

Application for Supply Chain Management Major in the Kelley School of Business Evening MBA Program

- I. School: Kelley School of Business
- II. Proposed Major: Major in Supply Chain Management for MBA degrees granted through the Evening MBA program on the IUPUI campus (see Appendix A for a complete course requirement list)
- III. Related Degree Program: Evening MBA Program
- IV. Projected Date of Implementation: Fall 2008 (if feasible under approval timeframe)
- V. Major Objectives and Chief Features

Supply chain management is an academic business sub-discipline which advances best practices and knowledge of how ideas and resources flow through the production process and add value for end use consumers. Topics within this field include operations, sourcing, contracting, logistics, transportation, long-term supplier relationships, customer service, information technology interface, organizational design, optimization, and enterprise management. Demand for MBAs with supply chain expertise has grown both locally and nationally. Enrollment in supply chain courses already offered in the Evening MBA program has risen. With a formally-recognized supply chain major, students can better signal their expertise in the job market and the Kelley School can better serve the needs of central Indiana companies, especially those in advance manufacturing, services, transportation, and logistics which represent a major share of regional economic activity.

The major, as proposed, allows the Kelley School to formally package a set of supply chain courses that are already taught on a repeated basis at IUPUI and enjoy sustainable enrollments. To the schedule must be added only two new 1.5 credit hour courses that already exist in the Indiana University master course inventory. Staffing of these two courses will not require the hiring of new faculty members.

In developing course requirements, faculty members used the industry-standard SCOR (*Supply Chain Operations Reference*) model as an overall content guide for the MBA major. In brief, SCOR covers planning, sourcing, making, and delivering in the supply chain – all vital activities involved in getting goods and materials from their upstream raw material providers and manufacturers to downstream retailers and end-customers. Understanding operations is a key component of any business. The major was designed to enhance interaction with other MBA disciplines to make the major (and affiliated electives) attractive to a large number of students. The 10.5 credit hour requirement is consistent with other majors in the Evening MBA curriculum (finance, marketing, and venture & technology management).

A field project requirement makes this design for an MBA supply chain major unique and enhances the labor market competitiveness of graduates. The requirement can be filled in one of two ways. First, a student can be admitted to the Evening MBA program's Global Supply Chain and Innovation Enterprise (gSCIE) which matches MBA student teams with local companies who need high level consulting to help solve supply chain problems. Second, through her electives, a student can complete a faculty-supervised project that wins her certification as a Six Sigma greenbelt, a professional certification recognized in the supply chain and operations management field. Under either arrangement, the student's project is contributing value for her employer or a company that is a friend of the Kelley School of Business and forwarding economic development in central Indiana.

VI. Why the Major is Needed?

The Evening MBA program needs the supply chain major for five distinct reasons:

1. A supply chain major in the Evening MBA program serves the economic interests of the greater Indianapolis economy.

Central Indiana and the greater Indianapolis area have become a major hub of supply chain businesses, users and suppliers (e.g., FedEx, Celadon, Langham Logistics, UPS, Rolls Royce, Eli Lilly, Roche Diagnostics, FinishLine, Brightpoint, Clarian, etc.). Recent conversations with the President of Celadon Trucking, a top manager at the Indiana Department of Transportation (INDOT) responsible for the state's supply chain strategy, and senior managers at leading local companies such as FedEx, Lilly, Roche and UPS have revealed strong employer interest in skilled supply chain MBA graduates. This accelerating trend is reflected in the new Central Indiana Corporate Partnership initiative named Conexus-Indiana initiated this past June. Conexus-Indiana's goal is new economic development focused on advanced manufacturing and logistics. The initiative is chaired by Cummins Inc. President and Chief Operating Officer Joe Loughery and funded by a \$6.5 million grant from Lilly. Governor Daniels and the state legislature have signaled strong support for the efforts of Conexus-Indiana. The executives of Conexus-Indiana (Dr. Carol D'Amico, President/CEO, and Lisa Laughner, Exec. VP) have voiced support for the Supply Chain Major proposal.

2. There is strong demand among Evening MBA students for a supply chain major.

The supply chain enterprise is the program's largest with 21 students in 2007-2008. Supply chain electives added in 2006-2007 sustain expanding enrollments that are large enough to justify permanent addition to the course schedule. A healthy and growing number of prospective students ask about supply chain major possibilities at recruiting events. Current students vocalize their awareness of career opportunities in supply chain management, and a measurable number seek delay of their graduation date to enable official branding of the major on their transcript. Recruiters like Eaton and Target specifically seek Evening MBA students with supply chain management potential through Graduate Career Services. Projected enrollment growth of 30% through addition of the Carmel cohorts will further increase demand for the major.

3. A supply chain major will enhance the Evening MBA program's competitive position.

The Evening MBA program competes with accredited executive programs (Purdue, Notre Dame, Ohio State), accredited part-time programs (Butler, Ball State), and unaccredited local programs. Among accredited programs, Kelley will be able to claim that it is the only program to offer a supply chain major. The Evening MBA program will establish a "first mover advantage".

4. A supply chain major leverages nationally-recognized excellence in faculty scholarship.

Each member of the operations management faculty in Kelley Indianapolis – Roger Schmenner, Barbara Flynn, Mark Frohlich, and Mohan Tatikonda – is a well-decorated scholar. This includes multiple "best paper awards" in the operations management area over the past few years, and a history of NSF grants. Collectively this faculty group comprises a notable center of excellence in empirical operations management and supply chain research. The Evening MBA program can leverage this comparative advantage in talent to offer a supply chain curriculum that is a model for other part-time programs in the country.

5. A major in the Evening MBA program enhances the consistency of supply chain management as a curricular component of Kelley’s MBA programs.

The full-time MBA program offers a major and minor in “Supply Chain & Operations”. Kelley Direct offers an MS in global supply chain management. An Evening MBA supply chain management major will formalize a place for the subject in the third program of Kelley’s MBA portfolio.

VII. Describe the student population to be served and the market to be targeted.

A major in supply chain management serves the professional needs of Evening MBA students with interests in operations, manufacturing, contracting, transportation, logistics, customer service support, enterprise operations, service management, or leadership in a small business. Students pursuing supply chain interests typically have a technical undergraduate background (science, engineering, or mathematics) and desire to work in a large or growing organization.

Out of an expected annual graduation pool of 140 students, the school expects 25 to graduate with this major each year based on expressions of student interest and a steady presence of employment opportunities. The program currently has five majors – accounting, finance, general management, marketing, and venture and technology management. Adding a sixth major focused on supply chain management is forecasted to impact enrollments in the other majors in the following way:

Major	Expected graduates without supply chain major (based on 3 years of data)	Expected graduates with supply chain major
Accounting	2	2
Finance	59	52
General Management	40	28
Marketing	24	21
Supply Chain Management		25
Venture and Technology Management	15	12
Total Expected Graduates	140	140

If a student declares no major for purposes of graduation, the default major of general administration is assigned. Students who declare a supply chain management major are expected to come mostly from a population that would otherwise declare a general management major.

Evening MBA applications have dramatically grown (75% since Fall 2006) and matriculation exceeds capacity of 160 new students each year. Because individuals with good corporate experience and demonstrable quantitative aptitude are typically attracted to careers in supply chain management, the intended marketing value of the major is an increase in applicant quality and elevation of the program’s Graduate Management Admissions Test (GMAT) average.

VIII. How does the major complement the departmental and campus mission?

The Kelley School offers an undergraduate major in supply chain management on both the Bloomington and IUPUI campuses. Full-time MBA students in Bloomington can major in supply chain and operations and students in Kelley Direct can couple an MS in supply chain management with their MBA via a joint degree. Formalization of a supply chain management major in the Evening MBA program means that all undergraduate and MBA students in the school have the opportunity to specialize in this area of academic knowledge.

The IUPUI campus mission emphasizes outreach and service to the Indianapolis community. Enterprise projects aid small and medium sized companies with free consulting that they might not otherwise be able to afford. Companies that are part of the central Indiana advanced manufacturing, transportation, and logistics cluster see a formalized MBA supply chain management course of study in a nationally-ranked business school as an important conduit of local talent to fill local management positions. This ability to meet skilled-labor demand enhances the ability of the state and city to recruit related companies to central Indiana. The supply chain management major strengthens the Kelley School of Business on the IUPUI campus as an asset to local economic development.

IX. List and indicate the sources (including reallocation) of any resources (personnel, financial, learning, etc.) required to implement the proposed program.

With the exception of P561 Supply Chain Management (1.5 credit hours) and P509 Supply Chain Operations (1.5 credit hours), existing courses already taught on an annual basis allow a student to fulfill requirements for the major. Instruction of P561 and P509 can be fulfilled by a realignment of the teaching schedules of existing operations management faculty members. Implementation of the major has no material impact on resources within the Kelley School – existing capacity can be used to insure adequate faculty staffing.

X. Describe the innovative features of the program.

Course instruction focuses upon translational research and emphasizes management practice. This gives the major a curriculum that is attractive to MBA recruiters and insures the program's ability to produce supply chain management talent for the Central Indiana labor market. The field project requirement builds student credentials in a competitive. Completion of a project allows a student to graduate with either professional green belt Six Sigma certification (a certification valued by recruiters) or completion of a high level consulting project that documents supply chain management experience. The latter is valuable for students seeking a switch into supply chain management out of another career.

XI. List the major student outcomes for the proposed major.

XII. Explain how each of the student learning outcomes identified in XI will be assessed.

Below are listed the learning goals implicit in the major's curriculum. For each goal is listed a metric or metrics that enable the Evening MBA program to assess and monitor performance in relation to the stated goal.

Learning Goal A – Evening MBA students with a supply chain management major will use state-of-the-art software to manage the schedule, resource allocation, budgeting, and tracking of projects within a company.

Metric	Index	Activity
A.1	Average project grade in P552 Project Management	Using the software package <i>Microsoft Project</i> , students author a project plan of 25-30 activities that includes scope, schedule, resources, a budget, and a plan for monitoring and control. Students are encouraged to construct a plan for a project at their place of employment.

Learning Goal B – Evening MBA students with a supply chain management major will build credentials toward certification as a Six Sigma green belt (which enables ultimate achievement of a black belt). Recognized by small and large companies in global industry, Six Sigma is a hierarchy of professional certification that demonstrates achievement of skills in process and quality management.

Metric	Index	Activity
B.1	Average score on Six Sigma certification exam in X574 Process Improvement I	The certification exam is a standardized professional assessment of a student’s knowledge of process improvement tools that include statistical analysis, evaluation of quality, generation of control charts, and diagnosis of cause and effect in production processes. The faculty member who teaches X574 Process Improvement I is credentialed to proctor this exam for Evening MBA students.
B.2	Number of students per year that pass the Six Sigma certification exam in X574 Process Improvement I	
B.3	Average grade on Six Sigma project in X574 Process Improvement II	Six Sigma green belt certification requires completion of a project within an organization which demonstrates a student’s knowledge of Six Sigma concepts and practice. The faculty member who teaches X574 Process Improvement II is credentialed to approve projects as meeting Six Sigma certification guidelines.
B.4	Number of students per year that complete the Six Sigma project in X574 Process Improvement II and gain certification as Six Sigma green belts	
B.5	Number of students who gain Six Sigma black belt certification in their career	A designation of black belt is the highest professional Six Sigma certification. Certification of current and past students beyond the green belt level will be tracked with the assistance of the Kelley Alumni Affairs office.

Learning Goal C – Evening MBA students with a supply chain management major will know how to negotiate a supply chain contract as both a buyer and a seller.

Metric	Index	Activity
C.1	Average supplier vs. buyer negotiation exercise grade in P509 Global Supply Chain Operations	Based on a case, students divide themselves between buyers and sellers and engage in a mock negotiation based on limited information. The exercise involves spreadsheet analysis of data given in the case.

Learning Goal D – Evening MBA students with a supply chain management major will internalize general supply chain management concepts that cover planning, making, sourcing, and delivering. Student will build focused mastery of one concept through completion of a project that contributes to the Supply Chain Information Portal housed at the Kelley School of Business in Indianapolis.

Metric	Index	Activity
D.1	Average grade on Supply Chain Management Information Portal contribution projects in P561 Global Supply Chain Management	The Supply Chain Management Portal at the Kelley School of Business in Indianapolis is an online repository of papers and PowerPoint presentations that explain and explore supply chain concepts and issues. Material is written and researched so that it is valuable to a general business audience. Students author items for the portal as a class project in P561 Global Supply Chain Management. All material is made free to the public on the internet.
D.2	Number of topics added during the year to the Supply Chain Management Information Portal via student projects in P561 Global Supply Chain Management	
D.3	Average grade on case-based exam in P561 Global Supply Chain Management	The case-based examination in P561 Global Supply Chain Management tests a student's mastery of basic tools related to production planning, inventory control, order fulfillment, and multi-stage/multi-location coordination.
D.4	Average grade on case-based exam in P509 Supply Chain Operations	The case-based examination in P509 Supply Chain Operations assesses a student's literacy of issues related to distribution of product, logistics, purchasing, and supply chain information systems.
D.5	Average grade on exam in P552 Project Management	Project planning, scheduling, budgeting, monitoring, and control are topics tested on the exam in P552 Project Management.

Learning Goal E – Evening MBA students with a supply chain management major will demonstrate advanced ability to define a supply chain management problem, critically analyze it, and effectively communicate a solution. Interpretation of financial, market, and statistical data must be a part of solution construction.

Metric	Index	Activity
E.1	Average class participation grade in P561 Global Supply Chain Management	A Harvard case provides a history of a real firm, delineates its place in the industry and market, details important financial and operations data, and outlines specific challenges faced by management. Instructors guide students through case discussions that enable learning through the Socratic method. Students are graded on how well they contribute to the collective understanding of supply chain management concepts as they relate to the companies being discussed. Students must think holistically and in terms of management application.
E.2	Average class participation grade in P509 Global Supply Chain Operations	
E.3	Average class participation grade in P552 Project Management	
E.4	Average case analysis writeup grade in X574 Process Improvement 1	The case analyses in X574 Process Improvement I evaluates a student's grasp of key operational problems, depth of analysis, and relevant use of course concepts as they relate to Six Sigma training.

Learning Goal F -- Evening MBA students with a supply chain management major will develop and implement an actionable vision for individual career advancement where supply chain management knowledge and experience adds value. The curriculum of the Evening MBA supply chain management major will position students for personal growth and promotion within in their industry of choice.

Metric	Index	Activity
F.1	Qualitative assessment by faculty members of projects during the year completed by students in the MBA Global Supply Chain and Innovation Enterprise	The MBA Global Supply Chain and Innovation Enterprise competitively admits students each year. As part of the enterprise curriculum, students complete consulting projects that provide supply chain experience they can put on their resume. A goal of the enterprise is to enhance a student's ability to compete for jobs where supply chain management is a core skill. Each year, the faculty directors of the enterprise author a report that lists completed projects and assesses the value they added for both students and partners of the enterprise in the community.
F.2	Number of students who complete X574 Enterprise Experience II as competitively admitted members of the MBA Global Supply Chain and Innovation Enterprise	
F.3	Percent of students who graduate with a supply chain management major who are promoted (either by their current employer or through a new position with another employer) within two years of graduation	The career progress of Evening MBA students who graduate with a supply chain management major will be tracked with assistance from the Kelley Alumni Affairs office.

F.3	Ratio of students who get a job in supply chain management to students who want a job in supply chain management via interviews with MBA recruiters in Kelley Bloomington	Evening MBA students are eligible to interview with MBA recruiters alongside full-time MBA students in Bloomington.
F.4	Average salary of supply chain management jobs offered to Evening MBA students interviewing in Bloomington	

Appendix A

Course Requirements for the Major

Tier I Courses: All are required [7.5 credits total]

Supply Chain Foundations [3.0 credits]

P561 Global Supply Chain Management [1.5 credits, not currently offered] (overall supply chain strategy and design)

P509 Supply Chain Operations [1.5 credits, not currently offered] (overview of supplier- and customer-interfaces)

Projects and Processes [3.0 credits]

P552 Project Management [1.5 credits, currently offered in Fall 2007, course may be waived¹ upon proof of notable prior project management training or certification]

X574 Process Improvement I [1.5 credits, currently offered in Spring 2008, course may be waived¹ upon proof of notable prior process improvement/six sigma training or certification]

¹A waived course is replaced with any other course from the Tier II electives list below.

Field Project [1.5 credits]

Practicum requirement may be met via any *one* of the following:

X574 Process Improvement II² [1.5 credits, currently offered in Spring 2008]

X524 Enterprise Project³ [1.5 credits, currently offered in Spring 2008] (subject to faculty approval)

P590 Independent Study in Operations Management [1.5 credits minimum] (subject to faculty approval)

²This course currently has the same course number as Process Improvement I – they are differentiated by a section number.

³X523 Enterprise Project may not be applied towards the major.

Tier II Courses: Major Electives [3.0 credits total]

Pick any of the following to meet the 3.0 credit requirement:⁴

G527 Value Chain in Health Care [1.5 credits]

K510 Advanced Decision Models [1.5 credits]

K516 Quantitative Decision Models [1.5 credits]

M594 Global Marketing Management [3.0 credits]

P506 Logistics and Distribution [1.5 credits]

P507 Enterprise Resource Management [1.5 credits]

P520 Strategic Sourcing [1.5 credits]

P590 Independent Study in Operations Management [variable credit]⁵

X574 Process Improvement II [1.5 credits]⁵

⁴Only a subset of Tier II courses will be offered at any one time. Inclusion on the list does not guarantee or imply a course's offering, including those in the operations management area (courses with a "P" code prefix).

⁵This course is not applicable to simultaneous Tier I and Tier II credit.