



**Nova Scotia
Community College**

Feasibility Study

eBusiness Programming at NSCC

Prepared for School of Business, NSCC
by Stephen Parsons

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Preamble

This document has been prepared for the Nova Scotia Community College, School of Business by Stephen Parsons – Project Coordinator, eBusiness and Sales Redevelopment.

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Saving my greatest appreciation to the last, many thanks to the Deans of Business (Bill Walsh), Part-Time Studies (Phil Davison), and Applied Arts & New Media (Bill Donovan), who have helped prop up my energy level, enthusiasm, and confidence in this process – in spite of frustrating budgetary and political constraints.

Thank you all for your support and confidence.

Stephen Parsons
Project Coordinator

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Abstract/Executive Summary

Canadian universities, colleges and schools are not equipping graduates with the skills they will require in the modern economy.

The following document outlines a proposal for the development and delivery of eBusiness curriculum at the Nova Scotia Community College. Programming for core courses *will be integrated into the first-year of the Business Administration diploma in September 2002* and will be available to the part-time market as an *Advanced Diploma in eBusiness Management* starting in May 2002. Substantial content will be available in on-line format by September 2002, with additional courses to be made available as options or electives to many curricula over the next 12 months. Flexible programming options will continue to enhance access to the curriculum in both regional scope and alternate delivery consideration. The eBusiness discipline will also contribute to NSCC entrepreneurial initiatives & curriculum, Applied Research, and Community Outreach activities.

The research conducted by the program development team (presented in Appendix A) supports the proposed programming – subject to the college’s commitment to required resources. The focus of eBusiness training at NSCC will be on applied practical skills - a balance of strategic and technical content with an entrepreneurial sub-focus. Graduates will be in demand in cross-functional teams, sales and consulting positions in larger firms, technical management in businesses of all sizes, public and private organization Marketing and IS divisions and, with appropriate “seat time”, candidates for independent consulting and IT solutions start-ups.

In addition to identifying valuable concentrations and gaps within the market, the research presented herein includes observations on the characteristics of pre-eminent eBusiness Schools. The common threads for these institutions include highly- integrated eBusiness curricula, a focus on practical content, flexible delivery formats, a commitment to attract and grow intellectual assets, and patience in growing an eBusiness ‘brand’. NSCC will work hard to emulate the successful strategies of these *Centres for Excellence*.

Too many Canadian businesses, educators and governments are still talking about e-business, but are not engaging in it.

The suggested programming addresses a number of strategic directions for both the college and School of Business – particularly in portfolio development, community economic development, innovation, accountability, and college-industry partnering. The advanced diploma will involve both practical projects and a practicum consisting of either an industry case study or an industry project and optional focus streams – either technical or strategic.. This program will appeal to both business managers and to technical staff seeking to fill the gaps of contemporary eBusiness skillsets. The curriculum is being developed to meet the standards of the CompTIA eBIZ+ blueprint, the only known eBusiness certification in popular use.

Delivering eBusiness as a “discipline” within the college curricula will require top-down commitment to a long-term strategy for building an eBusiness brand in the School of Business . It will also demand a paradigmatic change in program development and delivery, involving as it must the input of a cross-functional team representing both Business and IT. Successful development of this model will contribute to enhanced offerings for both Business and Applied Arts students, improved relations between faculties, and expanded capacity that will help to enhance the corporate profile of the College and the Schools of Business, Applied Arts and New Media, and Part-time and Continuing Education.

Alternate delivery options for this curriculum are significant since both content and candidates are particularly suited to distance study via synchronous and asynchronous methods. The research indicates substantial interest in part-time study and in the opportunity to acquire post-diploma accreditation from the college. Extending our Business Administration 2-year program with a third year “Advanced Diploma” may also be viable in the future.

A budget is presented for the development cycle to April 2003 and for the implementation of the Advanced Diploma assuming a limited number of campuses for initial launch. This budget will accommodate professional development, marketing, recruitment and delivery costs.

Highlights:

- eBusiness learning objectives to integrate with the Business Administration diploma.
- Business/ IT blending appeals to the technology savvy administrator and to the IT worker seeking broader business management experience.
- Entrepreneurial “flavour” presents eBusiness start-up as a viable option.
- Mentored practicum promotes community and portfolio
- Cross-faculty development straddles Applied Arts and Business curricula
- Highly adaptive content provides valuable electives in various programs in full-time Schools and to modular part-time and post-diploma study.
- On-line content enhances student access and NSCC’s technology profile

Canada must come to terms with the fact that there is no more business as usual... All businesses will have to become e-businesses in some form to survive.

The Canadian Education sector is beginning to incorporate e-business into its curricula and its operations...however, in most post-secondary institutions...e-commerce studies are an enhancement to existing programs rather than a core discipline.

Section Quotes from Report to the Canadian E-Business Opportunities Roundtable, February 2001

Part I: Current Situation

Business Administration

The Business Administration program at NSCC is a two-year program providing a combination of experience, theory, mentoring, a strong foundation in the world of business, and applied skills at the intermediate and advanced levels. The Business Administration graduate is an entry-level administrative employee capable of stepping into many general administrative functions. A second year concentration focuses the student skills towards finance, international business, information management, investment management or other administrative focuses. eBusiness concepts are seen as fundamental knowledge for the modern business professional. Accordingly, eBusiness learning objectives in many foundation courses have been integrated into the curriculum in courses like Introductory Business, Marketing, and Computer courses as well as Strategic and technical foundation courses in the first year.

Advanced Diploma in eBusiness Management

The *Advanced Diploma in eBusiness Management* is a post-graduate applied eBusiness program consisting of 8 credit courses including a practicum (industry case or project). This diploma will provide specialized skills in the planning and development of Business solutions implementing Information Technology tools and resources. Augmenting the existing business and/or technical skills that students will bring to the program, the eBusiness diploma will add knowledge and competencies allowing graduates to manage and support many aspects of an organization's transition to eBusiness including research, web design, systems integration, logistics, technical requirements, distribution channels, and online sales and promotion.

The core content of the advanced diploma will align the program with the eBIZ+™ certification from CompTIA while optional streams allow the student to fine-tune their focus to either strategic or technical content within the diploma.

The graduate of the Advanced Diploma in eBusiness Management will typically be an experienced administrative or technical officer working or seeking to work in either Internet Solutions Services companies in Technical Sales, Consulting, or Development Projects or in businesses and government departments leading the planning and development efforts of their organizations in leveraging Information Technologies. The optional streams allow owners, managers and developers to fill in gaps in strategic and technical concepts and practice related to eBusiness.

The diploma will be available as *part-time study* in campuses where required eBusiness teacher-led or lecture-based courses (or teleconference/ alternate delivery) and Business Technology labs are available and in on-line formats via the Virtual Campus. As on-line content, multi-point videoconferencing capabilities, and distributed learning facilities improve, it is expected that the curriculum will be available to expanded markets and geographical areas. Achieving this objective will also be supported by the addition of additional elective programs and the growing influence of eBusiness throughout NSCC curricula.

The eBusiness curriculum will leverage existing capacity within the Schools of Business, Part-Time Studies, and Applied Arts to optimize existing intellectual assets. The trade-off of Business and IT electives between the schools will attract new students and enhance the opportunities for portfolio development for IT and business students alike. The expanded offering, supported by new on-line and alternate delivery mechanisms will enhance the profile of the college, the Schools, and the Virtual Campus. The courses listed below provide core standards for the Advanced Diploma in eBusiness Management credential.

Courses

Core Content Courses (5 required)	Hours	Credits
Contemporary Issues in eBusiness (EBIZ 1000)	60	1.0
Business Information Systems (ICOM 1310)	60	1.0
Principles of E-Commerce (EBIZ 2000)	60	1.0
eBusiness Process Design (MGMT 3025)	60	1.0
Project Management for IT Professionals (MGMT 3111)	60	1.0

Plus: Technical Stream (2 of the following)	Hours	Credits
Web Development Techniques (INET 2100)	60	1.0
eBusiness Programming (INET 3100)	60	1.0
Introduction to Multimedia Solutions (INET 3105)	60	1.0
RDBMS (DBMS 2100)	60	1.0
OR: Strategic Stream (2 of the following)	Hours	Credits
Business Consulting (MGMT 2121)	60	1.0
eBusiness Strategy and Planning (EBIZ 3100)	60	1.0
Web Marketing & Research (EBIZ 3200)	60	1.0
Security and Risk Management (EBIZ 3800)	60	1.0
PLUS: Practicum (1 of the following options)	Hours	Credits
Industry Project in eBusiness (EBIZ 4700)	60	1.0
Case Study in eBusiness (EBIZ 4710)	60	1.0

Note: Although courses generally may be taken in any order, several courses have pre-requisites as stated in the curriculum design document. Otherwise, the course “level” as indicated by the first digit in the course number is indicative of its complexity and difficulty. Students are advised to complete lower level courses before attempting those of advanced levels. Course format includes traditional classroom/lab delivery as well as on-line study according to the delivery chart shown in the appendix. Courses with both formats allow optional delivery choices for students.

Further Details including course descriptions are provided in Appendix C – Program Proposal Document.

Rationale

Innovation in all our industries is the key to expansion and growth of the economy...we must mobilize government, the private sector and our academic institutions, including the Nova Scotia Community College, to create a culture of innovation and design.

*Opportunities for Prosperity –
Government of Nova Scotia
A New Economic Growth
Strategy for Nova Scotians,
October 2000*

The research presented in Appendix A indicates that there is little support for an eBusiness entry-level graduate, but substantial interest in developing eBusiness skills in trained and/or experienced management and technical resources. eBusiness as a discipline presents a stable career path with various external influences converging to support growth for eBusiness jobs. Several recently published reports indicate strong evidence that the first half of 2002 will see a return to increased hiring in IT areas. Most reports agree that major new IT projects will not be the driving force for this growth. Rather it will be fueled by the effort of businesses to bring IT infrastructures and eBusiness processes up to scratch. New development for SMEs (Small- and Medium-sized Enterprises) is also likely to support a stronger market as these smaller businesses begin to adopt eBusiness technology. eBusiness as a discipline is still relatively new in scope but promises a strong and stable influence within the management consulting and business process re-engineering fields.

Market Growth

Businesses in Nova Scotia will be under increasing pressure to adopt, consume, and leverage eBusiness technology and services over the next few years in line with worldwide demand. New incentives driven from the research and recommendations of public and industry committees will see support for such adoption and use. As this strategy rolls out, there will be increasing demands at all levels of business organizations for skills and knowledge of eBusiness strategy and application.

A variety of issues make it difficult to predict accurate market growth for this profile, because the occupational definition is not as clear as many other occupational profiles. However, both HRDC and several secondary research sources in Canada indicate continued optimism that eBusiness consulting and solutions providers will continue to show attractive employment growth areas. (See Labour Market, p. 22).

Job Opportunities

Since the Internet has become a significant tool for both small and large organizations, graduates will find employment with a wide variety of businesses, including Internet providers, and Internet consulting services, management and marketing consultants,

large retail businesses and Information Services divisions in government and non-government organizations.

Self-employment is also a viable option. There are significant opportunities to seek independent contracts with organizations in the areas of planning, designing, creating, and enhancing the eBusiness aspects of their business. (See Job Descriptions on page 22 and in Appendix B – Reference)

The research derived from the online survey of employers included questions regarding the number of employees currently in this profile within the respondent company (Table 1) as well as the expectations for the importance of this role in the next 1-3 years (Figure 1). 100% of respondents to this latter question felt that the role would become more important in the near future. Students likewise felt that this curriculum would be effective in graduate employment (Figure 2).

Table 1: How many people does your company currently employ in this role?	
Total	2558
Average	232.545
High	2500
Low	0
Median	5
Corrected Average*	6.444

*Corrected average was calculated by throwing out high and low values and averaging the balance.

Figure 1: Employer - New program Interest Survey

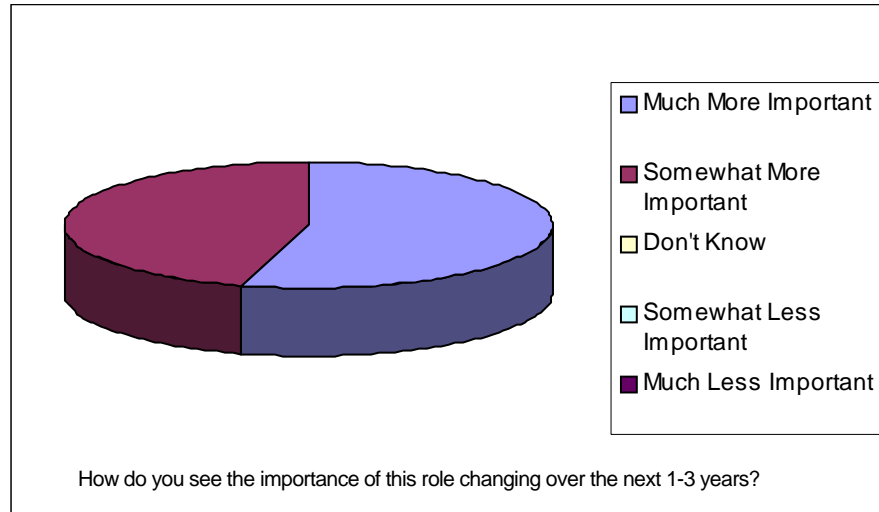
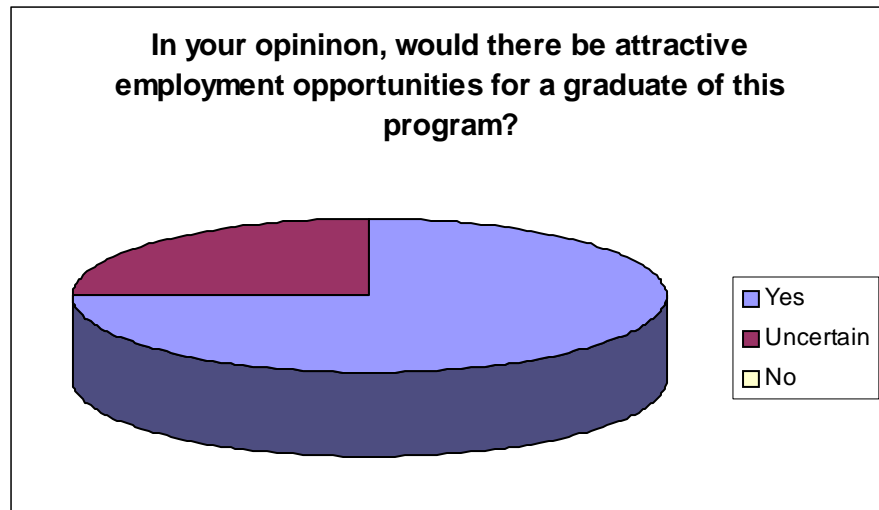


Figure 2: Student - New Program Interest Survey



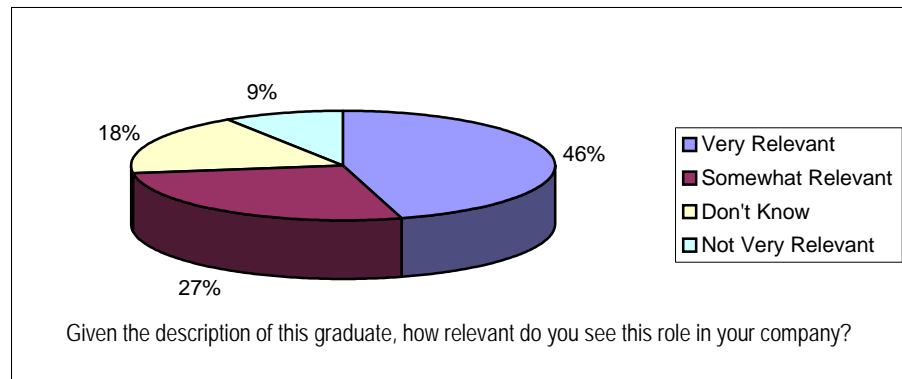
Content Relevance

Secondary research included a review of the curriculum of Canadian colleges and universities, DACUM charts, certification blueprints, and the objectives established in recognized institutions of excellence for eBusiness Training¹. Feedback from employers, in a “panel of experts” approach from the online surveys and tradeshow feedback, as well as student and faculty input on that initial concept resulted in fine-tuning that has resulted in the attached curriculum.

The core content of the eBusiness curriculum will cover a mix of technical and strategic skills – including technical project management, eBusiness consulting, business process reengineering, web design and development, decision support systems and emerging technologies, database systems, and a variety of electives that will allow the student to fine-tune their focus to either strategic or technical content within the diploma. The learning outcomes will be closely aligned to the CompTIA certification standards for the E-Biz+ credential.

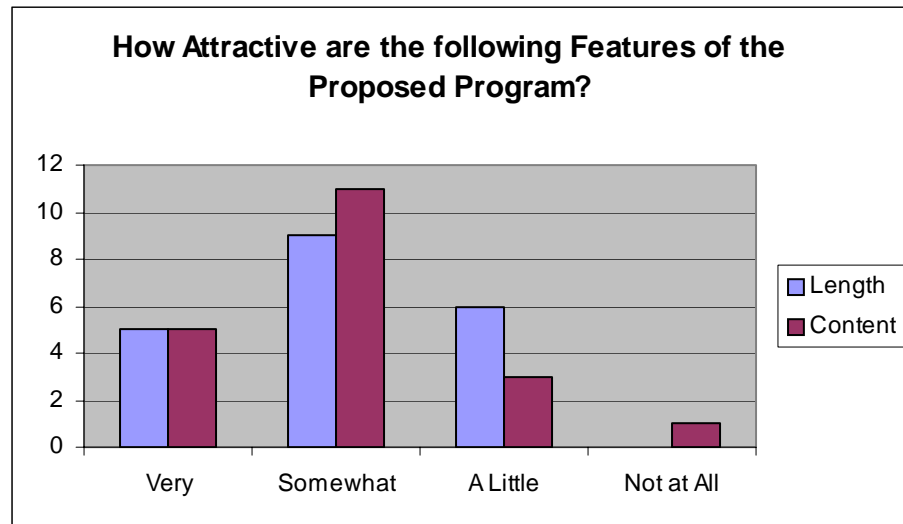
Employer and student responses in the online survey conducted under the Framework for Informed Decision-Making (FID) process confirmed the content relevance (Figures 3 and 4) as did the less formal Tradeshow surveys (See Appendix A), which presented the curriculum as options for part-time and continuing studies.

Figure 3: Employer - New program Interest Survey



¹ See the reference material in Appendix B. Three Canadian institutions and two American schools were identified by their reputation and growth statistics in this discipline. They included BCIT, Centennial College, Algonquin College, Sloan School at MIT, and the Owen School at Vanderbilt University.

Figure 4: Student - New Program Interest Survey



College & School Brand Development

The eBusiness curriculum will leverage existing capacity within the Schools of Business and Applied Arts to optimize existing intellectual assets. The exchange of Business and IT electives between the two schools will attract new students and enhance the opportunities for portfolio development for both IT and business students alike. The expanded offering, supported by new on-line and alternate delivery mechanisms will enhance the profile of the College, Business and Applied Arts Schools, Part-time Studies and Distance Education (including the Virtual Campus), and Customized Training.

Commitment to developing this curriculum and creating a serious brand for eBusiness within the college has already attracted the interest of many local leaders in the eBusiness industry including Cal Gosse and David Vokey (IBM), Raj Sodhi (TransActive eCommerce Solutions), Jean St. Armand (eCentrics), Malcolm Fraser (ISL), and Susan Sweeney (connexnetwork.com)². Continuing to attract such intellectual resources will ensure growing subscription to the programs and validation of the content while attracting investment by other industry partners.

² Mr. St. Armand and Mr. Fraser have indicated willingness to assist course instruction and curriculum development. Mr. Gosse and Mr. Sodhi have suggested options for technology investment. Ms. Sweeney has been approached regarding use of her internationally acclaimed curriculum for e-commerce.

Delivering eBusiness as a discipline within the Nova Scotia Community College will require changing perspectives, workflows, and program structures to deliver and promote a strong innovative curriculum within the College's catalogue. As the research indicates, those "champion" schools of excellence in eBusiness that we wish to emulate (see Appendix B - reference) have a number of key characteristics that signal and support their success. Those most obvious to the research team are as follows:

- ❖ Integration and Expansion – Product depth and breadth
 - The successful eBusiness school tends to integrate eBusiness curriculum across various faculties and touch points for its client base. Consequently, the depth of its body of knowledge tends to provide numerous electives to students within core eBusiness programs as well as alternate faculties and delivery mechanisms where eBusiness electives are appropriate.

- ❖ Access & Leverage
 - Delivery format does not usually pose a barrier to access in eBusiness programs because these schools tend to offer flexible delivery formats to ensure the curriculum reaches as broad an audience as possible. On-line format options appear to be viewed as both an access enhancement issue and an appropriate learning environment for the scholar of eBusiness technology.

- ❖ Practical, standardized content
 - While the institutions studied had yet to adopt credential for an eBusiness Professional designation, there is a developing certification standard via CompTIA as well as a set of established industry tools that provide strong curriculum development structure. The schools of note had a clear focus on standardization and practical training.

- ❖ Professional Development
 - The best schools for eBusiness intentionally blur the lines between Business and Technology in the delivery of many of their eBusiness courses. These schools recruit eBusiness specialists as curriculum consultants, develop cross-functional eBusiness curriculum development and research teams, and promote eBusiness concepts across multiple disciplines.

❖ Patience

- Establishing a brand for eBusiness can be enhanced by effective promotion and public relations, but long-term success requires a commitment to long-term product development. The best schools believe that eBusiness is likely to be with us for a long time and, therefore, invest appropriately.

There are four key barriers inhibiting the uptake and use of e-business by Canadian SMEs:

- *Lack of Information and Education*
- *Uncertainty surrounding the Costs and Benefits of e-Business*
- *Access to and the availability of Strategic E-Business Resources, and*
- *Security Concerns*

*Analysis of Barriers Impeding E-Business Adoption among Canadian SMEs
Industry Canada Canadian E-Business Opportunities Roundtable,
March 2001*

Enrolment

The program as presented is intended to attract existing administrative and technical managers and retraining workers seeking positions in IT consulting and development firms and in business strategy and marketing divisions of large companies, government, and non-government organizations. Alternate “packaging” of the curriculum is under discussion to provide modular or customized training to individuals requiring relevant parts of the core and advanced curriculum.

Meeting the College Mission, Values, and Strategic Plan

The eBusiness curriculum within the Business Administration program and its extension into other learning areas will provide innovative programming aimed at meeting the developing demand for eBusiness skills in Nova Scotia. The entrepreneurial accent to the program’s course content will further encourage and support development of innovative start-ups within the province and provide increased awareness of the needs and characteristics of – and eBusiness resources available to – Nova Scotian communities and small businesses.

As the credential for the eBusiness Professional solidifies, the program will continue to address certification standards essential to the administrator responsible for developing and leveraging IT assets. The graduate of the eBusiness diploma will have a substantial portfolio to bring to potential employers, having undertaken core strategic analysis, eBusiness Practicum, and various collaborative eBusiness projects.

The practicum and projects offered through the diploma will be undertaken with the involvement of the community – Nova Scotian businesses, and faculty mentors who will ensure that the outcomes of these activities provide practical application of eBusiness strategies and generalization of skills to business solutions.

The launch of eBusiness as a substantial discipline within NSCC will leverage and extend capacity of our schools, campuses and faculty across the province. This curriculum signals the College's commitment to address Nova Scotia's needs for eBusiness skills at many levels. It also addresses college accountability by drawing from existing curricula while extending eBusiness awareness and innovation at various levels of college programming. The development of a significant, agile body of eBusiness knowledge, much of it to be available through alternate delivery, will provide material and access to other faculties, divisions, and stakeholders.

The following sections identify how the findings of the feasibility study match the College's mission, values and strategic plan to the development of this curriculum.

Mission Statement

To achieve prosperity, we must...develop a labour force with the skills and education to take advantage of our new opportunities.

Building Nova Scotia's economy and quality of life through education and innovation.

The eBusiness curriculum is both innovative in scope and highly relevant to the needs of a growing IT industry in Nova Scotia. Knowledge-based industries within our communities are a natural and valuable extension of the economic opportunities for Canada's "Education Province".

Values

Accessibility
We are committed to providing greater access to educational opportunities

eBusiness is non-discriminating in its employment opportunities. Enhancing access to this curriculum through on-line and alternate delivery study options will continue to expand access to college education in strong employment-ready programs.

Collaboration
We reward collaboration, diversity of expression, and decisiveness.

The adage "Carpe Diem – Seize the Day" expresses both the timeliness and the vigor of our entry into the eBusiness training market. NSCC's breadth and depth of faculty skill and credential will come through in a collaborative effort to provide "Education that Works" in a unique, diverse cross-faculty offering.

Innovation

We value innovative ideas and actions that engage students, employers and communities in learning and development.

The impact of this innovative curriculum on students, employers and communities will grow both the graduates of affected programs and the very community in which the services will be produced and consumed.

Public Accountability

We are responsible and accountable for the public's trust.

Employing the Framework for Informed Decision Making (FID) as a quality assurance and continuing improvement process starts this curriculum on a responsible path. Repackaging the curriculum for relevant communities of learning will extend that accountability to ensure the maximum return on investment of time, effort, and materials in its development and implementation.

NSCC Strategic Plan

Portfolio Education

The critical thinking, practicum, and collaborative real-world projects undertaken by the graduate of this program will provide considerable proof of competency in their portfolio. Close alignment to the standards established by the CompTIA E-Biz+ certification and future industry credentials will ensure quality training with industry certified status.

Quality Assurance

Alignment with certification standards, continuous improvement processes led by cross-faculty working groups, and Program Advisory Committees (PACs) and focus groups involving community leaders in eBusiness will assure quality curriculum.

Partnerships with appropriate industry partners are continuously being formed to ensure compliance and exposure to the most important and contemporary tools for eBusiness.

Employment

The innovative work experiences of this curriculum – particularly in the mentored practicum – will strengthen employment prospects of NSCC eBusiness graduates while helping to grow the industry at the community level.

Personal Growth/ Organizational Progress

This curriculum is a courageous step forward that will count on professional development and astute recruitment of practitioners to provide a core of intellectual resources working together to establish NSCC as a Center for Excellence in Canada for eBusiness Training and Applied Research.

Community

The intensification of alternate delivery content in this program, innovative mentoring activities, and programming for collaborative cross-faculty experiences will develop new communities of learning within the college while at the same time providing opportunities to extend the college's community reach throughout Nova Scotia.

Student Experience

The curriculum and environment will be fine-tuned to focus on the student learning in this curriculum. Integrating rich media content, synchronous and asynchronous modes of learning, and plenty of hands-on practice will address the learning styles of a very broad audience.

Marketing & Promotion

With numerous convergence initiatives underway (like the Atlantic E-College, articulation agreements, and partner college institutes), it is critical that NSCC make a bold statement that says, “We are leaders in the business of eBusiness Skills”. The conflation (or convergence) of ideas like the proposed educational repository makes it critical that NSCC get “bragging rights” to the best of its offerings. This curriculum proposes leading edge content and format and therefore will be established at a very timely juncture in the Atlantic Provinces College collaboration scene.

Growth & Public Accountability

After a severe downturn in the IT industry, the nation is ready to head back to work with new eyes on tightening up IT infrastructure, and fine-tuning business processes. Visualizing eBusiness as “Business as Usual” is vital to ensuring survival and growth in the post dot-com-bust/ internet-enabled world. CATA Alliance has called for a 10 billion dollar fund from Ottawa to “get the train back on the tracks” and it is likely that Industry Minister Alan Rock will rise to the challenge and make a significant effort to bolster knowledge economy initiatives. eBusiness will be a significant part of that recovery with belt tightening business re-definition being an obvious first step. Investing in this development now will mean we will be there when the expected demand becomes most challenging.

School of Business Strategic Plan

Key Program Focus

eBusiness will be treated as a discipline within the school – not simply a course or a program. The curriculum will be integrated within the Business Administration Program and eventually within other programs within the school and the college generally. eBusiness is one of several programs isolated as key programs in the School of Business.

Branding

Establishing eBusiness as a strong discipline at NSCC will position the college as a premiere training institution for practical eBusiness skills in Nova Scotia. This curriculum, featuring cross-faculty collaboration and innovative industry partnerships, will strongly establish NSCC as a substantial Business/ IT college.

Certification & Accreditation

Alignment with E-Biz+ (with the potential to further solidify that arrangement) or alignment with other developing accreditation will ensure this curriculum continues to be endorsed by employers and consumers of eBusiness services.

Quality

Early commitment to this program has been seen in the attraction of significant industry interest for instructional resources, PAC member representation, and partnerships. The involvement of some of the most innovative and creative thinkers of our local industry – executive and technical management from IBM, Microsoft, Oracle, xWave, PeopleSoft, eCentrics, TransActive, and ISL – along with the continued use of the Framework for Informed Decision-Making (FID) as a continuous improvement process will ensure a high quality product for the eBusiness curriculum throughout the various “touch points” intended for this discipline.

Part II: How did we get here?

In the spring of 2000, at the peak of the economic cycle, there was a shortage of qualified information technology (IT) workers in Canada. It was estimated that industry IT operations were functioning at only 75-80 per cent of the desired level due to a shortage of qualified workers.³

Job Descriptions

A brief survey of online job websites turned up more than 30 jobs fitting the described occupational profile with titles such as the following:

- Product Manager, eBusiness Solutions
- Project Manager (eBusiness)
- Business Technology Specialist
- eBusiness Consultant
- Business Systems Analyst
- BPR Specialist
- Technical Sales (eBusiness Services)
- Account Executive (eBusiness)
- CRM Administrators and Clerks
- Call Center Specialist (eBusiness Applications)
- Information Systems Quality Assurance Analysts
- Information Systems Manager
- Data Administration Analysts

The Software Human Resource Council lists 11 independent occupational codes for which graduates of the proposed program would provide appropriate qualification. In addition, more than 90 National Occupation Codes have been identified as benefiting from increased and enhanced eBusiness training. Please see Appendix B for occupation lists and job descriptions identified during the secondary research stage.

³ *Results Briefing: Survey of IT Occupations 2000*, The Conference Board of Canada

Market Trends

Economists now agree that information technology (IT) has been a key underlying component behind the past decade's rapid productivity increases. In Canada, even though labour productivity growth declined slightly from 1996 to 1999, the contribution of information and communications technology to productivity continued to increase. Over this period, the IT sector was responsible for more than one third of the growth in our labour productivity and for similar growth in output.⁴ Worldwide, the demand for IT spending, particularly in B2B Internet Commerce is still expected to expand dramatically over the next 4 years as figure 5 illustrates.

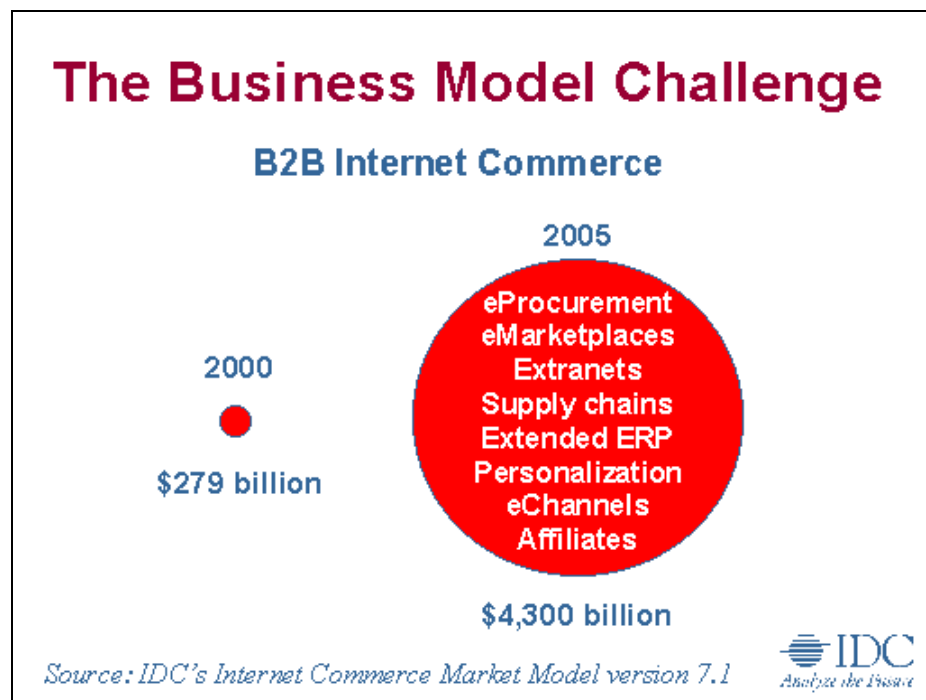


Figure 5: B2B Internet Commerce Growth

The explosive growth of information technology has changed the way we live, work, and do business - forever. And this same explosive growth has created a large, rapidly growing, world-wide requirement for people who can design, build, install, service, and create today's and tomorrow's information technology applications.

⁴ *ibid*

So explosive has been this growth that the demand for skilled people far exceeds the supply, resulting in what has come to be known as the "IT Skills Gap". Recent estimates suggest that more than 1,000,000 North Americans could be employed in rewarding, high-income jobs today if they had the appropriate information technology skills. Reports from Europe, Asia, and elsewhere confirm that the IT Skills Gap is a worldwide phenomenon. Right here in Canada, the shortfall has been estimated at no fewer than 20,000 unfilled jobs.⁵

As the primary research has indicated (see page 11), there are significant numbers of jobs right here in Nova Scotia, and employers expect that role to increase over the next 1-3 years. In spite of both general economic sluggishness and slow recoveries in IT-based industries, there is recovery happening and that is expected to warm up significantly over the next three years, quickly cannibalizing the short-term market surplus in IT workers.

⁵ Information Technology Association of Canada (website): <http://www.itac.ca>

Part III: SWOT

The report concludes that SMEs are lagging significantly and that the single factor causing this lag is a lack of awareness of what e-commerce is and how it can benefit an SME...Not only do SMEs not understand the technology associated with e-commerce, but they lack a knowledge of the marketing skills and business strategies needed to succeed.

*The State of Electronic Commerce in Atlantic Canada - ACOA
Report prepared by InnovaQuest, March 2000*

Employers

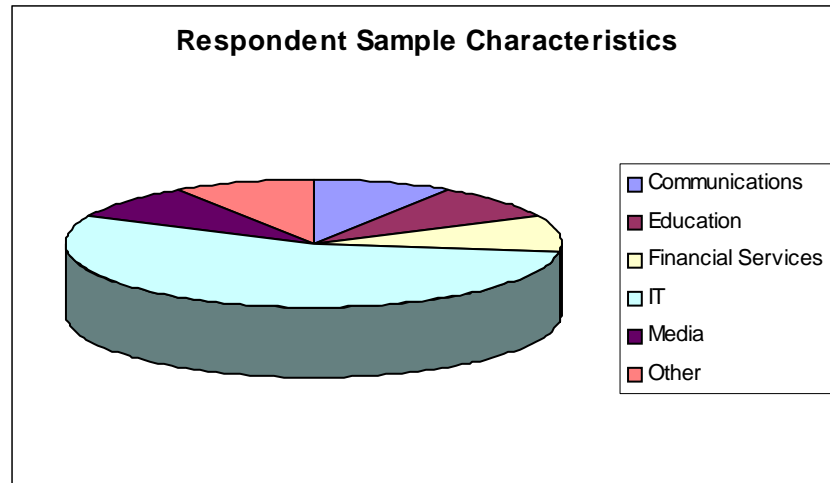
Secondary Research

The employer-based secondary research included website and literary reviews of employment information, as well as reviews and labour trends analysis documents from organizations like the IT Association of Canada, IT Association of Nova Scotia, Software Human Resource Council, Conference Board of Canada, Strategis/ Industry Canada, and HRDC. Details are included in Appendix B – Reference.

Primary Research

Primary Research included an online instrument based on the survey format proposed in the Framework for Informed Decision-making – later reviewed and modified in consultation with Roxanne McLeod, Research Design Specialist. The actual survey form and summary report is shown in Appendix A.

Surveys were also conducted at a number of Open House events and trade shows including CRDC's "eBusiness for Your Business" event in Halifax during the month of November. Details are included in the Appendix. The following diagram identifies the characteristics of the respondent sample group. All but two of the respondents would be defined as SME (small- to medium-sized enterprise). The two exceptions included a major communications company and a large database/ software applications vendor.



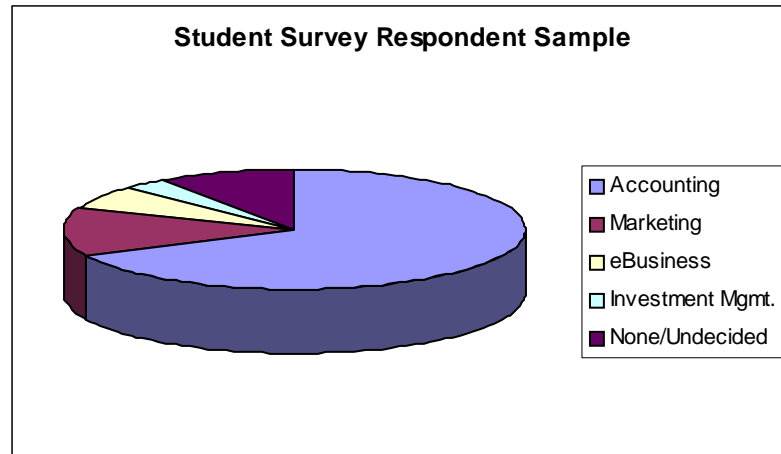
Both primary and secondary research confirms the curriculum as being relevant and valuable in increasing employment opportunities for eBusiness graduates. It also confirmed the interest of continuing and part-time learners in making the curriculum available in alternate delivery packaging and formats. 70% of employer respondents to the online survey indicated they would be interested in serving on Program Advisory committees. A number of valuable suggestions for improving the curriculum were provided by respondents and these are presented in the summary document in Appendix A.

Students

Primary Research

Selected students from first-year Business Administration were asked to complete an online survey. To provide an unbiased sample, participants were not told about the nature of the survey until they logged in and registered. The students were asked their opinion about their interest in this course, their impression of the length and content, and their confidence that this curriculum could lead to employment. A copy of the survey document and summary is attached in the Appendix.

The diagram on the following page identifies the expected concentrations of the student survey sample group. This sample appears to be a strong reflection of the general population of Business Administration students.



As with the employers, there was significant affirmation for the curriculum proposal. Even though most respondents were in other concentrations, students felt that this curriculum has relevant content that would lead to substantial employment for graduates of the program. They also presented some valid comments regarding the curriculum and these are included in the survey summary document in Appendix A.

Faculty

The Framework for Informed Decision-Making New Program Development strategy currently includes a survey process for both employer and student but does not identify a faculty survey component. In the opinion of this author, the addition of a faculty survey process would be a valuable addition. Addressing this oversight, faculty input has been incorporated in the development of this proposal. Several campus faculty members were included on the project team. Additionally, the project manager travelled to Truro campus (which boasts strong faculty in both Business and Applied Arts) and solicited their opinion of the proposal in a less formal forum.

The faculty in Truro generally thought the curriculum to be innovative and exciting in its content and approach. They also had numerous suggestions for improvement and cautioned that a substantial body of knowledge and curricula already exists that may fit some desired learning outcomes. They indicated they were in a good position to evaluate the level of outcomes once curriculum design was completed.

The curriculum as proposed will be subject to faculty review to ensure consistency with existing course objectives and to reduce the potential of redundancy in development effort. A recommendation is being forwarded to review the process for new program development with a suggestion to include the faculty survey in this process (as is the practice for program renewal).

Partners

Several valuable industry partners have already come forward with offers to discuss PAC representation, infrastructure and training support, and learning resources. As the curriculum design process progresses, these opportunities will be followed up through representation in the School with the support of the VP, Partnerships and Innovation. Those who have come forward with offers of support include:

- IBM (Cal Gosse, David Vokey and GM, Higher Education - John Gifaldi)
- TransActive eCommerce Solutions (Raj Sodhi)
- eCentrics (Jean St. Armand)
- Internet Solutions Limited – ISL (Malcolm Fraser)
- Oracle (Peter Gee)
- Deloitte & Touche (Terry Riedle)

External Accreditation & Certification

It was suggested that the eBusiness program include industry certification. At this time, there is only one viable eBusiness certification - the E-Biz+ credential from CompTIA. While CompTIA's other certifications have strong industry support, it is unclear as to whether this will translate into similar acceptance for E-Biz+. None of the 40 jobs isolated from the on-line search mentioned the Gartner or CompTIA's certification as required (or even desirable). What's more, in the online survey of more than 30 Nova Scotia top IT Businesses (in which there was a specific question about certifications for this profile) not one respondent mentioned the E-Biz+ certification.

The college will align the learning outcomes for the eBusiness curriculum with the E-Biz+ certification while continuing to investigate its adoption. Should there appear to be growing acceptance, the college will investigate the process of adding certification and articulation within this curriculum.

Part IV: Options

Canadian Colleges and Universities

The Association of Canadian Community Colleges (ACCC) recently listed all known e-commerce programs being offered in Canadian Colleges. Based on this list, online research was conducted to define the positioning of 46 different programs across more than 25 colleges in Canada. Positioning was focused on two parameters: focus (whether the program description seemed more technical or more strategic); and credential (the level of certification offered through the course from single course completion to advanced or post-graduate diplomas). Several University programs were also studied to isolate the positioning of their offerings. The study also examined regional characteristics, delivery formats, and scope (the number of touch-points or programs for the discipline in each institution).

Although there are some very innovative programs across Canada, few seem to address a practical focus on technical dimensions of the industry and hands-on application of emerging technologies. In Atlantic Canada, the identified college-level presentation of eBusiness discipline is extremely disappointing.

Appendix A includes a summary review of the comparative research undertaken. Additional details of Canadian College eBusiness and e-commerce offerings can be found linked from the ACCC website.

Institutions of Excellence

The secondary review isolated three Canadian Institutions and two American schools that epitomize excellence in eBusiness programming. These are the BC Institute of Technology (BCIT) in British Columbia, Centennial College in Toronto, Algonquin College in Ottawa, the Sloan School at MIT, and the Owen School at Vanderbilt University. The common characteristics of these institutions included *broad scope* for the discipline, *significant use of technology* in the learning environment, *practical/technical focus*, *strategic faculty recruitment and development*, and *patience* in growing an eBusiness brand. Details have been provided on Page 14 of this report and in Appendix B.

Part V: Recommendations

Facilities Requirements

Campuses offering diploma courses onsite will be expected to provide both classroom and computer lab space and access for each section provided. By January 2003, substantial content will be available online and therefore independent asynchronous study in many activities should reduce demand on classroom space while increasing access to internet resources.

Ideally, campuses should consider developing a “professional practice office”, including a team room(s) for project discussion, application development centre, and a videoconference room. These would factor into the quality of the student experience through simulation of real-world conditions critical to the delivery of many learning outcomes. Given the necessary mentoring relationship with community-based service providers, consideration might be given to negotiating such space off-site.

Space for an eBusiness section in campus libraries should be discussed with library staff. Campuses performing certification testing may also wish to consider dedicating a small testing centre with space sufficient to allow 3-4 students at a time to write certification tests. If library staff are to be considered for proctoring tests, then testing centres may be located in or close to library resource centres.

Infrastructure Requirements

As an IT-enabled curriculum, the eBusiness courses will require substantial access to workstation systems and to centralized servers for both web development and emerging technology exposure. Many of the activities require fast, reliable internet access to perform online research, acquire on-line content, and collaborate with remote team members and faculty. As more courses are made available online, internet access will be even more critical, although alternate delivery options should consider providing some support materials and programs in CD-ROM format.

Campus faculty will become increasingly involved in facilitation of on-line courses. Such activity will require appropriate faculty access to dedicated high-speed internet connections as may be needed to manage the learning environment. Ideally, multi-point videoconferencing and collaborative applications would allow for critical synchronous activities.

The capacity to provide real-time access to high-end systems and applications through thin-client applications like Windows Terminal Server, NCD Thin Client, and web-based interfaces to enterprise applications should be taken into account in planning the server and communication needs for this curriculum. It would be impractical to consider high-end minicomputer or mainframe server systems at every campus offering the curriculum. However, a few centralized systems linked by thin-client workstations would provide a viable, economic, and realistic environment.

Centralized resources should include at least one high-end server (multi-processor dedicated server like the IBM model 270 or equivalent) running SAP/R3, Oracle, SQL Server and software tools for logistics (SCM) management, HRMS, CRM, and ERP as are needed to provide appropriate exposure to contemporary and emerging technologies. Web servers could likewise be centralized, but campus local servers would only require moderate-budget configuration and would probably benefit from responsiveness and cost-effectiveness of local support.

Student application workstation configuration should include access to Microsoft Windows 2000, Microsoft Office 2000 Premium – Developer Edition, Microsoft Visual Basic and Visual InterDev, Microsoft Project, Allaire Cold Fusion, Macromedia Director, IBM's DB2 database and tool suite, Visual Age development tools and BPR software (included in the recommended text for Business Process Re-engineering).

There are definite benefits to all parties in following up the interest expressed by local eBusiness providers to our initial proposals – with an eye to developing some of these program resources with industry partner sponsorship. An additional route currently under review would involve NSCC affiliate membership with TARA, whose application base, network and switching hardware, applied research facilities, courseware for Cisco and Internetworking certification, and collaboration activities should be highly recommended in our partnerships and innovation plans.

Human Resource Requirements

The practicum and projects offered through the diploma program will be undertaken with the involvement of local community, Nova Scotia businesses, faculty mentors and Program Advisors who will ensure that the outcomes of these activities provide practical application of eBusiness strategies and generalization of skills to business solutions.

Most of the human resources needed to deliver this curriculum exist within the college inventory – divided between the Business and Applied Arts schools. Those campuses with both strong Business and Applied Arts/IT faculty would be the most likely candidates to launch the curriculum. Following the models of those institutions that demonstrate excellence for eBusiness curriculum, strong collaborative cross-faculty teams will be essential to deploying the eBusiness discipline. To ensure a focused effort on the eBusiness discipline the college should establish a center for eBusiness with sufficient focused resources including assignment of responsibilities by a Project Coordinator, Department Head, or Curriculum Consultant, and administrative support for coordination activities. As faculty grow more aware and experienced with eBusiness concepts, the effort will eventually become more disseminated through Business resources.

Instructional staff for the Advanced Diploma will be recruited from the practitioner market and these resources, applied early in the development process may provide innovative strategies and content as subject matter expert (SME) contribution to curriculum development. It is important to ensure appropriate intellectual property policies and procedures are in place when engaging such assets.

Immediate attention should be given to professional development necessary to deliver those outcomes recommended for 1st year integration in the Business administration core curriculum. The 3rd semester course, Contemporary Issues in eBusiness, will be ready for evaluation by the end of March 2002. As a Professional Development activity, this could assist in establishing the mindset, attitude, and exposure to emerging technologies that will help faculty delivering Introductory courses in Computers, Business, and first year Marketing, Marketing Strategy, Spreadsheets, and Database courses. Faculty will be encouraged to undertake the developing part-time curriculum and to eventually complete relevant certifications.

As online content for eBusiness expands, core eBusiness staff will be encouraged to facilitate online sessions. For campuses where faculty utilization may be less than optimal, professional development activities should focus on preparing staff to manage online learning for this curriculum.

Learning Resources Requirements

Recommended text materials are identified in the program description in Appendix C. A number of library resources are also recommended and library staff should be consulted regarding the development of an eBusiness Collection for the college. Library staff could also be extremely valuable in identifying online archives and databases for research. The content of several existing online resources are suggested throughout the program description document. Some of the more prominent learning resources should include the Visa Merchant Education Centre (www.visamec.com), Oracle's education centre (www.oracle.com/education) and TechNet iDevelop Online (<http://web79-02.us.oracle.com/idevelop/online/>), and the Microsoft Training and Certification website (www.microsoft.com/traincert) . Discussions already underway with IBM show positive acceptance of our use of IBM's significant curriculum in the IBM eBusiness for Schools and IBM Scholars programs

Susan Sweeney has been engaged in discussion with the Dean and Curriculum Consultant for Business with regards to NSCC's hosting and delivering some of her internationally acclaimed e-Commerce "boot camps" and other materials including her textbooks and seminar materials. This material could add significant value to NSCC students.

As the curriculum develops, one or more subject matter experts will need to be hired to provide content to the Virtual Campus. Online course development and design resources at Virtual campus must also be planned.

Other Requirements

The challenge to deploying this curriculum at NSCC is significant and critical. The college will need to change, adapt, and attract a number of resources to effectively create an image as a serious provider of eBusiness skills training. Among those requirements are:

1. Top-down support for eBusiness as a “discipline” within the college.
2. Commitment to a long-term investment of resources to grow an eBusiness brand
3. Support of faculty and campus management to promote eBusiness awareness and skills across teaching resources in many curricula.
4. Scheduling coordination between schools and faculty in diverse curricula.
5. Commitment to develop an image within the College and School of Business that will attract appropriate resources from the community, employers, and government.
6. Leadership in economic development at the community and SME levels that addresses the College mandate to train Nova Scotians to effectively consume and leverage eBusiness technology.
7. Research methodologies and activities that help to set baseline data, create key performance indicators, and continuously track progress.
8. Continued innovation in how the college defines itself as a provider of training products – including alternate delivery formats, partnering with private industry and other schools, and integration of cross-functional content and delivery.

Summary

Credential

Advanced Diploma in eBusiness Management

Completion of the requirements of the program will entitle the graduate to apply to the office of the Registrar for issuance of an *Advanced Diploma in eBusiness Management*. A full transcript will also be available from the Registrar.

EBIZ+

The content of the core requirements is aligned with CompTIA's blueprint for the EBIZ+ certification, previously owned by the Gartner Group. The college will be seeking to articulate this program for CompTIA's CAQC (CompTIA Authorized Quality Curriculum) program. Graduates of the program will be prepared to write and pass the EBIZ+ certification test.

Business Administration Diploma

Recommendations for integrating eBusiness learning outcomes into the first and second years of the diploma have already been passed on to Faculty Working Groups. The coordinator for eBusiness training is preparing PD activities to help faculty understand the impact of eBusiness on their topic areas.

Format

The curriculum will be delivered through a combination of classroom lectures, computer laboratory application, seminars, online courses, multimedia content, collaborative projects, and an industry practicum (case study or technical project). As the online curriculum content grows, the program could eventually be taken completely online. Group activities require synchronous delivery, but many courses could facilitate self-paced agendas.

Alternate Delivery Options

Strategic discussions are underway to examine the opportunity to package the curriculum for a one-year, post-diploma format as a third-year option for graduates of the BA diploma. Applied Arts has also expressed an interest in making some of the business curriculum available to their IT students. Several of the modules would make excellent electives to non-concentration Business Administration students as well as to students of other concentrations.

Schedule

Curriculum Design

The proposed program is shown in appendix C. Completion of the curriculum design and subsequent adjustments to the proposal will require development of learning outcomes in line with the E-Biz+ certification and the curriculum. Delivery and examination of the design document by a faculty review committee is hoped for by May 1, 2002.

Curriculum Development

With acceptance of many of the textbooks identified in the curriculum document, the college can benefit from the instructor resources provided by McGraw-Hill, Course Technology, Power Web and other publisher-distribution agents. These materials include fully developed teacher resources including lecture notes, presentations, test banks, and online content and activities.

Online development will follow a strategic path that will focus on optimising student access to scarce campus resources. Several subject matter experts have been identified and approached to assist in the online course design and development process.

The full curriculum should be ready by September 2003 at a limited number of campuses. As online content and other remote synchronous delivery modes improve, the curriculum exposure should increase to campuses that will be able to provide resources identified as requiring localized activities and delivery.

The following schedule is proposed for the development of the required course content.

- Apr 1/02 –Contemporary Issues in eBusiness complete
- Sept 1/02 –Business Information Systems and Principles of E-Commerce complete
- Jan 1/03 – eBusiness Process Design and Project Management for IT Professionals complete
- Apr 1/03 – Sufficient courses available to complete both streams (may not have all four options in each online)
- Sept 1/03 – all courses available. Program review of all courses. Additional elective options under consideration.

Project Team

Contact Persons	Title	Organization	Scope
Core Team			
Stephen Parsons	Project Coordinator	NSCC	Core team Coordinator
Brian Dewey	Curriculum Consultant	NSCC	Core team/ School of Business
Susan Nelson	Manager of Part-time and Distance Education	NSCC	Core team/ Alternate Delivery
Carn Seamone	Faculty, Lunenburg Campus	NSCC	Core team/ Sales
Rita MacNeil	Faculty, AV Campus	NSCC	Core team/ eBusiness
Sandra Forsythe	Department Head	NSCC	Core team/ Lunenburg Campus
Guest Contributors			
Kevin Henderson	Student Services	NSCC	FID/CI
Roxanne McLeod			Research Methodology
Kelly McKnight	Council for Higher Learning	Dept. of Education	Department & Provincial support
Mike Kidney	Manager, Educational Technology, Virtual Campus	Virtual Campus	
Peter Konings	Manager, Customized Training	NSCC	Customized Training
Mary Elizabeth O'Toole	Manager, Instructional Design, Virtual Campus	NSCC	Online Development
Mike Smith	Faculty, Truro Campus	NSCC	Cross-faculty Coordination
Gerrie Masters	Senior Advisor, Labour Market Development	NSCC	Labour Market Development

Proposed Budget

PROGRAM DEVELOPMENT COSTS								
Design Phase	Campus/School	Location	Personnel	Rate/week	Weeks	FTE	One Course	Entire Program (14 courses)
Includes registration, course structure and delivery model	VC/SB	Depends	SME	1215	5	1	6075	85,050
Development Phase	Party Involved	Location	Personnel	Rate/Week	Weeks	FTE		
Repurposing course materials--interface design, course structure	VC	NS	Instructional Designer	1170	3	1	3510	49,140
Repurposing course materials	VC	NS	Production Assistant /Graphic Designer	705	4	1	2820	39,480
System Setup	Party Involved	Location	Personnel	Rate/Week	Weeks	FTE		
Creating Course Map and Transfer into TLM	VC	NS	Application Support Specialist	705	1	1	705	9,870
Server and infrastructure setup	VC	NS	Computer Systems Specialist	506	1	1	506	506
Software	ISV	-	ISV	5000			5000	5,000
SUPPORT COSTS								
Delivery Phase	Party Involved	Location	Personnel	Rate/Course		FTE		
Marketing/Advertising	NSCC	NS		\$300			300	4,200
R & D	SAA	NS		\$1000			1000	14,000
Training Coordinator for PTS/DE	SPT	NS	Training Coordinator	828	1	1	828	11,592
Project Management	SB	NS	Manager	1330	1	1	1330	18,620
							\$22,074	\$237,458
BREAKEVEN								
BREAK-EVEN (seats to sell to cover delivery, Design/Development)	NSCC	NS	Contemporary Issues in eBusiness	\$525	289.50	\$235.50		94 (8)⁶
BREAK-EVEN (seats to sell to cover delivery, Design/Development)	NSCC	NS	All Courses	\$925	289.50	\$635.50		374 (4)
Facilitator	NSCC	NS	Faculty	57.90/hr	60 hours	1	3,474	3,474
Program Cost	First Course (EBIZ1000)		525	1	525			
	Remaining 7		875	7	6,125			
	Total Program Cost				\$6,650			

⁶ Breakeven calculated on average class size of 12 participants. Single/first course (EBIZ1000) would require 8 class offerings to breakeven. However, developing the entire program given some fixed costs and a higher price point would require only 4 cohorts to reach breakeven. The \$525 cost of the EBIZ1000 is an introductory one that could be increased to normal levels in future, further reducing breakeven point. VCPS=Variable cost per student.

Appendix A

Research

Documents for this section in the printed version include:

Blank Survey Forms

Survey Summary Forms

Positioning Research & Document

All of these documents are available under the archive section on the project website

Appendix B

Reference

Documents in the printed version include:

On-line searches – jobs

E-Biz+ Examination Blueprint*

* E-Biz+ Examination Blueprint available under archive on the project

Appendix C

Program Proposal



**Nova Scotia
Community College**

Advanced Diploma in
eBusiness Management

Part-Time/ On-Line

Curriculum Document

© NSCC January 2003

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No part of this curriculum (or outline, module, etc.) may be reproduced or transmitted in any form or by any means without written permission from the Nova Scotia Community College.

Advanced Diploma in **eBusiness Management**

The Advanced Diploma in eBusiness Management is offered at:

campuses with required IT and Business facilities, faculty, and resources; and via online access. **Note:** Although significant on-line content is expected to be available by September 2003, some courses will require mandatory classroom/lab attendance. As on-line and CD-ROM content grows, it is hoped the program may eventually allow for more opportunities for distance delivery. On-line programs may also require one or more teleconference or face-to-face orientation(s) or presentation seminar(s).

Program Description

The Advanced Diploma in eBusiness Management provides graduates with specialized skills for the development of a company's Internet presence, electronic data transfer technologies, integration and automation of business processes and applications. Augmenting the existing business and/or technical skills that students will bring to the program, this eBusiness curriculum will add knowledge and competencies allowing graduates to manage and support many aspects of an organization's transition to eBusiness including research, web design, systems integration, logistics, technical requirements, distribution channels, and online sales and promotion.

The program will help prepare graduates to be effective technical project, and e-marketing managers capable of identifying critical business processes and of planning and developing appropriate business management systems and solutions. The program features an optional focus on either technical or strategic eBusiness Management.

Employment Opportunities

Since distributed systems and applications have become significant tools for both small and large organizations, graduates may find employment with a wide variety of businesses, including Internet providers, and Internet consulting services, management and marketing consultants, large retail businesses and IS divisions in government and non-government organizations.

Self-employment is also a viable option. There are significant opportunities to seek contracts with organizations in the areas of planning, designing, creating, and enhancing the eBusiness aspects of their business. Many candidates for this program will be managers looking to add eBusiness skills and knowledge to their existing credentials on their way to CTO, CIO, and Corporate IS Management positions.

PLA Statement

At the Nova Scotia Community College, we recognize that adults may have acquired college-level education through their personal studies, work and/or life experiences. You may be entitled to College credit(s) as a result of your skills, knowledge or competencies acquired through work experience, other education/training, volunteer activities and/or hobbies. Students may challenge for program entrance requirements, advanced standing, and/or course exemptions by submitting to a Prior Learning Assessment (PLA). Current assessment and challenge application fees will apply.

Entrance Requirements

- A diploma in Business Administration/ Management or Information Technology (2 or 3 years) from a recognized institution, **OR**
- A university degree in Business Administration, Information Technology, or Computer Science from a recognized institution, **OR**
- Equivalent work experience as determined through Prior Learning Assessment

Graduation Requirements

To receive an eBusiness Management Diploma, students must:

1. be accepted into the program meeting the minimum requirements above,
2. complete 5 required core courses / seminars,
3. complete 2 courses from the electives list in **BOTH** the technical and strategic stream, or receive credit exemption for appropriate consideration via PLAR,
4. complete and submit a practicum industry project or eBusiness case study,
5. meet pass requirements in all courses, seminars and projects (minimum overall 60%)

Course List

Core Content Courses (5 required)	Hours	Credits
Contemporary Issues in eBusiness (EBIZ 1000)	60	1.0
Business Information Systems (EBIZ 1310)	60	1.0
E-Commerce: Principles & Practice (EBIZ 2000)	60	1.0
eBusiness Process Design (EBIZ 3025)	60	1.0
IT Project Management for (EBIZ 3111)	60	1.0
Plus: Technical Stream (2 of the following)	Hours	Credits
Web Development Techniques (EBIZ 2100)	60	1.0
eBusiness Programming (EBIZ 3100)	60	1.0
Introduction to Multimedia Solutions (EBIZ 3105)	60	1.0
RDBMS (EBIZ 2105)	60	1.0
Plus: Strategic Stream (2 of the following)	Hours	Credits
Business Consulting (EBIZ 2121)	60	1.0
eBusiness Strategy and Planning (EBIZ 3110)	60	1.0
Web Marketing & Research (EBIZ 3200)	60	1.0
E-Commerce Security and Risk Management (EBIZ 3800)	60	1.0
PLUS: Practicum (1 of the following options)	Hours	Credits
Industry Project in eBusiness (EBIZ 4700)	60	1.0
Case Study in eBusiness (EBIZ 4710)	60	1.0

Note: Although courses generally may be taken in any order, several courses have pre-requisites as stated in the curriculum design document. Otherwise, the course "level" as indicated by the first digit in the course number is indicative of its complexity and difficulty. Students are advised to complete lower level courses before attempting those of advanced levels. Course format includes traditional classroom/lab delivery as well as on-line study according to the delivery chart on the following page. Courses with both formats allow optional delivery choices for students.

Course	On-Line*	Instructor Led/ Lab or Seminar
Contemporary Issues in eBusiness	✓	
Business Information Systems		✓
E-Commerce: Principles & Practice	✓	✓
eBusiness Process Design	✓	✓
Technical Project Management	✓	✓
Web Development Techniques		✓
eBusiness Programming		✓
Introduction to Multimedia Solutions		✓
RDBMS	✓	✓
Business Consulting	✓	
EBusiness Strategy and Planning	✓	✓
Web Marketing & Research	✓	
E-Commerce Security and Risk Management	✓	✓
Optional: eBIZ+ Boot Camp Seminar	✓	✓

* Some courses scheduled for on-line will not be available until Sept 2003. Please check with your local campus about classroom-delivered alternatives.

Program Outcomes

Upon successful completion of the Advanced Diploma in eBusiness Management, graduates will have demonstrated the ability to:

1. identify business models and estimate eBusiness ROI (Return on Investment)
2. sell the technical aspects of an E-Commerce website
3. conduct marketing research using internet tools (strategic stream)
4. develop Web marketing strategies and plans (strategic stream)
5. sell web services of designers and other Web companies
6. analyse business processes and develop an eBusiness plan (strategic stream)
7. employ standard and emerging technologies to manage customer relationships and supply chains (technical stream)
8. communicate eBusiness requirements to management and technical personnel
9. maintain a basic intranet website with eBusiness capabilities (technical stream)
10. apply product development strategies
11. design business processes for e-commerce website
12. contribute to projects that expand traditional business processes using eBusiness models
13. engage services of external eBusiness providers

Credential

Advanced Diploma in eBusiness Management

Completion of the requirements of the program will entitle the graduate to apply to the office of the Registrar for issuance of an *Advanced Diploma in eBusiness Management*. A full transcript will also be available from the Registrar.

EBIZ+

The content of the core requirements is aligned with CompTIA's blueprint for the EBIZ+ certification, previously owned by the Gartner Group. The college will be seeking to articulate this program for CompTIA's CAQC (CompTIA Authorized Quality Curriculum) program. Graduates of the program will be prepared to write and pass the EBIZ+ certification test. The cost of the first attempt for the eBIZ+ certification is included in the program cost if the student enrolls in the 2-day **eBIZ Boot Camp seminar** (seminar cost is \$250).

PMBok

The IT Project Management course is aligned with the material and content of the Project Management Book of Knowledge (PMBok) as are project management outcomes in other courses, like Business Consulting, Process Design and the Strategy and Planning course. Some institutions delivering PMI certified programs may accept these outcomes for Prior Learning Assessment and Credit Evaluation.

Anticipated Course Rotation

Term/Year	Core	Technical Stream	Strategic Stream
Winter 2003	Contemporary Issues in eBusiness E-Commerce: Principles and Practice	N/A	N/A
Spring 2003	Business Information Systems IT Project Management	Web Development	Web Marketing & Research Business Consulting
Fall 2003	EBusiness Process Design Contemporary Issues in eBusiness	eBusiness Programming RDBMS	eBusiness Strategy
Winter 2004	E-Commerce: Principles and Practice Business Information Systems	Intro to Multimedia Web Development	Security/ Risk Management Web Marketing & Research
Spring 2004	IT Project Management EBusiness Process Design	eBusiness Programming RDBMS	Business Consulting eBusiness Strategy
Summer 2004	EBIZ Boot Camp Seminar		
Fall 2004	Contemporary Issues in eBusiness E-Commerce: Principles and Practice	Intro to Multimedia Web Development	Security/ Risk Management Web Marketing & Research
Winter 2005	Business Information Systems IT Project Management	eBusiness Programming RDBMS	Business Consulting eBusiness Strategy
Spring 2005	EBusiness Process Design Contemporary Issues in eBusiness	Intro to Multimedia Web Development	Security/ Risk Management Web Marketing & Research
Summer 2005	EBIZ Boot Camp Seminar		

Course Descriptions

Business Consulting

The Business Consulting course prepares students with skills essential when working with various clients in an eBusiness setting. Students will write proposals, interview clients, and examine strategies for generating a client base for consulting engagements, particularly in the eBusiness arena.

Business Information Systems

This subject will provide a practical orientation to the effective management of business information resources, technologies and communication networks. Presented in the context of business process and logistics systems, the course will focus on the integration of computer- and internet-mediated applications and systems to accomplish and enhance core business objectives.

Contemporary Issues in eBusiness

This course provides an opportunity to study and analyze the dynamic nature of eBusiness and emerging technologies through the analysis and discussion of contemporary topics. Students will be required to discuss and analyze breaking eBusiness news through a structured approach that develops analytic, innovation, and business strategic skills.

eBusiness Industry Case Study

The eBusiness field requires people who can work in a team environment under pressure to complete projects. The eBusiness Industry Case Study allows the student to design and present an eBusiness proposal based on a real-life business problem. Students will be expected to complete a plan indicating the user interface and data design, compliance matrix, implementation details, budget and timeline for the solution.

eBusiness Industry Project

As an alternative to the eBusiness Case Study, the eBusiness Industry Project is a real-world application development, with a real client - managed and developed by student teams under direction of an experienced faculty and/or local IT mentor. Students will work in a multi-disciplinary team on a client solution maintaining complete project documentation. Where problems arise, students will be responsible for the resolution of the problem, including seeking, engaging, and coordinating technical assistance as needed.

eBusiness Process Design

The ability to assist clients in the analysis and design of business logistics and the re-design and automation of inefficient business processes is one of the most valuable skills in demand in the field of eBusiness. Processes like procurement, supply chain management, fulfillment and customer relationship management are the key focuses for business process automation.

eBusiness Programming (Enterprise Programming Applications)

Through this course, students are provided with the technical background required to work in a team environment in the marketing, development, and maintenance of an eBusiness application. Students will get exposure to advanced web techniques, CGI, scripting languages and the logistics of integrating eBusiness tools and emerging technologies into existing client/server infrastructure.

eBusiness Strategy & Planning

This course focuses on developing viable eBusiness models and strategies for new eBusiness startups, migrating existing businesses from “bricks” to “clicks” and for successfully integrating eBusiness tools and technologies into a firm’s legacy infrastructure and data. Students will be exposed to legal and policy issues, financial implications and resource planning through the development of an implementation plan focused on an eBusiness solution.

E-Commerce Security and Risk Management

The topic of security has been steadily increasing in importance within the eBusiness marketplace, fueled in part by the 9-11 tragedy in Manhattan. This course will cover security and enterprise risk management dealing with topics like regulatory issues, encryption and authentication, network and infrastructure security, payment gateway systems, and the use of intelligent agents to enhance security and reduce risk.

Introduction to Multimedia Solutions (Multimedia Design I)

Creating a fully interactive Web experience will enable a company to attract its audience and achieve a number of website goals – from “getting eyeballs” to “improving stickiness” to customer retention. This course covers a broad understanding of new media concepts, the design process and how to choose the most appropriate combination of new media for a project. Students learn how to work in a structured team and utilize needs analysis, project management, storyboarding, usability testing and much more. Hands-on experience with audio, QuickTime VR and Flash animation allows students to showcase their ideas interactively and develop communications tools that hold the attention of the Web site visitor.

E-Commerce: Principles and Practice

Students will explore the characteristics essential to the building successful e-commerce applications. They will analyze new technologies currently transforming business operations and influencing the new Internet economy. Students will identify key concepts that support online financial transactions and e-business processes.

IT Project Management

This course will provide students with an introduction to the principles of project management and methodologies for eBusiness development. The course will have two focuses: first, a broad look at the theoretical side of project management, its role within the organization, and the critical steps of planning, scheduling, and budgeting for IT-based projects; and finally, the practical application of Project software employed in an eBusiness setting. This course will be a blend of class discussions, individual presentations, lectures, quizzes, and case studies.

Relational Database Management Systems (RDBMS)

The linking of databases to remote processes, including websites, is an absolutely essential eBusiness concept. This course provides students with the skills needed to plan the development of dynamic, data-centric business solutions and includes the study of data modeling and normalization techniques, ODBC server configuration and scripting languages used to communicate remotely with centralized databases.

Web Marketing & Research

Students will engage in a critical examination of the Internet and its role as a significant marketing and communication tool for business planning and promotion. Students will critically examine and evaluate advertising, sales promotions, customer and public relations activities on business web sites to determine their effectiveness. Students will analyze the role of existing web sites to attract, interact and transact with consumers and other corporate stakeholders.

Website Development Techniques

This course develops the skills required to plan, design, create and manage an effective website. It will provide the student with a solid foundational understanding of HTML code and HTML editors like MS-Front Page, Visual InterDev, and Cold Fusion. Concepts surrounding the choices of interactive scripting languages and development environments (e.g. CF, PHP, ASP, XML, XHTML, DHTML) will also be introduced.

EBIZ+ Bootcamp

As a final preparation for those students interested in writing the CompTIA EBIZ+ accreditation exam, the **EBIZ+ bootcamp** will be held each summer as an intensive course preparation seminar over 2 or 3 days. Depending on demand, the boot camp may be held in several locations across the province. The seminar will focus on familiarization with CompTIA testing, review and updates of domain content, practice tests, and discussions with successful EBIZ+ graduates.

■ BUSINESS CONSULTING (EBIZ 2121)

HOURS: 60
CREDITS: 1.0

Course Description

The Business Consulting course prepares students with skills essential when working with various clients in an eBusiness setting. Students will write proposals, interview clients, and examine strategies for generating a client base for consulting engagements, particularly in the eBusiness arena.

Prerequisites

Computers for Business or equivalent training/ experience
Introduction to Business or equivalent training/ experience
Effective communication and presentation skills

Corequisites

None

Purpose

Business consulting requires a set of skills that are valuable to businesses both within their ranks and as out-sourced from specialist companies. Consulting services are in significant demand by businesses seeking high quality business analysis and advisory services. This course has two aims – the development of viable entrepreneurial skills for eBusiness practitioners, and the building of strong analytical and presentation skills critical to developing subject matter expertise in consulting. A focus on the eBusiness consulting engagement provides advanced application of consulting skills for the eBusiness client.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

1) Examine the role of the business consultant

Enabling Outcomes

- a) research local consultant businesses and markets
- b) describe the activities of various kinds of business consultants
- c) identify the requirements to start a consulting business
- d) distinguish eBusiness consulting engagements from other consulting activities.

2) portray a professional image

Enabling Outcomes:

- a) conduct meeting preparation (research, set-up, etc.)
- b) prepare professional quality documentation
- c) establish credibility

- d) employ active listening techniques
 - e) apply ethical principles
- 3) write proposals
Enabling Outcomes:
- a) evaluate samples of prepared business proposals
 - b) define the major sections of a solid eBusiness proposal
 - c) prepare compliance documentation for RFPs and RFQs for eBusiness services
- 4) prepare an informal business plan
Enabling Outcomes:
- a) perform an environmental analysis
 - b) evaluate business plans using case studies
 - c) consider legal issues including contracts, liability, and insurance
- 5) capture business/client requirements
Enabling Outcomes:
- a) interview clients
 - b) examine CRM tools used to capture and analyze customer behavior
- 6) apply personal selling skills
Enabling Outcomes:
- a) demonstrate methods for overcoming objections and scepticism.
 - b) articulate processes for generating and qualifying leads in the eBusiness consultancy market space.
 - c) prepare invoices and follow-up billing/collection documentation
 - d) prepare to conduct a client project review
 - e) apply techniques for business development (political, networking, tenders)
- 7) apply a portfolio approach to the personal management of learning
Enabling Outcomes
- a) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Text

The Seven Cs of Consulting, Mick Cope, Prentice-Hall, 2000 ISBN 0 273 64511 0
IT Consulting Best Practices: 12 Keys to Engagement Success, Sanjiv Purba, McGraw-Hill, 2002 ISBN 0072226250

■ CONTEMPORARY ISSUES IN EBUSINESS (EBIZ 2005)

HOURS: 60
CREDITS: 1.0

Course Description

This course provides an opportunity to study and analyze the dynamic nature of eBusiness and emerging technologies through the analysis and discussion of contemporary topics. Students will be required to discuss and analyze breaking eBusiness news through a structured approach that develops analytic skill, innovation, opportunism and business strategy.

Prerequisites

Introduction to Business (or equivalent training or experience)
Introduction to Computers (or equivalent training or experience)
Internet Skills

Corequisites

None

Purpose

This course will accomplish two separate purposes – the first, to introduce students to eBusiness, its effect on the world of Business, and the types of eBusiness IT Projects currently being implemented. The second is to help students develop a framework in which to recognize, analyze and plan strategy and policy around the threats and opportunities that emerging eBusiness technologies present to Business firms. This course is also offered as an elective to the 2-year Business administration diploma.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) Define eBusiness and describe the nature and scope of typical eBusiness projects

Enabling Outcomes

- a) Identify and define fundamental terms and concepts used in eBusiness
 - i) WWW & HTTP
 - ii) Internet, intranet, extranet
 - iii) ISP, ASP, BSP, MSP (the service provider markets)
 - iv) Portals, vortals, VPNs
 - v) Security, encryption, privacy
 - vi) Middleware
 - vii) Network Infrastructure
 - viii) Data warehousing/ mining
 - ix) Transactional data transfer (SET, EFT, EBT, EDI)
 - x) LAN/WAN, bandwidth
 - xi) Data and network security (SSL, Encryption, firewalls)

- b) Describe the current types of eBusiness models being applied today
 - i) B2B
 - ii) B2C
 - iii) B2E
 - iv) B2G (GOL)
 - v) Bricks & mortar, pure-play (dot-com), bricks & clicks

- c) Identify the Business processes being targeted for eBusiness and the kinds of solutions being implemented to automate those processes
 - i) CRM
 - ii) SCM
 - iii) Infrastructure Management
 - iv) Logistics Management
 - v) Knowledge Management
 - vi) M-Business
 - vii) E-Learning
 - viii) E-Commerce

- 2) Demonstrate a comprehensive understanding of the wide range of emerging technologies and a clear perspective of what is in store for the near future

Enabling Outcomes

 - a) Discuss articles of emerging technologies and discuss possible opportunities and threats from these technology and market changes. Current candidate technologies for this would include:
 - i) Mobile e-Commerce/ M-Business
 - ii) Collaboration Networks
 - iii) Voice over IP (VoIP)
 - iv) Optical Networking
 - v) Networking Convergence

- 3) Make sound decisions regarding which technologies are becoming popular and are projected to become extremely important in the future

Enabling Outcomes

 - a) Examine market adoption trends for emerging technologies
 - b) Discuss parameters for risk and investment in emerging technologies
 - c) Develop scenarios for strategic implementation of technology opportunities

- 4) apply a portfolio approach to the personal management of learning

Enabling Outcomes

 - a) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Text

EBusiness 02/03 (Annual Editions), Robert W. Price - Editor, McGraw-Hill, 2002

ISBN 0 07 243115 6

Other/ Collections: See the Full Resource List

■ E-BUSINESS INDUSTRY CASE STUDY (EBIZ 4710)

HOURS: 60
CREDITS: 1.0

Course Description

The eBusiness field requires people who can work in a team environment under pressure to complete projects. The eBusiness Industry Case Study allows the student to design and present an eBusiness proposal based on a real-life business problem. Students will be expected to complete a plan indicating the user interface and data design, compliance matrix, implementation details, budget and timeline for the solution.

Prerequisites

Completion of all core and stream elective courses for the program.

Co-requisites

None

Purpose

The eBusiness Industry Case study is one of two options for the completion of the terminal practical assignment. The purpose is to provide integration of several eBusiness management skills in a practical project-based environment and to build and reinforce team performance skills including effective collaboration, conflict resolution and consensus-building skills. Students will achieve objectives by working in a multi-disciplinary team on a client solution and will hold regular meetings with their client maintaining complete project documentation. Where problems arise, students will be responsible for the resolution of the problem, including seeking and engaging technical assistance where needed.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

1) plan for an eBusiness project

Conditions: under the joint supervision of a mentor and faculty member
in a team-based project environment

Enabling Outcomes

- a) research an industry partner.
- b) develop an RFP Response;
- c) participate in preparation of a project plan
- d) communicate project objectives, progress, and results to project teams, management, clients, contractors, and other stakeholders;
- e) develop standards for development, deployment, training and project documentation;

- f) prepare a compliance matrix from a prepared RFP;
 - g) evaluate project results.
- 2) apply a portfolio approach to the personal management of learning
- Enabling Outcomes
- a) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Other Information

Cases are selected on the basis of educational benefit to the student(s). Projects must be relevant to the curriculum and to the learning outcomes that have been articulated for the Industry Case Study. Where possible, a local industry mentor or Case Study Supervisor will be assigned to provide advice, support, and evaluation. This mentor should be a local eBusiness provider who is willing to provide such support. The opportunity for the mentor will be the demonstration of capability and the opportunity to leverage small, discreet projects by the Industry partner into larger scale applications in future. Where an appropriate mentor is not available, faculty will act as case study supervisor.

Faculty must approve all projects. Caution should be used to ensure that the project scope does not exceed that of a typical 60-hour project.

Methods of Evaluation

This course is a prerequisite to graduation from the Advanced Diploma in eBusiness Management. Students will be evaluated by their finished project, their ability to work together, their project documentation, and ability to meet the course objectives.

The Industry partner/mentor or Case Study Supervisor will be required to fill out an evaluation form, which will be submitted to the Instructor. Students will receive a Pass or Fail on the project portion of this course.

■ **E-BUSINESS INDUSTRY PROJECT (EBIZ 4700)**

HOURS: 60
CREDITS: 1.0

Course Description

As an alternative to the eBusiness Case Study, the eBusiness Industry Project is a real-world application development, with a real client - managed and developed by student teams under direction of an experienced faculty and/or local IT mentor. Students will work in a multi-disciplinary team on a client solution maintaining complete project documentation. Where problems arise, students will be responsible for the resolution of the problem, including seeking, engaging, and coordinating technical assistance as needed.

Prerequisites

Completion of all core and stream elective courses for the program.

Co-requisites

None

Purpose

The eBusiness Industry Project is one of two options for the completion of the terminal practical assignment. The purpose is to provide integration of several eBusiness technical skills in a practical project-based environment and to build and reinforce team performance skills including effective collaboration, conflict resolution and consensus-building skills. Students will achieve objectives by working in a multi-disciplinary team on a client solution and will hold regular meetings with their client maintaining complete project documentation. Where problems arise, students will be responsible for the resolution of the problem, including seeking and engaging technical assistance where needed.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) implement an eBusiness project
Conditions: under the joint supervision of a mentor and faculty member
in a team-based project environment
Enabling Outcomes
 - a) research an industry partner.
 - b) develop a project proposal;
 - c) participate in team formation tasks

- d) communicate project objectives, progress, and results to project teams, management, clients, contractors, and other stakeholders;
 - e) maintain a schedule of all meetings;
 - f) implement plans within established constraints;
 - g) monitor progress including anticipated changes and modifying plans as necessary;
 - h) evaluate project results.
- 2) apply a portfolio approach to the personal management of learning
- Enabling Outcomes
- a) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Other Information

Projects are selected on the basis of educational benefit to the student(s). Projects must be relevant to the curriculum and to the learning outcomes that have been articulated for the Industry Project. Where possible, a local industry mentor will be assigned to provide advice, support, and evaluation. This mentor should be a local eBusiness provider who is willing to provide such support. The opportunity for the mentor will be the demonstration of capability and the opportunity to leverage small, discreet projects by the Industry partner into larger scale applications in future. Where an appropriate mentor is not available, faculty will act as project supervisor.

Faculty must approve all projects. Caution should be used to ensure that the project scope does not exceed that of a typical 60-hour project.

Methods of Evaluation

This course is a prerequisite to graduation from the Advanced Diploma in eBusiness Management. Students will be evaluated by their finished project, their ability to work together, their project documentation, and ability to meet the course objectives.

The Industry partner/mentor will be required to fill out an evaluation form, which will be submitted to the Instructor. Students will receive a Pass or Fail on the project portion of this course.

■ **EBUSINESS PROCESS DESIGN
(EBIZ 3025)**

**HOURS: 60
CREDITS: 1.0**

Course Description

The ability to assist clients in the analysis and design of business logistics and the re-design and automation of inefficient business processes is one of the most valuable skills in demand in the field of eBusiness. Processes like procurement, supply chain management, fulfillment and customer relationship management are the key focuses for business process automation.

Prerequisites

Introduction to Business (or equivalent training or experience)
Contemporary Issues in eBusiness
(Training or experience with either or both Organizational Behaviour and Systems Analysis would be recommended)

Co-requisites

None

Purpose

Under development

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) design strategies for each stage of the business process
Conditions: in an IT-enhanced environment
Enabling Outcomes
 - a) analyse primary processes and logistics
 - b) define eBusiness Opportunities
 - c) determine Return on Investment (ROI)
 - d) examine process modeling, analysis, and simulation tools (BPR software)
 - e) consider risk and change management issues

- 2) design business processes for a simulated business
Conditions: using case studies
Enabling Outcomes
 - a) identify and articulate primary business processes
 - i) company infrastructure
 - ii) identifying customers

- iii) marketing and selling
 - iv) designing products
 - v) purchasing materials and supplies
 - vi) delivery strategies
 - vii) providing after sales service and support
 - viii) human resource management
 - ix) technology development
- 3) describe the business units that support a firm's primary activities
- a) finance and administrative
 - b) developing technologies
 - c) network and operational infrastructure
 - d) human resources
- 4) apply a portfolio approach to the personal management of learning
- Enabling Outcomes
- i) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Text

Internet Business Models and Strategies, Afuah and Tucci, Publisher: McGraw-Hill, 2001

Redesigning Enterprise Processes for E-Business, Sawi, Publisher: McGraw-Hill, 2001

■ EBUSINESS STRATEGY & PLANNING (EBIZ 3005)

HOURS: 60
CREDITS: 1.0

Course Description

This course focuses on developing viable eBusiness models and strategies for new eBusiness startups, migrating existing businesses from “bricks” to “clicks” and for successfully integrating eBusiness tools and technologies into a firm’s legacy infrastructure and data. Students will be exposed to legal and policy issues, financial implications and resource planning through the development of an implementation plan focused on an eBusiness solution.

Prerequisites

Introduction to Business (or equivalent training or experience)
Recommended: Contemporary Issues in eBusiness

Co-requisites

eBusiness Process Design

Purpose

This eBusiness Strategy and Planning course provides substantial strategic context for the eBusiness strategy stream. It provides an alternative view of the process of business start-up preparation by examining the issues within the framework of an IT-enhanced business model. Many critical and fundamental elements of eBusiness are introduced – from legal perspectives to infrastructure planning, legacy integration to logistics migration.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

1. Articulate important strategic planning factors to be considered when launching an eBusiness initiative.
Enabling Outcomes
 - a. Identify and understand fundamental terms and concepts used in eBusiness
 - b. Recognize revenue potential and costs of eBusiness models being applied today
 - i. e-commerce
 - ii. Business models - B2B, B2C, B2E, GOL, C2B, C2C
 - iii. Brick & mortar vs pure-play vs bricks & clicks
 - iv. Processes – CRM, Logistics/ SCM, ERP, Provisioning, collaborative commerce (C-Commerce)
 - v. Process models – migration, integration, aggregation
 - vi. Back office/ front office
 - c. Describe key marketing considerations relative to launching an eBusiness initiative.
 - i. E-Marketing prospecting and retention strategies
 - ii. Positioning
 - iii. Branding
 - iv. E-Marketing strategies (1 to 1, push/pull, participatory, viral)

- v. Customer centric – customized or adaptive content
- vi. Localization/globalization
- vii. Product/service definition and development
- viii. E-Tailing & online consumer behaviour
- ix. Pricing strategies
- x. Supply Chain Management (SCM) and disintermediation
- xi. Media (website, email, traditional marketing)
- xii. Customer Relationship Management (CRM) solutions
- xiii. E-Commerce online sales, catalogues, website management tools

2. Develop and Implement an eBusiness Plan

Enabling Outcomes

- a. Explore internet business models
- b. Develop a business case/ model
- c. Conduct SWOT analysis
- d. Develop operations plan, BPR
- e. Determine infrastructure requirements
- f. Conduct cost/benefit analysis (ROI)
- g. Develop revenue plan & pro forma statements
- h. Identify capitalization requirements
- i. Create and manage an e-team
- j. Identify strategic partners
- k. Implement best practices (C-Commerce, Consumerism)

3. Apply eBusiness policies, regulation, and legislation

Enabling Outcomes

- a. Identify key information sources
- b. Identify governing bodies
- c. Determine effect of local and international legislation
- d. Document compliance with privacy legislation
- e. Document compliance with Intellectual Property legislation
- f. Document compliance with local and international licensing requirements
- g. Document compliance with taxation policies

4. Maintain Quality Control

Enabling Outcomes

- a. Examine policies and processes for QA and Continuous improvement
- b. Identify issues relating to maintenance in a 24x7x365 environment
- c. Describe deployment and support issues
 - i. Change Management
 - ii. Business Process Re-engineering
 - iii. Front office/back office connectivity
 - iv. Shipping and returns policy
 - v. Capacity planning
 - vi. Content management
- d. Perform internal and acceptance testing
- e. Develop procedures to monitor application performance
 - i. Web site statistics
 - ii. Transaction analysis
 - iii. Inventory churn and product gap analysis
 - iv. Load testing and bandwidth analysis

Recommended Text

Internet Business Models and Strategies, Afuah and Tucci, Publisher: McGraw-Hill, 2001

e-Business & e-Commerce for Managers, Deitel, Deitel, and Steinbuhler, Prentice-Hall, 2001

■ **EBUSINESS PROGRAMMING/ ENTERPRISE PROGRAMMING APPLICATIONS (EBIZ 3100)**

HOURS: 60
CREDITS: 1.0

Course Description

Through this course, students are provided with the technical background required to work in a team environment in the marketing, development, and maintenance of an eBusiness application. Students will get exposure to advanced web techniques, CGI, scripting languages and the logistics of integrating eBusiness tools and emerging technologies into existing client/server infrastructure.

Prerequisites

Website Development Techniques
E-Commerce: Principles & Practice

Corequisites

eBusiness Process Design

Purpose

The course will investigate different kinds of distributed applications including e-commerce, data publishing and portals. Building on the website development techniques course, students will receive hands-on exposure to using scripting languages, server-side components, and third party applications to access, manipulate and manage data assets. In a broader sense, the course will help students to understand how to plan and leverage enterprise applications in the process of various business operations.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

1. Explain fundamental terms and concepts relating to programmatic issues in eBusiness Application development.

Enabling Outcomes

- a. Define terms relating to programming eBusiness applications & websites
 - i. HTML, XML, SOAP, UDDI
 - ii. CGI
 - iii. Scripting languages (ASP, VBScript, Perl, JavaScript)
 - iv. Programming Languages (VB, C++, C#, Java, COBOL)
 - v. Object-oriented design and programming
 - vi. Functions, subs, and procedures
 - vii. Data types
 - viii. Methods and Properties
 - ix. Integration, customization
 - x. Methodology

- xi. Application Programming Interfaces (APIs)
 - xii. Software Development Kits (SDKs)
 - xiii. Visual Interface Development Environment (IDE)
- b. Identify and articulate features of applications and emerging technologies being employed to provide eBusiness solutions.
- i. SCM (logistics management, shipping, receiving, fulfillment, ordering, etc.)
 - ii. CRM (Sales Force Automation, Call Centers & Help desk applications, etc.)
 - iii. E-commerce (catalogues, payment gateways, back-office, taxation systems)
 - iv. Infrastructure management (legacy systems integration, knowledge management, collaborative computing, Intranet/Extranet, network communications, Mobile computing/ M-Business)
 - v. ERP/ERS
2. Employ effective design standards in the development of client/user interfaces.
- Enabling Outcomes
- a. Identify the effect of client/user interface design
- i. Perception of added value
 - ii. Personalization
 - iii. Performance
 - iv. Ease-of-use
 - v. Navigation
 - vi. Intuitive function
 - vii. Internationalization/ globalization
- b. Use design tools to develop web-based interfaces
- i. Frontpage/ Visual InterDev/ Netscape Composer
 - ii. Cascading Style Sheets (CSS)
 - iii. DHTML
 - iv. Forms design
3. Connect web-based interfaces to back-end data sources
- Enabling Outcomes
- a. Describe fundamental network technology concepts relating to data access and transfer via web
- i. CGI, object brokers, servlets, portlets, COM/DCOM, ODBC
 - ii. N-Tiered applications, middleware
 - iii. Web servers, server components
 - iv. Protocols (HTTP, FTP, SOAP)
 - v. Encryption, SSL
 - vi. Interoperability
 - vii. Data storage, mining, warehousing
- b. Develop a web application that accesses a remote database
- Conditions: Using a scripting language, server objects, and an SQL-based database (Access, SQL server, MySQL, Oracle, etc.)
- i. Design an input form for inputting a new record into a database
 - ii. Design an interface that displays data drawn from the database
 - iii. Update a record using a web page and server-side script.

Recommended Texts

Schwalbe. *Information Technology Project Management*. Course Technology
(ISBN: 0-7600-1180-X)

Deitel, Deitel, & Nieto. *e-Business & e-Commerce, How to Program*. Prentice-Hall
(ISBN: 0-13-028419-X)

■ **E-COMMERCE: PRINCIPLES & PRACTICE
(EBIZ 2000)**

**HOURS: 60
CREDITS: 1.0**

Course Description

Students will explore the characteristics essential to the building successful e-commerce applications. They will analyze new technologies currently transforming business operations and influencing the new Internet economy. Students will identify key concepts that support online financial transactions and e-business processes.

Prerequisites

Computers for Business (or equivalent)
Contemporary Issues in eBusiness

Corequisites

None

Purpose

E-Commerce is a sub-set of eBusiness involving the use of the internet and the web to transact business – more formally, digitally enabled transactions between and among organizations and individuals. This is an introductory course in E-Commerce through which students will learn fundamental concepts and practices of E-Commerce. This course is desirable for anyone interested in the field of E-Commerce, and is required for students seeking the Advanced Diploma in eBusiness Management.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) identify client needs and estimate ROI of an e-commerce solution
- 2) describe the technical aspects of an E-Commerce application
- 3) develop Web marketing strategies and plans
- 4) promote web services of designers and other Web companies
- 5) plan the development of an e-commerce website
 - a) examine user interface design and electronic commerce web site promotion.
 - b) analyze server environments and software choices.
 - c) discuss methods for creating a secure e-commerce environment.
 - d) investigate the various methods for accepting and processing electronic payments.
 - e) study the international, legal, and ethical issues conducted in e-commerce.
- 6) apply a portfolio approach to the personal management of learning

Enabling Outcomes

- i) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Text

Selling On-Line: How to become a successful e-Commerce Merchant Jim Carroll and Rick Broadhead, MacMillan
Canada (1999)

■ INTRODUCTION TO MULTIMEDIA SOLUTIONS (EBIZ 3105)

HOURS: 60
CREDITS: 1.0

Course Description

Creating a fully interactive Web experience will enable a company to attract its audience and achieve a number of website goals – from “getting eyeballs” to “improving stickiness” to customer retention. This course covers a broad understanding of new media concepts, the design process and how to choose the most appropriate combination of new media for a project. Students learn how to work in a structured team and utilize needs analysis, project management, storyboarding, usability testing and much more. Hands-on experience with audio, QuickTime VR and Flash animation allows students to showcase their ideas interactively and develop communications tools that hold the attention of the Web site visitor.

Prerequisite

Website Development Techniques (or equivalent)

Corequisites

None

Learning Outcomes

Upon successfully completing this course, students will have demonstrated the ability to:

1. Develop and design multimedia internet presentation for a target audience that uses design fundamentals effectively
 - Enabling Outcomes
 - a. layout and design webpages using thumbnails and story boards
 - b. understand and create effective layouts using design fundamentals
 - c. plan story by use of story board – consistency, logical design flow
 - d. sketch thumbnails ideas – choose best design stream to develop
 - e. plan layout using design fundamentals
2. Create simple flash animation segment using text, sound and web graphics (vector and bitmap)
 - a. Timelines
 - b. Layers
 - c. Sound recording
 - d. Sound editing
 - e. Libraries
3. Create simple digital video – using Premiere to compile edit

- a. Use of video camera
- b. Camera angles / 300m framing
- c. Lighting checklist intro to premiere software
4. Demonstrate an understanding of each element of multimedia for the Web and an ability to evaluate the advantages and disadvantages of each element.
5. Use appropriate multimedia solutions for particular solutions.
 - a. Calculate cost of adding or developing multimedia elements
6. Outline the process involved in creating a multimedia or Web product.
7. Produce and integrate multimedia (audio, video and Flash) components in a Web project.
8. Evaluate software applications and be able to choose which best suits a situation.
9. Apply a portfolio approach to the personal management of learning

Enabling Outcomes

- a. develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Text

Flash 5 Bible or Flash 5 for Web professionals or Flash 5 visual quickstart
Design essentials or design for non-designers
Premiere and visual quickstart

■ **RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS) (EBIZ 2105)**

HOURS: 60
CREDITS: 1.0

Course Description

The linking of databases to remote processes, including websites, is an absolutely essential eBusiness concept. This course provides students with the skills needed to plan the development of dynamic, data-centric business solutions and includes the study of data modeling and normalization techniques, ODBC server configuration and scripting languages used to communicate remotely with centralized databases.

Prerequisites

Familiarity with basic database concepts

Corequisites

None

Purpose

Under development

Learning Outcomes

Upon successful completion of the Relational Database Management System course, students will have demonstrated the ability to.

1. Apply appropriate data design principles in planning the development of an enterprise database
2. Examine data modelling techniques for designing relational databases
3. Normalize database models to the third normal form
4. Create database and component tables using relationships, indexes, and queries
 - a) using effective table structures
- 3) Design and construct objects that feature user interaction and information retrieval-forms, reports, and menus
- 4) Develop database and user documentation for database program files
- 5) Analyze the structure of an existing data warehouse
- 6) Apply a portfolio approach to the personal management of learning
 - i) Enabling Outcomes
 - ii) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Resources

Coronel, Rob. *Database Systems Design: Implementation and Management, 3rd ed.* Course Technologies.
(ISBN: 0-7600-4904-1)

Kroenke, David. *Database Processing Fundamentals: Design and Implementation, 6th ed.* Prentice Hall.
(ISBN: 0-13-737842-4)

Preston, John, Sally Preston & Robert Ferrett. *ACCESS97: Essentials Expert.*
(ISBN: 1-58076-057-0)

Preston. *Access 97: Mouse Essentials.*

Adamski, Finnegan & Hammel. *New Perspectives on MS-Access 2000: Comprehensive.*
ISBN: 0-7600-7090-3

Recommended Text

tba

■ **WEB MARKETING & RESEARCH (EBIZ 3200)**

HOURS: 60
CREDITS: 1.0

Course Description

Students will engage in a critical examination of the Internet and its role as a significant marketing and communication tool for business planning and promotion. Students will critically examine and evaluate advertising, sales promotions, customer and public relations activities on business web sites to determine their effectiveness. Students will analyze the role of existing web sites to attract, interact and transact with consumers and other corporate stakeholders.

Prerequisites

Introduction to Marketing (or equivalent)
Computers for Business (or equivalent)

Corequisites

None

Purpose

Under development

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

1. Examine the role of eBusiness and eMarketing in the overall corporate marketing mix as well as strategies and techniques to select, implement and evolve appropriate activities.
2. Use the Net effectively and efficiently for market research, including Web-based environmental scanning and an explanation of how to evaluate the quality of Web data.
 - a) Employ appropriate standards for internet research
3. Apply Web search strategies to collect and evaluate secondary and primary data, and provide ideas about evaluating the quality of online data.
 - a) Determine appropriate search engine search techniques
 - b) Apply various search techniques and language (e.g. Boolean search, etc.)
4. Explore the legal issues of privacy, security, and intellectual property.
5. Research the characteristics and behavior of the cyberspace customer including demographics, psychographics, and how to maintain customer relations.

6. Use competitive pricing data on the Web to determine factors that influence on-line versus off-line pricing strategies.
7. Compare and contrast the distribution channels of the traditional bricks and mortar store front to the electronic storefront.
8. Investigate online marketing tools used by web sites to attract, interact and transact with customers.
 - a) e-mail
 - b) banners
 - c) interstitials
 - d) sponsorships & affiliate programs
 - e) coupons, free product samples etc.
 - f) spyware (behaviour based ad-serving applications)
 - g) search engine placement
 - h) prospecting tools
 - i) direct mail tools and techniques
9. Examine the convergence of marketing techniques in online, offline and dual-focus marketing campaigns.
10. Apply a portfolio approach to the personal management of learning
Enabling Outcomes
 - iii) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Recommended Text

tba

■ **WEBSITE DEVELOPMENT TECHNIQUES (EBIZ 2100)**

HOURS: 60
CREDITS: 1.0

Course Description

This course develops the skills required to plan, design, create and manage an effective website. It will provide the student with a solid foundational understanding of HTML code and HTML editors like MS-Front Page, Visual InterDev, and Cold Fusion. Concepts surrounding the choices of interactive scripting languages and development environments (e.g. CF, PHP, ASP, XML, XHTML, DHTML) will also be introduced.

Prerequisites

Computers for Business (or equivalent)

Corequisites

None

Purpose

Under development

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

1. Establish business objectives and determine appropriate scope and options for website development.
2. Plan and create a new web site
 - b) on a web server
 - c) that applies the basics of graphic design including: creating balance, using colour, maintaining a corporate image, and avoiding over use of graphics, colours and animations

Enabling Outcomes

- i) input the HTML code necessary to create, revise, and publish a functional web site
 - ii) use HTML Editor
3. apply correct HTML syntax to the development of Web pages including: links, images, forms, frames, shared borders, and a theme
 - i) incorporate principles of hierarchy, structure, storyboards and task lists into websites

- ii) use office components and styles within a web site
 - iii) describe simple JavaScript-run interactive tools for use in web sites
 - iv) create feed back forms to be used for interactive customer relations
 - v) apply website updating and maintenance techniques
4. Articulate the benefits and challenges of integrating a database with a website
5. Evaluate hosting options
- Enabling Outcomes
- b) Evaluate internal technical capacity
 - c) Determine immediate and long-term application/website hosting requirements
 - d) Evaluate in-source vs out-source benefits
6. apply a portfolio approach to the personal management of learning
- Enabling Outcomes
- i) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Resources

Microsoft FrontPage 2000 or XP (2002), CD Rom Burner, Digital Camera, access to web server
Microsoft Visual Interdev (Visual Studio)
Macromedia Cold-Fusion Studio

Recommended Text

Evans, Jessica & Roger Hayden (2000). *New Perspectives on Microsoft Frontpage 2000 – Comprehensive*.
Course Technology (ITP Nelson).
ISBN: 0760064725

■ BUSINESS INFORMATION SYSTEMS (EBIZ 1310)

HOURS: 60
CREDITS: 1.0

Course Description

This subject will provide a practical orientation to the effective management of business information resources, technologies and communication networks. Presented in the context of business process and logistics systems, the course will focus on the integration of computer- and internet-mediated applications and systems to accomplish and enhance core business objectives.

Prerequisites

Computers for Business (or equivalent)

Corequisites

RDBMS

Purpose

A fundamental concept of eBusiness is the leveraging of information systems to provide decision support and enterprise resource planning tools to organizational management. Developing, configuring, and mining information systems are critical activities to provide this support. The purpose of this course is to expose students to a broad range of projects and technologies being used today, evaluate their effectiveness and potential return on investment (ROI).

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) Articulate the key elements of organizational Information Systems (IS) including:
 - a) Hardware (Input, processing and output)
 - b) Software
 - c) Information collection and analysis systems
 - d) Telecommunications and network systems
- 2) Describe the major types of applications in use in organizations consuming eBusiness products, services, and technologies

Enabling Outcomes

- a) Research and identify a number of web service vendors in each of the major functional eBusiness areas:
 - i) E-marketing and e-Commerce
 - ii) IT (infrastructure) Management & e-Strategy
 - iii) Knowledge Management & e-Publishing (Content Management)
 - iv) Logistics and Supply Chain Management (SCM)
 - v) Client Acquisition and Customer Relationship Management (CRM)

- 2) Articulate key deployment and support considerations needed to sustain key business processes affected by an eBusiness implementation

Enabling Outcomes

- a) Research and discuss challenges and factors for deployment and support including:
- i) Change Management
 - ii) Business Process modelling
 - iii) Process Improvement (Back Office to Front Office)
 - iv) Financial Strategy issues
 - v) Capacity Planning
 - vi) Integration, configuration, application
 - vii) Content Management

- 3) Recognize and explain fundamental volume and performance monitoring issues

Enabling Outcomes

- a) Explore key web monitoring concepts including
- i) Transactional analysis
 - ii) Monitoring, measurement and evaluation
 - iii) Unlimited and unpredictable audience
 - iv) Bandwidth analysis
 - v) Quality of Service/ Quality Assurance (QA)
 - vi) Mining demographics, preferences settings, etc

- 4) Explain fundamental concepts relating to data management and data usage in supporting eBusiness technology solutions

Enabling Outcomes

- a) Define the following data-related eBusiness terms
- i) Interface to legacy systems
 - ii) Data Mining/ OLAP
 - iii) Data Warehousing
 - iv) Data integrity
 - v) Transactional data conversion
 - vi) Data synchronization in distributed environment
 - vii) Database Management/ Administration

- 5) apply a portfolio approach to the personal management of learning

Enabling Outcomes

- i) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Resources

Recommended Text

O'Brien, James A.. *Management Information Systems – 5th Edition*. McGraw-Hill.
ISBN: 0-07-244078

Other/ Collections:

Ralph Stair and George Reynolds. *Principles of Information Systems – 5th Edition*. Course Technology (ITP Nelson).
ISBN: 0-619-03357-6

■ IT PROJECT MANAGEMENT (EBIZ 3111)

HOURS: 60
CREDITS: 1.0

Course Description

This course will provide students with an introduction to the principles of project management and methodologies for eBusiness development. The course will have two focuses: first, a broad look at the theoretical side of project management, its role within the organization, and the critical steps of planning, scheduling, and budgeting for IT-based projects; and finally, the practical application of Project software employed in an eBusiness setting. This course will be a blend of class discussions, individual presentations, lectures, quizzes, and case studies.

Prerequisites

Computers for Business (or equivalent training or experience)
Introduction to Business (or equivalent training or experience)

Corequisites

None

Purpose

The future of many organizations, and particularly those employing eBusiness depends on their ability to harness the power and shape the direction of IT investment; so good project managers are in high demand. Understanding both the theory and the process of project planning and implementation are key outcomes of this course.

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) Describe the conceptual framework described by the Project Management Book of Knowledge (PMBOK).

Enabling Outcomes

- a) Identify the nine project management knowledge areas
 - b) Articulate the five project management process groups
- 2) Describe a typical project management methodology (such as GUIDS) for an IT project
- #### Enabling Outcomes
- a) Compare various IT project methodologies in contemporary use
- 3) Correctly use Project Management terminology in the development of a project plan
 - i) Milestones
 - ii) critical path
 - iii) slack, effort & duration
 - iv) predecessor & successor

- 4) Create a simple IT project plan

- a) that includes at least 20 activities & 4 milestones
- 5) Input the project plan into a Project Management software application
- 6) Modify a project plan
 - a) to capture changes to project constraints
- 7) apply a portfolio approach to the personal management of learning
 - Enabling Outcomes
 - i) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Resources

A Guide to the Project Management Body of Knowledge, Project Management Institute Standards Committee

Recommended Text

Kathy Schwalbe (2002). *Information Technology Project Management*. Course Technology (ITP Nelson). – includes 120-day trial version of Microsoft Project 2000.
ISBN: 0-619-03528-5

■ **E-COMMERCE SECURITY AND RISK MANAGEMENT
(EBIZ3800)**

**HOURS: 60
CREDITS: 1.0**

Course Description

The topic of security has been steadily increasing in importance within the eBusiness marketplace, fueled in part by the 9-11 tragedy in Manhattan. This course will cover security and enterprise risk management dealing with topics like regulatory issues, encryption and authentication, network and infrastructure security, payment gateway systems, and the use of intelligent agents to enhance security and reduce risk.

Prerequisites

Contemporary Issues in eBusiness
Business Information Systems
E-Commerce: Principles & Practice

Corequisites

None

Purpose

Learning Outcomes

Upon successful completion of this course, students will have demonstrated the ability to:

- 1) Articulate key factors relating to legal and regulatory considerations surrounding e-commerce strategies and solutions

Enabling Outcomes

- a) Examine and discuss legal and ethical issues on:
 - i) Knowledge ownership/ Intellectual Property
 - ii) Privacy
 - iii) Confidentiality
 - iv) Jurisdiction
 - v) Taxation
 - vi) Trade agreements and restrictions
- 2) Describe elements of the e-commerce environment that create new and/or additional concerns for risk and security within a firm.

- 3) Explain fundamental concepts and terms concerning network and information security as it relates to implementing an e-commerce solution including
 - a) Encryption
 - b) Digital certificates and certificate authorities
 - c) Digital signatures
 - d) Authentication/ Authorization
 - e) Firewalls – network access policies
 - f) Secure socket layer (SSL)
 - g) Types of security breaches (hackers, viruses, sabotage, denial of service)
 - h) Monitoring, detecting, correcting and prosecuting security breaches
 - i) Methods of enhancing security, privacy, and confidentiality

- 4) Describe key Risk Management paradigms and methodologies associated with e-Commerce implementation
Enabling Outcomes
 - a) Compare control weakness, control risk, and residual risk
 - b) Identify typical sources of security gaps & methods of controlling them
 - c) Examine a risk management paradigm
 - d) Describe a typical disaster recovery plan

- 5) apply a portfolio approach to the personal management of learning
Enabling Outcomes
 - i) develop documentation and/or work samples related to their program of study/career goals suitable for their in-progress portfolio

Resources

Recommended Text

Greenstein, Marilyn & Vasarhelyi, Miklos (2002). *Electronic Commerce; Security, Risk Management and Control*. Course Technology (ITP Nelson). ISBN: 0-07-112340-7