
Considerations for Integrating and Sustaining Experiential Learning and a Capstone Experience

Victor Berardi
vberardi@kent.edu

Greg Blundell
gblundel@kent.edu

Department of Management & Information Systems
Kent State University at Stark

Abstract

Experiential learning and capstone experiences are popular components in many university programs. Research shows experiential activities can provide meaningful learning opportunities for students, can prepare them for success upon graduation, and can lead to higher levels of student persistence and retention. While experiential learning has long been implemented in an ad hoc manner in our business management program, new strategic thrusts from our university relating to experiential learning and capstone experiences, along with significant curriculum changes in the program itself, affords the opportunity to re-imagine our curriculum. To do this, we considered the skills and abilities our students need to be successful after graduation, such as strong communication skills, the ability to handle non-routine, dynamic situations, and the ability to use technology to solve problems. Then we reviewed our curriculum to ensure that our program was reinforcing these issues throughout and not just as an add-on during the last semester or two. Of particular concern are integrating technology and project-oriented activities throughout the program so students will be prepared to work with external clients when they begin the capstone experience course. Finally, we consider a process for acquiring new clients and projects as an important, ongoing concern. In particular, we plan a multi-phased development process where we initially consider internally-focused projects, move to external on-campus projects, and ultimately to local small businesses. To prepare for this last phase, we are working with our local small business development center to reach promising clients.

Keywords: capstone experience, experiential and service learning, technology integration

1. INTRODUCTION

U.S. workers have had a difficult time since the Great Recession of 2008 hit. Questions are raised in nearly all quarters about what it takes to remain relevant and employed in this modern, competitive global economy. Indeed, as instructors, we have long been concerned with developing our students to be successful in a career that will span decades and sought to evolve our courses and teaching appropriately.

Modern Worker Requirements

More than a decade ago, Hermann (1999) noted that the growth of existing and newly created jobs will see fewer and fewer "working Americans who will not face the need for supplementary skills to remain competitive in their existing jobs". This is reinforced in an article by Coy, *The Future of Work* (2004), who notes that individuals must be focused on finding jobs that are not routine, require adaptation and

experimentation, and usually involve complex communication and decision requirements.

Because of fierce competition, American employees need versatility and universities must play a role in developing adaptability in graduates. Thomas Friedman (2005) explains the need to adapt business processes, study habits, and innovative ideas to recognize the "flattening" of the world, where everything is becoming more interconnected and collaborative. Friedman (2005, p. 357) goes on to label adaptable, innovative and creative people "versatilists" a term coined by Gartner Inc., and considers them "unique individuals."

While some current basic skills will endure, the workforce of the near future must be equipped with a skill set that enables them to begin their careers running. New graduates must possess the combined ability to think critically and do effectively in order to compete with workers around the world, particularly when it comes to using technology to solve problems.

Indeed, the most recent talent survey by Manpower (2011) show much of the talent shortage identified by businesses today coincide with these same issues. This has further been confirmed through conversations with local employers, alumni contacts, and the prevalence of technology-intensive internships completed by our management majors in recent years.

Jennings (2009), writing on performance & productivity, premises his article with, "experience and practice underpin all performance improvement", and goes on to claim, "In fact, all workforce development can be distilled down to four basic elements: experience, practice, conversations and reflection". For new college graduates, the question is, in particular, how to get practice and experience before landing a job? Experiential learning (including service learning) and capstone experiences are popular approaches in higher education today.

Experiential Learning

David Kolb's (1984) Experiential Learning Theory purports to map the path of learning from the level of knowledge a student entered college with, through his/her exposure to and active experimentation with new knowledge, to a point where that student could frame and own this

new knowledge and then apply it critically following graduation.

Hesser (1995) found that through service-learning and real-world experiences, faculty firmly believed that, student learning and problem-solving skills increased, students gained an awareness of cultures different from their own and students' commitment to service was strengthened. In fact, up to 83 percent of faculty engaged in service learning reported that the concept improved the quality of learning in comparison to traditional courses. There was also overwhelming support among faculty for the belief that service-learning not only supported the liberal arts objectives and disciplinary learning, but that service-learning actually promoted problem solving skills and critical reflection.

Vogelgesang and Astin (2000) isolated two independent variables, namely generic community service and structured, course-based service-learning, and measured their effect upon student's values and beliefs, interpersonal skills, academic skills, leadership aptitude and career choice. Interestingly enough, those students performing community service with no ties to coursework experienced a more positive impact than those performing structured service-learning.

This phenomenon is reinforced by Astin, Sax and Avalos (1999), when they recognized that while it is important to point out that volunteering sharpens student's focus on becoming more socially responsible, it also encourages students to be more committed to serving their communities, which makes them feel more empowered and therefore much more committed to their overall education.

Upcraft, Gardner, and Barefoot (2005) contend that developing a structured experiential learning component as an endemic element of the first-year curriculum will foster a sense of civic responsibility with students. But they reiterate that these learning activities "must be supported by faculty, and the community, designed to challenge" (p. 521) their capabilities to the fullest, and be totally integrated into every other aspect of their academic lives.

Necessarily, experiential learning can provide that authentic link establishing bonds between students and faculty, and through repeated

opportunity to engage, strengthen these relationships through each succeeding year, i.e. to sophomore, then junior and senior, and on to graduation. Eyler and Giles (1999) feel that these strengthened bonds "may lead not only to greater academic success, but also to better student retention and graduation rates" (p. 188).

Eyler and Giles go on to develop the idea that strengthened bonds will also form between the institution and its surrounding community and in so doing, the collaborative efforts applied to sustaining service-learning, may lead to "more flexible and creative campus response to other issues" (1999, p. 188). "Through these newly formed linkages proactive economic development outcomes emerge. These include better educated and trained students as potential employees, technology transfer from faculty to entrepreneurs via business development consultation, and the like" (Cantor, 1997, p.2). This connection between learning while contributing to society resonates with today's students.

Millennial Students

What we do know is that our current students are distinctly different from prior student populations. Millennials are not traditional students as we have come to know them, and are defined by Keeling (2003, p. 31) as those students born between 1982 and 2003 who have been entering higher education since 2000. In Keeling (2003), authors Howe and Strauss characterize millennials "as being protected, by both their parents and society, and because of this they are driven to improve the world around them by their virtue".

Millennials think and learn differently from previous generations. They are much more individualized, more singularly driven, both tech-savvy and tech-dependent, are more demanding of time and attention while being less considerate of other people's time. This is a marked deviation from the generations that preceded them, particularly that of their Baby Boomer grandparents and Generation-X parents (Keeling, 2003).

This shift has changed the dynamic in universities and we must adapt curriculum and activities to reach these students, who can often be hard to connect with. Millennials are much more likely to seek answers on their own than to

refer to professional venues such as the academic library or their professors. Additionally, they tend to rely on their peers for opinions and answers, rather than taking time to find the answer themselves or from authorities.

In order to truly demonstrate their ability to serve this current student body, universities must adapt the way they reach current students, from mission to classroom, in order to stay relevant in their lives, as well as allowing these students to achieve their full potential and become productive members of society. Brown (2008, p.61) opines, "I think we are really going to see much more learning by doing. And then when you get stuck, engaging in productive inquiry of the things that you don't know in order to do the things that you need or want to get done. Instead of spending your time learning 'about' and then turning around and doing some homework that uses that knowledge, you might reverse that whole cycle—like saying, 'Well, let's start doing things that we really care about and then start expanding our understanding.'"

However, for Millennials to truly appreciate the democratic process in academia, they need to be learning in a collaborative manner as opposed to the "traditional higher education model of teacher-centered classrooms where students learn in isolation from one another rather than in collaboration with each other in a shared learning process" (Barr & Tagg, 1995, p. 18).

Educational technologists, meanwhile, celebrate the role of student groups in learning. Brown and Adler (2008) cite research by Richard J. Light at the Harvard Graduate School of Education, who found that students' ability to form and participate in small study groups influenced their success in college more than multiple other factors.

Many studies, empirical and otherwise, examined the circumstance of both retention and persistence and their collective and individual effect upon a range of student outcomes. These outcomes comprise, GPA, community service commitment, the shaping of personal values and beliefs, interpersonal skills, academic skills, leadership aptitude and career choices, to name a few. In Seidman (2005) Linda Serra Hagedorn speaks to the association of persistence and retention with the student and the institution respectively. Hagedorn supports The National Center for Education Statistics (NCES, 2004) contention that students

persist and institutions retain and where either fail, attrition results.

We must accept that the educational setting for both the student and the institution has changed and existing student development theories, while still suitable, are slowly losing pace with these trends. We need to discover what it is that motivates this new generation of students to move through their undergraduate years with consistency and purpose, and graduate knowing and being able to do, competently.

As a result, we are heartened to see our university and program adopt an experiential learning pedagogy with a program-specific capstone experience. Students may enter college comfortable with how technology is integrated into their lives but they still require significant development in how to use technology to solve problems. Having the opportunity to develop and apply these skills and to do so without sacrificing educational breadth or theoretical rigor is where experiential learning and the capstone experience can be important.

In short, we seek to assist our students in becoming "versatilists" with the continued evolution of our pedagogy and methodologies. To meet the development challenges for graduates, our curriculum must integrate technology usage and experiential learning opportunities throughout. In addition, we must pay special attention to the structure we develop as a means for developing new projects and clients for student projects and experiential learning experiences.

3. PROGRAM OVERVIEW

In our bachelors of business management program we are instituting significant curriculum changes during the 2011-2012 academic year impacting not only what courses are offered but how they are taught. Fortunately, most of the formal changes are occurring at the upper division level, which affords time for implementation planning as these courses will not hit in earnest until the 2012-2013 academic year.

Program Basics

As a liberal arts program, we have a strong mix of qualitative and quantitative courses. As seen in Table 1, our core business courses consist of

57 credit hours with an additional two-thirds of our graduates also taking an elective course in using information systems to solve business problems. Therefore, nearly one-half of the 121 credit hours required in the program is coordinated via college of business faculty, which is where we are focusing our experiential learning and technology integration efforts.

Technology Available

Our program has an array of software available for use by students and instructors. Pertinent programs installed on-campus include:

- MS Office 2010 (Access, Excel, PowerPoint, Word, and OneNote)
- MS Visio 2010 Premier Edition (with business process modeling notation rules)
- Adobe Acrobat Pro
- Research databases

MS Office has always been available whereas Visio is a new addition for the 2011-2012 academic year. Visio is a graphical modeling program with the ability to develop data-linked graphics often used in management dashboards. Acrobat Pro has many capabilities and is useful for converting paper-based processes and forms into electronic workflows. Many business-related research databases are available via the library or internet and are used regularly in classes.

Instructor Profile

Most sections in our program are taught by long-term, full-time instructors. This yields natural course "owners" to lead our change efforts and we are fortunate to have strong faculty buy-in. Faculty members embrace a proactive approach in evaluating the match between what we need to develop in our graduates and how we adapt our content, methods, and approaches to achieve successful outcomes. As such, throughout this planning process, faculty input was sought, information was shared, and plans crafted and adapted from the feedback received. Three areas of special concern include technology integration, experiential learning integration, and the ongoing project/client development process.

4. TECHNOLOGY INTEGRATION

To determine a baseline of how software was integrated in classes, a software survey was developed by one author. The survey asked about the type of technology used, how it was

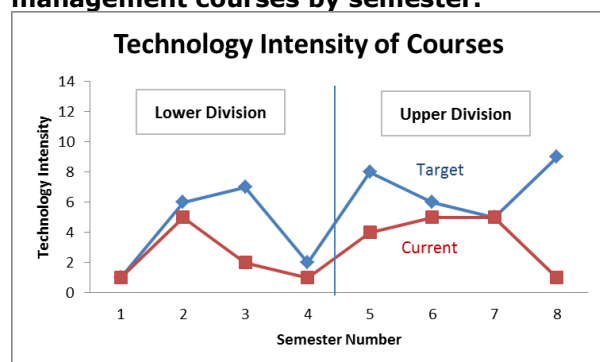
being employed, and how intensely. The survey included not only productivity software (e.g., spreadsheets and databases) but internet-based tools and resources, specialized course software, and library research databases too.

Current Technology Integration Profile

Results are summarized in Table 1 and Figure 1 for core business management courses. Only software used by business organizations is included here as specialized software from a textbook or LMS is omitted. Similarly, simple use of word processing or presentation software is not included as we considered these uses too basic. Course-level technology intensity was scaled from zero (not used) to five (fully integrated and integral to the course).

Figure 1 shows that the current technology integration is significant but improvement opportunities exist. For example, in the third semester, students take four core business courses (principles of management, financial accounting, macroeconomics, and business statistics). Currently, only business statistics uses software in any appreciable manner and does so at an intensity of two. A target of eight can be achieved during the semester by increasing the statistics course intensity to five and by developing small, component activities in each of the other courses. For statistics, the instructor is changing the course by moving away from calculators, publisher-based tools, and paper and pencil assignments to a course that uses spreadsheets almost exclusively. In the final semester, semester 8, the intensity increase is due to new courses in the required curriculum, highlighting our need to prepare students.

Figure 1. Technology intensity of business management courses by semester.



Increasing Technology Intensity

Increasing technology use in classes must be done carefully with consideration of the course material, its level in the program, and how to do so within time and topic constraints.

Table 2 details ideas on how this can be achieved. Notice that the lower division courses mostly have low technology intensities and utilize pre-developed templates rather than requiring students to create their own models. Meanwhile, the technology intensities are higher in upper division courses. This is important for several reasons. First, most of these lower division courses do not have a computer applications prerequisite. Second, these courses are already loaded with discipline specific material that must be covered and there is simply not time to add complicated developments to the syllabus. Finally, this progression yields a nice match with learning taxonomy (Anderson & Krathwohl, 2001) as lower level learning concerns are concentrated in the introductory courses and higher order concerns, especially creating, is the focus near the end of the program.

For example, it has been noted by instructors in several upper division courses that students have difficulty working with and creating charts in Excel for their projects. This topic is covered in the computer applications course during the second semester but not explicitly reinforced in a core course after that. The micro- and macro-economics courses are naturally graph-intensive subjects that could play a role here. Therefore, by creating templates for students to use, such as supply and demand graphs, students can investigate supply-demand dynamics using Excel. With a few add-on activities, such as requiring students to make formatting changes to titles or scaling, useful charting related issues can be reinforced across two additional semesters and it can be achieved through better coordination with little or no added time required. Developing these exercises and tools, along with instructor resources, will ensure all sections of economics are covered. Similar activities are identified for other courses, such as the accounting sequence, giving many reinforcement opportunities.

Coordinating Technology Use and Project Requirements

While Table 2 indicates how technology can be better integrated into the core curriculum, it is important that the program remain agile. Using alumni feedback, discussions with our Small Business Development Center (SBDC) director, and other sources, we have identified initial project areas to concentrate on, such as process documentation (flowcharting and process mapping), the development of management dashboards, and the conversion of manual or paper-based processes to electronic workflows as likely areas where students can bring value to small businesses in our area. Communicating this information to faculty and adapting our technology used in the curriculum will be a continuous challenge and one we need to formalize. Fortunately, this development could be a learning project for students.

5. EXPERIENTIAL LEARNING INTEGRATION

Experiential and service learning projects have long been completed in the program but on an ad hoc, individual instructor basis. To sustain experiential learning experiences program-wide, and to ensure capstone experience success, we recognize the need to formalize experiential learning integration throughout the curriculum, consistent with Eyer and Giles (1999). Students need many experiences throughout their studies, meaning our program must have a steady stream of projects at different stages of development, completion, and complexity.

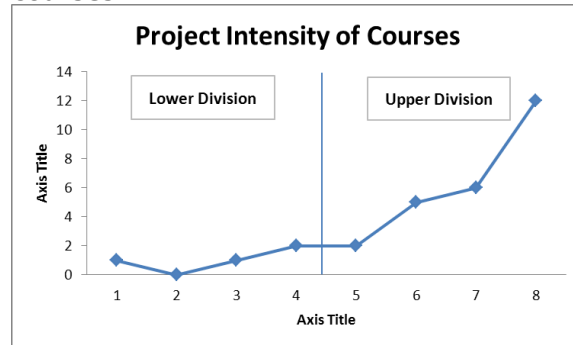
Profile of Project Intensity

The level of project or experiential learning integrated into courses will vary significantly. Courses could have no service or experiential learning activities and assignments, yielding a zero intensity score. At the other extreme, project work could be fully integrated into the course for an intensity rating of five. Figure 2 contains the proposed project intensity of courses in the program from Table 1.

Figure 2 shows that project intensity ramps up in the last three semesters but students will have some form of experiential learning in the core courses nearly every semester beginning with the first one as recommended by Upcraft et al (2005). It should be noted that students can get experiential learning experiences in elective

and non-business courses so this represents a minimum exposure expected for students.

Figure 2. Intensity of project-related experiences in business management courses.



Early in the program, students will experience a relatively low intensity of project work that may comprise having students review previously completed projects to understand development structure and form. Then, these lower division students could be challenged to complete small, add-on capabilities or analyses. For example, students may use a database created for a project and analyze data, create graphs, or suggest a new report form or view. Some of these project related resources already exist from previous experiential and service learning projects but a formal repository of project resources containing both small, component projects and comprehensive longitudinal projects will need to be developed and managed.

Longitudinal and Component Projects

Longitudinal projects are ones that are comprehensive in nature and can be compartmentalized over time. A longitudinal project might start with a database development and be enhanced over time to add new tables, queries, and reports.

For example, consider a project we are initiating with our on-campus physical education center. The center director was looking at new management software and agreed to allow our students to develop it rather than buy an off-the-shelf package. In its basic form, we will develop a user database and user check-in module. We will also build forms and queries to do basic tasks. In subsequent semesters and in other courses, additional capabilities such as equipment and inventory management, maintenance management, employee

scheduling, equipment and course scheduling, etc. will be developed.

Once a component project is developed, a lesson plan, instructor resources, and student activities will be developed by the full-time instructor in the area and made available to others who might teach the course. This is especially important for exposing lower-division students to our experiential learning process while doing so at a level appropriate to their development. Using longitudinal and completed projects adds immediate credibility for students and sets the tone for lower-division students regarding what they will be challenged to accomplish by the time they graduate from our program.

While longitudinal projects are one source for component projects that can be readily deployed to other courses, they are by no means the only one. Case studies and current events can also be used to facilitate projects in courses, to round out offerings, or to cover applications not yet encountered by a client or class project.

6. PROJECT DEVELOPMENT PROCESS

The long-term goal is to work with local, small businesses that could benefit significantly from using formal management tools and approaches but may not have the resources or wherewithal to develop them themselves. Working with business and community partners, though, does bring with it real-world problems such as poor project specification by the client, budget issues, and changing needs, which if not managed properly can have a damaging effect on program reputation (Reinicke & Janicki, 2010).

To prepare for and minimize these risks we have identified a multi-phase development process considering clients we can serve, the types of projects students could work on, and how to integrate these with the curriculum. The ultimate goal is to have a self-generating structure for projects with local businesses and we have been collaborating with our county's SBDC to prepare. But before we get to this level, we have to build our capabilities and reputation. To do so, we plan to use internal, business program and campus-level projects first before moving to off-campus clients. As part of this initiative, we will start with small, component projects before moving to more comprehensive ones.

Phase One: Internal, Program-Focused Projects

An early focus is going to be on projects related to the internal management of our business program. Therefore, as we learn to manage experiential projects in our program, we can build upon our experiences without negatively impacting clients. Many tools are needed to manage these changes and to make sure faculty can participate in the management and reporting processes on an ongoing basis. These should form nice component projects, particularly for lower-division courses.

The projects will be small enough for students to envision and tackle while being meaningful because they are helping to improve their program. For example, monitoring our technology and experiential learning integration in the curriculum requires management tools and student projects will be used to develop the databases and reports needed, which will then be made available for others to use. Faculty owners in each discipline can monitor how their courses fit with others and update their course activities so others will know.

Phase Two: External, On-Campus Projects

Our first comprehensive projects are planned for campus-based clients. We have worked to build relationships with administrators in student services, student life, our campus bookstore and the campus physical education center and we have proffered our services to help them better manage their areas.

As noted earlier, the physical education center is one identified on-campus client. Another source for initial on-campus projects is our office of student life, which has grown dramatically in the last few years but mostly is still using paper-based and manual processes to manage campus events and student organizations. Similarly, our campus bookstore is still managing textbook requisitions from faculty using pencil and paper instead of a database approach and is interested in moving to an electronic workflow.

Phase Three: External, Off-Campus Projects

One purpose of the internal and on-campus projects is to work through implementation issues, while still meeting client needs, so we can be ready and confident when working with off-campus clients. As we get to this point, it

should be noted that we will also work with instructors in marketing and public relations to develop materials to use as we present ourselves to local organizations.

Off campus, we will work with both for-profit and not-for-profit organizations. Early in our off-campus phase, we anticipate working more intensely with nonprofits for a couple reasons. First, many of our instructors already have relationships with these organizations through past service learning activities. In addition, we have found nonprofits more willing to participate in projects with students due to resource constraints and because they are more willing to share information with students than businesses are. Business organizations are often more hesitant and secretive and we anticipate needing more than just marketing and promotion materials to convince an ongoing reserve of clients to work with us.

We have been collaborating with our local SBDC as a means to build our credibility with local businesses. Our SBDC is active and has a long track record of helping local businesses launch and grow. Associating with the SBDC helps to solidify our credibility with local businesses and has been important in planning the integration of technology and projects into the curriculum. For example, aligning the types of projects we should attempt as a program (e.g., process documentation, workflow improvements, management dashboards) matches nicely with what many SBDC clients need. Furthermore, these small businesses often are already using Microsoft Office and Adobe products rather than larger-scale and enterprise resources planning (ERP) systems such as from Oracle or SAP, matching nicely with our program resources and student skills. Ultimately, we hope our business clients will get value out of working with our program and hire students for internships and permanent positions.

7. CONCLUSION

In this paper, plans relating to the implementation of experiential learning and a capstone experience into a business management program are detailed. The literature shows that experiential learning is best implemented as an integral part of the program as a whole, across many semesters, and not just on an ad hoc basis. In particular, pertinent considerations for success are explored. These include a focus on the skills and abilities

student's need to have upon graduation to be successful in the highly competitive global environment, ensuring the integration of technology across courses so students get sufficient skills reinforcement, and having many experiential learning opportunities throughout the program to build student engagement and abilities. A multi-phase project development process is envisioned to ensure a steady stream of projects and clients for the program.

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Appendix

Table 1. Progression of important business courses for business management majors as they relate to technology and project intensity and activities.

Semester	Course	Technology Intensity* (Current/Proposed)	Project Intensity*
1	BUS 10123 Exploring Business	1 / 1	1
2	ECON 23020 Principles of Micro Economics	0 / 1	0
	MIS 24053 Introduction to Computer Application	5 / 5	0
3	MIS 24163 Principles of Management	0 / 1	1
	ACCT 23020 Introduction to Financial Accounting	0 / 1	0
	ECON 22061 Principles of Macro Economics	0 / 1	0
	MIS 24056 Fundamentals of Business Statistics	2 / 5	0
4	ACCT 23021 Introduction to Managerial Accounting	0 / 1	0
	FIN 26074 Legal and Regulatory Environment of Business	0 / 0	1
	MKTG 25010 Principles of Marketing	1 / 1	1
5	FIN 36053 Business Finance	0 / 3	0
	MIS 34060 Operations Management	4 / 4	1
	MIS 34180 Human Resource Management	0 / 1	1
6	MIS 34165 Dynamics of Leadership	0 / 1	1
	MIS 34054 Using Information Systems to Solve Business Problems	5 / 5	4
7	MIS 44152 Collaborative Project Management	NA / 3	4
	MIS 44163 Global Business Management	NA / 2	2
8	MIS 44285 Integrated Business Policy and Strategy	1 / 1	5
	MIS 44062 Supply Chain Management	NA / 3	2
	MIS 44392 Business Consulting and Practicum	NA / 5	5

**Technology and project intensity from none (score = 0) to fully integrated and integral (score = 5). Current scores developed from faculty survey. NA means new course not currently offered.*

Table 2. Opportunities for technology use in courses.

Semester	Course	Technology Intensity* (Proposed)	Program Used and Purpose
1	BUS 10123 Exploring Business	1	Excel —basic spreadsheet manipulation and graphing using prepared template
2	ECON 23020 Principles of Micro Economics MIS 24053 Introduction to Computer Application	1 5	Excel —basic graphing and manipulation using prepared template MS Office and Visio —Excel, Access, Word, and PowerPoint with a focus on Excel and Access, basic introduction to Visio
3	MIS 24163 Principles of Management ACCT 23020 Introduction to Financial Accounting ECON 22061 Principles of Macro Economics MIS 24056 Fundamentals of Business Statistics	1 1 1 5	Excel —basic spreadsheet manipulation and graphing using prepared template Excel —basic spreadsheet manipulation, built-in functions, and rows/column structure using prepared template Excel —basic spreadsheet manipulation and graphing using prepared template Excel —basic spreadsheet manipulation, built-in functions and advanced data analysis capabilities
4	ACCT 23021 Introduction to Managerial Accounting FIN 26074 Legal and Regulatory Environment of Business MKTG 25010 Principles of Marketing	1 0 1	Excel —basic spreadsheet manipulation, built-in functions, and rows/column structure using prepared template N/A Online databases —company and industry research
5	FIN 36053 Business Finance MIS 34060 Operations Management MIS 34180 Human Resource Management	3 4 1	Excel —built-in functions, rows/column structure Excel and Visio —advanced built-in functions and data analysis tools in Excel, basic flowcharting and workflow representation in Visio Visio —organizational charts, basic data linking
6	MIS 34165 Dynamics of Leadership MIS 34054 Using Information Systems to Solve Business Problems	1 5	Online databases —related research Access, Excel and Visio —designing databases and spreadsheets for clients, dashboards for management using Visio
7	MIS 44152 Collaborative Project Management MIS 44163 Global Business Management	3 2	OneNote, Live.com and MS Project —project management basics, collaborative activities using Live.com (or SharePoint, preferably) and OneNote Online databases and Visio —company and industry research, diagramming global organizations and basic data linking
8	MIS 44285 Integrated Business Policy and Strategy MIS 44062 Supply Chain Management MIS 44392 Business Consulting and Practicum	1 3 5	Online databases —industry and company research Excel and Visio —process diagramming and intermediate data linking, development of dashboards All —develop client-defined deliverables using appropriate tools. Excel, Access, and Visio, Acrobat, etc. anticipated as most used.