Engineering Leadership Portfolio

- **MPD: Product Development leadership**
  - Engineering, R&D, advanced manufacturing
- **MML: Operations leadership**
  - Manufacturing, supply chain, process excellence
- **Certificates: Systems Engineering, SCM, PM**
- Emphasis on leadership & decision making
- Engineering & business courses – systems orientation
- For experienced practitioners
- Online (or hybrid) and part-time
• **Product innovation** – program theme and highest business priority
• Leadership program for engineers, scientists, mgrs.
• Systems orientation
• Elective and Capstone project tailor program to individual and business needs
• Started 1999: ~13/yr., 285 grads, 40+ companies
• 30 credits (10 courses, 3 cr. each), online or hybrid
• Admission: 2 yrs experience, 3.0 GPA, technical degree preferred, no entrance exam required

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**Curriculum**

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[ Core

• Excellence in Product Development
  – NPD leadership (teams, organizations), process excellence, lean PD
• Systems & Project Management
  – PMBOK, people and process mgt.
• Engineering of Systems I & II
  – Integrated product/process/SC design, lean PD
  – Innovation techniques, outsourced PD, rqmts engr mgt, CPM, robust design, etc.
• Decision & Risk Benefit Analysis
  – Decision-making, probabilistic and non-prob. methods (scenarios, cost/benefit, portfolio mgt)
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Curriculum

- Operations & Supply Chain Management
  - Manuf. & services, SC design & strategy, lean ops, global ops, quality
- Accounting for Decision Makers
  - Use of financial reports, special purpose financial info for managers (planning, control)
- Marketing Concepts & Commercialization
  - Marketing planning/strategy for commercializing products & services, mktg mix, customer value
- Product Development Capstone
  - Business problem (ROI) & scholarship
- Elective: breadth or depth

Sample Electives

- Lean Six Sigma Fundamentals
  - Problem solving and statistical tools to drive process improvement
  - Yellow Belt issued, Green Belt “trained”
- Design Thinking & Creativity
  - Use of creative problem solving to discover new alternatives in the design of products and services
- Agile Project Management
  - Iterative & incremental framework to deliver high-risk solutions in a rapid response timeframe
- Data Analytics & Business Intelligence
  - Includes descriptive and inferential statistical techniques
Sample Capstone Projects

• The Role of Architecture in Defining NPD Strategy
• Methods for Improving the Technology Readiness Assessment Process in New Product Development
• Radical Innovation: An Analysis of Strategy and Capabilities of Corporations in Upstate NY
• Practical Guide to Assessing Organizational Readiness for Capitalizing on Virtual Teams
• Selecting Winning Product Ideas in Mature Companies
• World-Class VOC – Critical Success Factors
• Overcoming Barriers to Implementing and Sustaining Lean Product Development Efforts
• Methods and Challenges in Project Portfolio Prioritization
• Reducing Time to Market in High Mix, Low Volume Applications

Targeted Competencies

• Leadership through structured systems thinking, design, and management
• Leadership expertise of the PD process & high-performing teams
• Strategic, enterprise-wide & global perspective
• Innovative mindset, receptive to change
• Decision-making in uncertainty
• A market-oriented product development focus
• Application of sound business principles to effective management
Targeted Competencies

- Project management – business & technical planning, relationship management, program control, structured decision making & risk management, agile PM
- Enhanced ability to recognize barriers to success early, when corrective actions less costly
- In-depth understanding/application of state-of-the-art tools for design, analysis, and management in the PD domain

Sponsors

- Alstom
- ATMI
- Bausch & Lomb
- Biogen
- Borg-Warner
- Branson Ultrasonics
- Carestream Health
- Corning
- Delphi
- Eaton
- Fisher Price
- Ginzler Graphics
- Gleason
- Greatbatch
- Gunlocke
- GW Lisk
- Harris
- Honeywell
- ITT Fluids, ITT Space
- Inficon
- Infimed
- John Deere
- Ortho-Clinical Diagnostics (J&J)
- Kodak
- Moog
- Parker Hannifin
- PPC
- Raymond Corp.
- Reflexite
- Safe Passage
- Saab-Sensis
- Spirit Aerosystems
- SRC
- Ultra Electronics
- Vanlab
- Veeco
- Welch-Allyn
- Xerox
• Focus on **operational excellence** – lean orientation
• For **experienced** practitioners moving to management positions in operations (manufacturing, SCM, process engineering) – from engr., business, or science
• Capstone project significant ROI
• Started 1996: ~15 /yr; 300+ grads, 50+ companies
• 30 credits (10 courses, 3 cr. each), online or hybrid
• Admission: 2 yrs experience, 3.0 GPA, no exam

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**Curriculum**

• **Leading Teams in Organizations**
  – Power & influence, leadership & management, culture, change, ethics, leading teams & organization
• **Supply Chain Management**
  – Logistics mgt., transportation, location strategy, SC integration, strategic alliances, global issues
• **Manufacturing Systems**
  – Design & analysis of production systems, lean mfg., improving & redesigning mfg. systems
• **Global Facilities Planning**
  – Location strategy & decision making, facilities design, layout, storage & handling, warehouse design, process tech. transfer
Curriculum

• Lean Six Sigma Fundamentals
  – Quality strategies & tools to drive process improvements linked to business objectives, LSS & DMAIC, lean tools, benchmarking, VOC
  – Yellow Belt issued, Green Belt “trained”
• Systems & Project Management (see MPD)
• Engineering of Systems I (see MPD)
• Accounting for Decision Makers (see MPD)
• MML Capstone Project
  – Client problem, lean orientation, significant ROI ($300K+)
• Elective: breadth or depth

Sample Capstone Projects

• Tool Room Inventory Reduction
• Supply Chain Process Improvement
• Optimizing Material Handling
• Improving On-Time Delivery
• Continuous Improvement in Process and Cell Design
• Integrated Production Management System
• Process Flow Reengineering
• Lean Improvements in Inventory, Logistics, Material Handling
• Design for the Supply Chain
• Develop Demand Profile for Effective Production Planning
• Failure Analysis and Warranty Returns
• Securing Toyota Business
Targeted Competencies

• **Ability to make sound business decisions in a complex global economy:** business planning and implications of outsourcing and offshoring; financial management; agile decision-making

• **Ability to manage global, multi-site production and operations:** manage distributed teams; process technology transfer; service operations, enterprise and manufacturing strategies; lean operations; location strategy and facility design; state-of-the-art tools; regulatory issues

• **Comprehensive understanding of quality and continuous improvement principles**

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Targeted Competencies

• **Global supply chain management:** supply chain strategy; logistics management (quality and delivery assurance); systems needs for SCM; optimizing supply chains

• **Strong leadership and management skills applied to global high technology manufacturing:** systems thinking, planning, and management; applications orientation; project management expertise; creative leadership; enhanced ability to recognize barriers to success early
Sponsors


Professional Certificates*

• Graduate credit, 100% transferable to degree, “Certificate of Accomplishment”
• Online (or onsite/blended for groups)
• 3 courses each:
  – Systems Engineering: Engr. of Systems I&II, + elective
  – Supply Chain Management: SCM (or Ops & SCM), Mfg. Systems (or Facil. Planning or Acct.) + elective
  – Project Management: PM, Decision & Risk Benefit Analysis (or Acct.), + elective

• Admission: 2 yrs, 3.0 GPA (same as MS)

*Certificate name does not appear on transcript
Format

- Fully online (or online + on-campus)
- Flexible to your schedule, your bandwidth, your company’s level of tuition support
- Online format – as good as (or better than) on-campus
  - 24/7 access: anytime, anywhere
  - High quality discussions and increased engagement: discussion boards, live chats/web-conferences
  - Reduced lecture content – emphasis on interaction
- Innovative Learning Institute: state-of-the-art support

Logistics

- RIT tuition 2020-21 ($2089/credit): 1 course = $6267; 3 courses = $18,801; MML or MPD = $62,270
- Need-based scholarships up to 30%: goal to reduce out-of-pocket tuition to 1/3 of RIT’s full tuition
- Typical workload/course: material (2 hr), optional office hour (1 hr), homework (3-6 hr) => 6-9 hr/wk
- Program duration – flexible to your needs
  - 16 months: full-time student
  - 20 months: 2 courses/term (max for full-time employee)
  - 40 months: 1 course/term
Admissions

• Semesters – 3 entry points annually:
  – Fall (16 wks): late August – late December
  – Spring (16 wks): late January – late May
  – Summer (10 wks): June – mid August
• Rolling admissions but submit application within 6 weeks of semester start
• Online application, transcripts, 1 recommendation letter, $60 fee (waived for RIT alumni)

Questions?

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• Do I have to take the GRE or GMAT? No
• Can I transfer courses from another institution? Yes, up to 6 credits (2 courses), <5 years old and matches program course.
• What if I didn’t have a 3.0 GPA? You may still be admitted – we will discuss your academic record and other qualifications.
• Do you count internships or co-ops in the 2 year minimum requirements? Yes, but only up to 1 year of the 2 year requirement.
• Do I have to take a course every semester? No, you can stop and start or adjust course load, but each course expires after 7 years.
Next Steps

• We will follow-up:
  – Email slides and inquire further about your interest
• Visit websites for more info:
  – https://www.rit.edu/engineering/engineering-leadership
    (Engineering Leadership)
  – https://www.rit.edu/admissions/graduate#applying-for-admission
    (Apply for Admission)
  – https://www.rit.edu/admissions/aid
    (Aid)
• Contact us with any questions

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