals focus on understanding how this computer technologies (**T**) can be used to process and manage information (**I**) effectively to solve business problems and automate business processes and functions. Modern companies no longer view IT as a back room technical function, but use IT proactively to enable key business processes. But the most cutting edge companies (e.g., Google, WalMart) view IT as an integral part of their business strategy execution. The synergies that can be achieved from the effective adoption and integration of business processes, information and technology infrastructure are the key drivers of sustainable competitive advantage for these organizations. **If you want to pursue employment with some of this new generation of highly competitive organizations you must understand how IT creates business impact!!**

In some ways, the IT profession can be viewed as a bridge between technology and business. IT solutions often fail when IT professionals do not understand how the IT complements business functions, business processes and organizational goals and strategies. There are several career paths in IT, but they all involved developing expertise in a blend of business and technology topics. **Few professionals truly understand both of these perspectives, which provides a great opportunity niche**, which is why the IT job market continues to be very hot, particularly in the Washington DC area. In this document we describe some of the career paths you can pursue with the education you receive from Kogod’s IST program.

- 1. Business Analyst (BA)/Consulting.** This is a typical career path for *business consultants*, whose job is to resolve business problems. A **BA** is a bridge discipline aimed at aligning IT with the business needs of an organization. **BAs** are in high demand these days. The International Institute for Business Analysis (iiBA)—defines BA as: *“The set of*

*tasks, knowledge, and techniques required to identify business needs and determine solutions to business problems. Solutions often include a systems development component, but may also consist of process improvement or organizational change.*” The older job title “systems analyst” is rarely used today

because of a shift in focus away from system issues and closer to business processes. The new titles used today are “Business Analyst” or “Functional Analyst”. This shift reflects a change in orientation from experts with internal knowledge of how systems work (inside-out), to well rounded business professionals with knowledge of IT who can understand business process and functions and develop solutions that change or improve these processes, and develop requirements specifications that can be used to build systems to implement these solutions. The main knowledge domain for BA’s is business requirements analysis. In addition, BAs need to understand client relations, the consulting process and project management. Because an effective BA understands how IT creates business value, the BA needs to understand the business and strategic aspects of IT, as well as the technology infrastructure that supports them.

- 2. Online Business Developer (OBD).** Developing business applications online is more than just developing a web site or doing programming. It involves creating an electronic transaction processing system that will enable users to interact with a company’s database from a web browser to do things like: display product catalogs; register customers; place orders for products and services; track transactions and deliveries online; provide customer service; administer surveys and other questionnaires; upload and download files; and more. An effective OAD understands all business aspects of business-to-consumer and business-to-business electronic commerce. In addition, a OBD understands how to: design a normalized database; how to implement it in a database server environment; develop client-side and server-side scripts to interact with the database; create simple XML data description pages; create the necessary dynamic HTML pages to display results and prompt information to users; and design the user interface.
- 3. Technology Marketing and Sales (TMS).** Marketing and sales of technical products and services require a broad range of knowledge, including marketing, the business domain in which the sale is conducted (e.g, human resources, payroll, enterprise processes), and information technology. Selling technical products to a business audience require credibility, which can only be accomplished with demonstrated knowledge in these three areas. A technical sales professional bridges business and technology by selling the right technology. Technical sales are often well paid positions on commission structures. Around the Washington DC area, technical sales often involve the selling of IT services, but can also include software, specialized hardware and other IT infrastructure components and products (e.g., telecommunications, wireless, security, etc.). Typical companies that employ technical sales and marketing professionals include SAP, IBM, and Accenture.
- 4. Management of IT/IT Project Management (ITM).** The career path to ITM focuses on the effective management of IT implementations for business, deployment of IT and management of the IT function. An effective IT manager is not a pure technologist, but someone with a business background who understands business processes and functions, but who is also savvy about the IT employed by the organization. This career path if often a

necessary prerequisite to a Chief Information Officer (CIO) career path. A CIO is the highest level officer in an organization responsible for formulating and implementing strategies to gather, manage and disseminate the necessary information to support the organizational goals. A CIO needs to understand the organizations' goal and strategies; its business processes and information needs, and then deliver the necessary IT to support them effectively.

**Other paths:** these are IT paths directed at non-IST undergrads who wish to complement their education with further IT courses beyond ITEC 200:

- 1. Global Knowledge Worker (GKW):** most organizations these days work globally one way or another (e.g., workforce is global or geographically dispersed; some of the work is outsourced offshore; clients are international). Therefore, most business students need to be prepared to be effective global workers. This involves understanding virtual teamwork and teambuilding and understanding how to collaborate across geographic distance and time zones using electronic collaboration and social interaction tools.
- 2. IT office tools specialist (TLS):** business professionals today need to be able to use IT tools effectively to be competitive. It is not only necessary to know how to use popular IT tools, but use them effectively to yield high work productivity. ITEC 200 provides students with a sound knowledge of popular IT tools commonly found in business (e.g., Dreamweaver web development; Microsoft Access database; Microsoft Excel spreadsheets; and Microsoft Visio modeling and diagramming). Knowledge of these tools make our students quite effective in the marketplace. However, mastery of these and other tools require further education with some of these tools to have the ability to: use the tools in larger complex applications; and pass expert-level certification exams.

✓2010S * 2010F	Courses	Career Paths						
		BA	OBD	TMS	ITM	GKW	TLS	Non IT
✓*	<b>ITEC 200 The Leading Edge of Information Technology</b>	R	R	R	R	R	R	R
*	ITEC 334 Online Application Development	S	S		S			
	ITEC 335 Social Networking and Business				C	S		S
	ITEC 350 Corporate Information Strategy and Management	S	C	S	S			S
*	ITEC 388 IT for Financial Services	C		C	C			C
	<b>ITEC 455 Business Requirements Analysis</b>	R	R	R	R			
*	<b>ITEC 470 Databases, Data Mining and Knowledge Management</b>	R	R	R	R			
	ITEC 496 Nations and IT (1 credit)				C	S		
	ITEC 333 Computer Security Fundamentals	C	C	C	C			
	ITEC 333 Electronic Commerce		S	C				C
	ITEC 333 Networks, Mobility and Security	C		S	S			
✓*	ITEC 596/377 MS Excel Certification Workshop (1 credit)		C				S	
✓*	ITEC 596/377 MS Access Certification Workshop (1 credit)		C				S	
✓	ITEC 596 MS PowerPoint Certification Workshop (1 credit)		C				S	

**R** – Required for IST concentration; **S** – Suggested Elective: important for that career track; **C** – Complementary Elective: useful complementary course for that career track