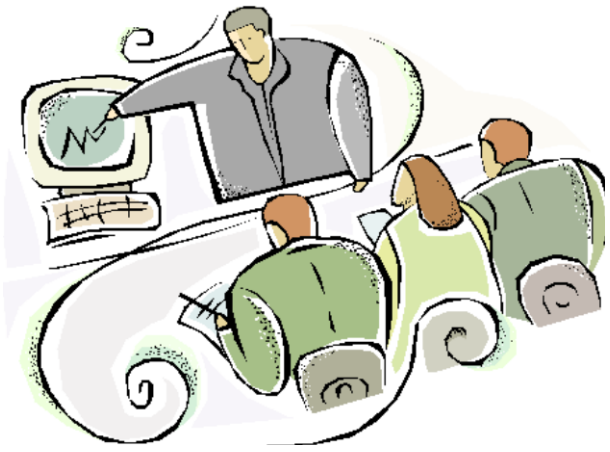
2010

Product Development & Process Improvement

Training Catalog

Licensed by the State of Michigan



Optimizing performance by accelerating experience

THE CENTER FOR PROFESSIONAL STUDIES

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2010 Training Catalog

Volume 19, Publication and Effective Date May 1, 2010

The Center for Professional Studies, LLC
811 West Square Lake Road
Troy, Michigan 48098

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The content of this catalog reflects information available at the time of publication. **CPS** reserves the right to make reasonable changes at its discretion to the content of this catalog to improve and update the academic programs.

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General Information

Mission Statement

- Mission
  Provide world class, industry specific and current technical education developed and delivered by professional industry experts

- Commitment
  Constantly evaluate and update effective curriculum using industry leaders to meet the current challenges of the market

- Belief
  These steps will direct the future of technical training to the many industries we serve and deliver it in a cost effective manner

History

1993	Founded by Kas Kasravi as a licensed educational and training institute
1994	Awarded the largest State of Michigan training grant
1997	"Campus Training Partner" status with Alias
1998	Authorized trainer for GM in Unigraphics
1999	Preferred training source for all major CAD systems
2002	Incorporated engineering tools & techniques curriculum
2005	Education partner status with Dassault Systems
2006	Incorporated Designing Engineer curriculum
2007	Incorporated Program Management & PMP certification
2008	Incorporated Lean Six Sigma Green & Black Belt certification
2009	Incorporated Business Management curriculum
2010	Incorporated Simulation / Test Engineer curriculum

What CPS Offers

Efficient focused classes taught by industry experts
Flexible training schedules
Efficient training techniques to maximize learning
Real life application of the training subject
Company specific projects worked on applying standard
Experience in all key engineering tools and techniques
Approved vendor of training services
Michigan Department of Career Development License
Expertise in petitioning, developing & executing training grants
Proven & constantly updated curriculum
Curriculum that can be customized for specific needs
Placement services are offered to all CPS students on request

Licensing

CPS is licensed by the State of Michigan as a clock hour training institution (Number **20030002)**

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Enrollment Information

Admission Requirements

1. All students must submit a copy of their earned High School diploma, GED, or equivalent prior to enrollment
2. Students that have attended courses elsewhere and wish to have certain classes waived must submit certificates or transcripts of classes taken elsewhere
3. Students desiring enrollment into a CAD program must possess basic computer skills
4. Students desiring enrollment into any Certificate Program must possess basic math and reading skills
5. All students must read the General Information regarding **CPS** and its procedures prior to enrollment
6. All students must complete and return a **CPS** Registration Form and remit full tuition payment in order to be enrolled
7. All students are expected to be proficient in the English language
8. International students may be required to submit satisfactory TOEFL (Test of English as a Foreign Language) scores prior to admission

To Enroll

- Review the catalog, schedule, complete the enrollment agreement, proof of High School Diploma (or equivalent), any pre-requisite courses and appropriate tuition payment to the Office of the Registrar
- Full payment is required for registration
- Tuition is published in the Training Schedule and covers all costs for training
- Textbooks, manuals, supplements, and course packs are ***not*** included in the tuition
- **CPS** accepts VISA, MasterCard, American Express, check, money order, company purchase orders, or approved training vouchers
- Please make checks payable to **The Center for Professional Studies**
- Telephone, fax and on-line enrollments must be accompanied by credit card or purchase order number
- Registration will not be finalized until proof of High School Diploma (or equivalent) and proof of any pre-requisite course(s) has been received
- Withdrawal from class does not affect the student's financial liability for the class
- International students must submit acceptable TOEFL (Test of English as a Foreign Language) scores and schedule an interview with the **CPS** Career Development Facilitator prior to admission
- A confirmation of student enrollment will be mailed by **CPS** upon receipt of
    1. Enrollment agreement
    2. Proof of High School completion
    3. Proof of pre-requisites
    4. Full payment
- A Certificate of Competency will be awarded to students successfully completing each class and remaining in good standing under the Student Code of Conduct guidelines
- Certificates and transcripts will ***not*** be issued unless all academic and tuition requirements have been met in full
- Replacement certificates are available at the cost of $15 per certificate
- Transcripts are issued upon on request at the cost of $10 per transcript

Holidays

No classes or exams are held during the following holidays:

New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas

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Additional Information

Cancellation and Refund Policy

CPS offers *Classes* and *Programs*:

- Students enrolling in Programs may pay tuition based on the scheduled *Program* tuition or may choose to pay tuition on a *Class* basis as listed in the Schedule of Classes
- All monies paid shall be refunded if the applicant is rejected by the school before enrollment
- An application fee of $25.00 will be retained by the school if the applicant is denied
- All monies will be refunded if requested with three business days after signing an enrollment contract
- All refunds will be returned within 30 business days

For Program Enrollment:

- Students paying tuition on the *Program* basis will be entitled to a refund, if requested, calculated on an hourly prorated scale
- The calculation will be the hours attended divided by the total *Program* hours and rounded down to the closest 10% of completion
- No refunds will be issued after a student has completed more than 60% of the *Program*

For Class by Class Enrollment:

- All refunds due the student will be refunded within 30 business days of the last day of attendance.
- **CPS** reserves the right to cancel any class or class session
- Students will be promptly notified in such an event, as long as contact information is provided and updated to **CPS** by the student
- Classes may be cancelled due to adverse weather conditions or systems failures or other unforeseen situations, such as power outages
- In such an event, **CPS** will endeavor to contact each student in as timely a manner as possible
- **CPS** will also inform the radio station when there is a total school closing
- Make-up sessions will be scheduled in case of any cancellation
- **CPS** reserves the right to schedule additional classes (based on demand)
- A $30 service fee will apply to all returned checks
- All course offerings, schedules and fees are subject to change

Termination Policy

A student is subject to termination for violating any of the following:

- Failure to maintain satisfactory progress in the class or failure to complete the training within the maximum time frame
- Failure to achieve the knowledge and skills required by the occupation for which the training is intended
- Failure to comply with the **CPS** attendance policy
- Failure to comply with the **CPS** Student Code of Conduct
- Failure to meet all financial obligation to **CPS**
- Violation of any of the conditions as set forth and agreed to on the Registration Form

Probation Policy

CPS students in jeopardy of termination due to any reason (as listed above in the Termination Policy) will be notified by **CPS** in writing that continued unsatisfactory progress will result in termination. Reinstatement request should be addressed to the **CPS** Career Development Facilitator for review.

Class Schedules and Tuition

CPS's class schedule accommodates full-time and part-time students. Full-time student status is defined at an average of 8 contact hours per week over the duration of the program.

CPS publishes detailed class schedules several times per year, and CPS's web site provides the most up-to-date class schedule. These schedules with published tuition become part of this catalog. Unless otherwise noted, published tuition includes books and all fees.

Severe Weather Cancellations

CPS will cancel class for severe weather conditions and make up time will be scheduled at a later date. When the Troy Schools system has canceled classes due to severe weather conditions CPS will also cancel classes.

Student Code of Conduct

To best prepare **CPS** students for a successful career, as well as to maximize training, all students are required to adhere to the following Code of Conduct while attending **CPS** classes. Violations of the **CPS** Student Code of Conduct may result in the student's dismissal without refund. The student in poor standing will also be removed from the **CPS** Graduate Placement Assistance Referral List and will no longer be allowed to enroll into or attend future **CPS** classes.

CPS' Student Code of Conduct includes, but is not limited to the following:

- Students must conduct themselves in a professional and non-disruptive manner, demonstrating respect towards fellow students, staff, and facility hosts
- Students must not exhibit violence, insubordination, or inappropriate language toward any school staff or another student
- The destruction or damage of school or facility property is prohibited
- Many **CPS** classes are held in industrial facilities for maximum learning opportunity. In these facilities, the students must respect all building and security guidelines, keep the facilities clean and tidy, and avoid any damage to the equipment, facility or personal property
- Food and beverages may be consumed in designated areas only
- Smoking is permitted outside the buildings only
- Use of any illegal drugs or alcohol on school property or attending school while under the influence of illegal drugs or alcohol is prohibited
- **CPS** students must complete their homework (in a timely manner) and exams without receiving unfair assistance from others
- Cheating on exams will be grounds for immediate dismissal without reimbursement of any kind
- Certificates and transcripts will ***not*** be issued unless all academic, attendance and tuition requirements have been met in full, and student is in good standing
- **CPS** students are expected to demonstrate a full commitment to learning by regularly attending classes and completing the assignments, unless excused due to emergencies

Tardiness, Attendance and Make-up Work

Tardiness is defined as being 20 minutes (or more) late to class. Twenty minutes after the start of class, a student is considered tardy. If a student is tardy three times, it will be equal to one absence. Students that are not in attendance for at least 50 percent of the scheduled class time for a class period will be considered absent for that class.

Good student attendance and punctuality is vital to successful completion of training and successful careers. If a student's cumulative tardiness and absences are equivalent to missing more than 20% of the total clock hours of the course, the student's grade will reflect the poor attendance. More than 25% absence constitutes grounds for a failing grade or an incomplete, depending on the circumstances. Whenever possible, students should notify the instructor of the **CPS** Career Development Facilitator of an upcoming absence or tardiness, so that makeup work or other arrangements can be made to compensate for the absence.

Training must be completed within a timely manner: for a clock hour program, the maximum time frame shall not exceed 1.5 times the normal duration of the program. If a student cannot complete the training within the maximum time frame, the student may be terminated from the program. An "Incomplete" is assigned as a grade until the student makes up the missed assignment or exam. Students have one week to turn make-up work into **CPS** before this grade is reassessed.

Students will be required to make up all assignments, exams, or other work missed as the result of any excused or unexcused absence. The student must make arrangements with the instructor to ensure that all work is made up before the end of the module in which the work was missed. The instructor may assign additional outside make-up work if deemed appropriate. Arrangements to take a missed exam must be made with the instructor within one week of returning from an absence. All arrangements are subject to approval by the Career Development Facilitator and/or the **CPS'** Managing Director.

The Grading System

The grading system used by the school to indicate student progress:

A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	0 – 59% (failed)
P	Passed (70% or better)
I	Incomplete (opportunity will be given to complete course)
W	Withdrawn
X	Class canceled (student not at fault)

CPS measures classes only in "contact hours." A "contact hour" is defined as 50 minutes of instruction or contact per hour that students will receive, depending on the class schedules or breaks.

Students must achieve satisfactory progress in every class in the program sequence to be admitted in to the next class. **CPS** recognizes 70% or better as satisfactory progress. If a student is withdrawn from a class or a class is cancelled, the student is not affected by these statuses. Only an "A", "B", "C" or "P" is acceptable standards for satisfactory progress at **CPS**.

Grievance Procedures

Student Grievance Procedures are available for any student who believes he or she has a grievance against the faculty, or where procedures for the resolution of that grievance are not provided for by other means. Students should first discuss any concern with the staff member involved or the course coordinator.

If a student is unable to resolve a grievance by other means, he or she should contact the Managing Director and explain in writing the basis of the grievance. The Director will attempt to negotiate a successful resolution to the grievance. If required, a complaint will be heard and resolved by the faculty's grievance committee.

The office of the Career Development Facilitator receives complaints about administrative matters and is charged with investigating and settling complaints.

Students who wish to file a complaint with the State of Michigan may do so at www.michiganps.net.

Any student can submit a grievance based on the following:

1. With a question about interpretation or application of a **CPS** school policy or procedure
2. That is in disagreement with any non-academic service provider or supervisor
3. That feels that he or she has been treated unfairly
4. that has some problems which have not been resolved to his or her satisfaction

The Training Center

CPS's training center is co-located at the MSU Management Education Center located in Troy, Michigan. The center occupies 24,000 sq. ft. of office space, including a training room, administrative offices and a resource library. The training facilities include computer workstations and software for teaching computer based classes. Through its alliances with leading engineering companies, **CPS** also offers classes in other systems at industrial locations throughout southeast Michigan. **CPS** maintains a web site, which provides the latest information about the training programs.

Notice of Nondiscriminatory Policy

The Center for Professional Studies admits students of any race, color, religion, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the school. It does not discriminate on the basis of race, color, religion, national and ethnic origin in administration of its educational policies, admissions policies, scholarships and loan programs, athletics, and other school-administered programs.

Tuition Assistance

CPS cooperates with many community agencies to assist students in obtaining tuition assistance. The following agencies may assist eligible clients with tuition. Additional agencies can be found in the Blue Pages of your local phone directory.

Michigan Educational Development Commission
Michigan Rehabilitative Services
Ferndale Project Jobs
Southfield Career Center
Oak Park Career Center
Macomb and St Clair Michigan Works!
North Oakland County Career Center
Troy Career Center
Job Link
Goodwill Industries
Waterford Career Center
Operation ABLE

Corporate Training

Training programs may be customized to meet the needs of its corporate clients. Specifically, **CPS** offers the following training services to corporations:

- Grant Preparation
  Identify grant opportunities and assist with the subsequent preparation of the grant application
- Needs Analysis
  Consultation to establish an optimum training program for the individual client
- Custom Course Development
  Develop customized courses in any CAD related subject, based on demand
- In-house Training
  Classes may be held at client's location, minimizing facilities charges, and student travel time
- Volume Discounts
  Reduced training rates may be available for volume corporate training
- Certified Training Courses
  Authorized training partner for Dassault Systemes and Rhino

List of CPS major Corporate Clients

- Original Equipment Manufacturers (OEM's)
  General Motors, Ford, Chrysler, UAW (GM, Ford & Chrysler), Porsche, Saab, Saturn, US Army, General Dynamics
- Major Tier Suppliers
  American Axle, Automotive Industries, AxleTech International, Budd, Detroit Diesel, Findlay, ITT, Karmann, Key Plastics, Lear, Magna, Magna Steyr, Piston Group, Quality Metal Craft, Tower, Trico, United Technologies, Valeo
- Major Engineering Suppliers
  Aerotek, Altair, Comau, EDAG, EDS, Efficient Engineering, Engineering Technology, Global Tech, Gonzalez Engineering, Grand Design, Hawtal Whiting, Kuka, Modern Engineering, MSX International, Axiem, Engineering Solid Solutions, Hubert Group, New Dimensions, RCO, True Kraft, Troy Design, Utica Enterprises, Waltonen Engineering, Wisne Design
- Governmental Institutions
  Central Michigan University, City of Detroit, City of Southfield, Greater Pontiac Area Consortium, MESC, Oakland Community College, Schoolcraft College, Thumb Area Consortium, Washtenaw County E & T Group.

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Certificate Programs

Designing Engineer

400 Contact Hours Certification with multiple CAD systems

Designing Engineer is focused on the technical professional who will be creating new products for multiple industries. This certificate represents the successful completion of all the key skills required to develop complex products in major industries.

Prerequisite: Minimum of 5 years experience in developing products

Curriculum Leader: Daryl Patrishkoff, PMP, CEO of the Center for Professional Studies
Bachelors and Masters Degrees
30 years in product engineering and management of global operations

Targeted Participants: Executives, Directors, Managers, Supervisors, Product Engineers, CAE Analysts, CAD Designers, Technicians, Sales Professionals

Targeted Industries: Automotive, Transportation, Specialty Vehicles, On-Highway, Off-Highway, Military, Aerospace, Energy, Ecology, Alternative Fuel Products, Medical Device Products, Consumer Products

Targeted Positions: Product Designing Engineers in multiple industries who develop multiple types of products for production

Objective: Well rounded curriculum that addresses specific job skills, tools and techniques that a Product Designing Engineer relies on to develop their specific product. These standard skills, tools and techniques apply to multiple industries, giving the participant a broad skill set to perform multiple tasks in their current position or improve their marketability.

Core Courses:
Competent Technical Communication
Program Management
Dimensional Analysis (GD&T)
Test to Failure (TTF)
Choose (1) set of CAD courses from the following list:
- Catia V5 Essentials and Mechanical Design Expert
- Pro Engineer and Advanced Pro Engineer
- Unigraphics NX7 and Advanced Unigraphics NX7

Elective Courses (choose 4):
PMP Examination Preparation
Total Quality Management (TQM)
Alternative Energy Technologies Overview
Lean Manufacturing
Lean Six Sigma 1 (2 classes)
Lean Six Sigma 2 (2 classes)
Root Cause Analysis
APQP, FMEA & PPAP
Computer Aided Engineering (CAE)
Digital Signal Processing in Noise and Vibration Testing
Experimental Modal Analysis

Certificate Programs

Simulation / Test Engineer

400 Contact Hours with multiple CAE and test systems

A Simulation / Test Engineer are focused on the technical professional who will be creating and refining new products for multiple industries. This certificate represents the successful completion of all the key skills required to analyze and validate complex products in all major global industries.

Prerequisite: Minimum of 5 years experience in product development

Curriculum Leader: Kevin Grenier, Senior Technical Specialist at LMS International
Bachelors and Masters Degrees
20 years in the Test and Hybrid Simulation engineering profession

Targeted Participants: Executives, Directors, Managers, Supervisors, Product Engineers, CAE Analysts, Test Engineers, Sales Professionals

Targeted Industries: Any industry that develops products, manufactures products, assembles products or provides a service to companies or consumers

Targeted Positions: Technical Managers, Product Design, Test or CAE Engineers, Technicians who develop multiple types of products

Objective: Present a well rounded curriculum that addresses specific job skills, tools and techniques that an Engineer relies on to develop their specific product. These standard skills, tools and techniques apply to multiple industries, giving the participant a broad skill set to perform multiple tasks on their current position or improve their marketability for prospective positions.

Core Courses:
Competent Technical Communication
Computer Aided Engineering (CAE)
Digital Signal Processing in Noise and Vibration Testing
Experimental Modal Analysis
Rotating Machinery Testing and Source Path Models
Simulation for Kinematic and Dynamic Behavior and Fatigue Life
Design of Hydraulic and Thermal Fluid Systems

Elective Courses (choose 3):
Numerical Optimization Methods for Correlation and Updating
Design of Vehicle Energy Management for Improved Performance
Acoustic Simulation
Sound Engineering Testing and Analysis
Advanced Modal Analysis
Test to Failure (TTF)
Program Management
PMP Examination Preparation
Unigraphics NX7
Advanced Unigraphics NX7
Pro Engineer
Advanced Pro Engineer

Certificate Programs

Program Management

400 Contact Hours with Preparation for the PMP Certification

Program Management is focused on the professional who manages complex programs from concept, design, validation, launch and continuous improvement stages of development. The PMP certification is globally recognized across all major industries as an effective way to manage the organizations key corporate initiatives.

Prerequisite:	Minimum of 8 years experience in managing projects
Curriculum Leader:	Daryl Patrishkoff, PMP, CEO of the Center for Professional Studies Bachelors and Masters Degrees 30 years in product engineering and management of global operations
Targeted Participants:	Executives, Directors, Managers, Supervisors, Product Engineers, Manufacturing Engineers, Production Engineers, Analysts, Designers, Technicians, Program Managers, Product Specialists, Sales Professionals
Targeted Industries:	Any industry that develop products, manufacture products, assembles products or provides a service to companies or consumers
Targeted Positions:	Executives, Directors, Managers, Supervisors, Product Specialists and Program Managers that mange large complex projects
Objective:	Present a well rounded curriculum that addresses specific job skills, tools and techniques a Program Manager relies on to execute their complex projects. Deliver the knowledge and skills required to pass the Project Management Institute's PMP certification test.
Core Courses:	Competent Technical Communication Program Management APQP, FMEA & PPAP Root Cause Analysis Lean Manufacturing PMP Examination Preparation
Elective Courses (choose 4):	Total Quality Management (TQM) Lean Six Sigma 1 (2 classes) Lean Six Sigma 2 (2 classes) Alternative Energy Technologies Overview Dimensional Analysis (GD&T) Computer Aided Engineering (CAE) Test to Failure (TTF) Digital Signal Processing in Noise and Vibration Testing Experimental Modal Analysis Unigraphics NX7 Advanced Unigraphics NX7 Pro Engineer Advanced Pro Engineer

Certificate Programs

Lean Six Sigma Black Belt

400 Contact Hours with Provided Project for Certification

Lean Six Sigma is focused on the professional who desires to attain a Black Belt certification which is recognized in multiple global industries. We provide a partnering company and project for your certification. Once certified, the candidate is globally recognized in all major industries as a change agent who can drive efficiency into the organization.

Prerequisite: Minimum of 5 years experience

Curriculum Leader: David Patrishkoff, President of Innovative Solutions Group
Bachelors and Masters Degrees
30 years in product engineering and management of global operations

Targeted Participants: Executives, Directors, Managers, Product Engineers, Manufacturing Engineers, Production Engineers, Analysts, Designers, Technicians

Targeted Industries: Any industry that develop products, manufacture products, assembles products or provides a service to customers

Targeted Positions: Executives, Directors, Managers, Product Engineers, Manufacturing Engineers, Production Engineers, Analysts, Designers, Technicians

Objective: Present a well rounded curriculum that addresses specific job skills, tools and techniques a Black Belt Six Sigma Professional relies on to initiate and perform their improvement projects. Deliver the knowledge and skills required to successfully document an improvement project and achieve certification.

Core Courses:
Competent Technical Communication
Lean Manufacturing
Total Quality Management (TQM)
Lean Six Sigma 1 (2 classes)
Lean Six Sigma 2 (2 classes)

Elective Courses (choose 3):
Alternative Energy Technologies Overview
Dimensional Analysis (GD&T)
APQP, FMEA & PPAP
Program Management
PMP Examination Preparation
Computer Aided Engineering (CAE)
Test to Failure (TTF)
Digital Signal Processing in Noise and Vibration Testing
Experimental Modal Analysis
Unigraphics NX7
Advanced Unigraphics NX7
Pro Engineer
Advanced Pro Engineer

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Certificate Programs

Business Management

400 Contact Hours Certification

Designed for the professional who desires to obtain and enhance specific business management knowledge and skills in order to provide maximum contribution in today's business environment. This certification demonstrates the completion of a number of key skills required to be successful within complex business environments in major industries.

Prerequisite: Minimum of 5 years experience

Curriculum Leader: Mark Marheineke
Bachelors and Masters Degrees
20 years in executive management of global operations

Targeted Participants: Executives, Directors, Managers, Supervisors, Sales Professionals

Targeted Industries: Any industry that develop products, manufacture products, assembles products or provides a service to companies or consumers

Targeted Positions: Executives, Directors, Managers, Supervisors, Sales Professionals, Program Managers, Product Specialist

Objective: Present a well rounded curriculum that addresses specific job skills, knowledge, tools and techniques professionals rely on to be successful in any company. These standard skills, tools and techniques apply to multiple industries, giving the participant a broad skill set to perform multiple tasks on their current position or improve their marketability for prospective positions.

Core Courses:
Competent Technical Communication
Total Quality Management (TQM)
Effective Leadership and Strategic Planning
Program Management

Elective Courses (choose 6):
Alternative Energy Technologies Overview
Lean Manufacturing
Lean Six Sigma 1 (2 classes)
Lean Six Sigma 2 (2 classes)
Root Cause Analysis
Dimensional Analysis (GD&T)
Computer Aided Engineering (CAE)
Test to Failure (TTF)
Digital Signal Processing in Noise and Vibration Testing
Experimental Modal Analysis
APQP, FMEA & PPAP
PMP Examination Preparation
Unigraphics NX7
Advanced Unigraphics NX7
Pro Engineer
Advanced Pro Engineer

Certificate Programs

ProEngineer

80 Contact Hours CAD Certification

The ProEngineer program is focused on the technical professional who will be creating new products for multiple industries. This certificate represents the successful completion of all the key skills required to develop complex products in major industries.

Prerequisite:	Design or Engineering experience
Curriculum Leader:	Daryl Patrishkoff, PMP, CEO of the Center for Professional Studies Bachelors and Masters Degrees 30 years in product engineering and management of global operations
Targeted Participants:	Executives, Directors, Managers, Supervisors, Product Engineers, CAE Analysts, CAD Designers, Technicians, Sales Professionals
Targeted Industries:	Automotive, Transportation, Specialty Vehicles, On-Highway, Off-Highway, Military, Aerospace, Energy, Ecology, Alternative Fuel Products, Medical Device Products, Consumer Products
Targeted Positions:	Product Designing Engineers in multiple industries who develop multiple types of products for production
Objective:	Well rounded curriculum that addresses specific job skills, tools and techniques that a Product Designing Engineer relies on to develop their specific product. These standard skills, tools and techniques apply to multiple industries, giving the participant a broad skill set to perform multiple tasks in their current position or improve their marketability.
Core Courses:	Pro Engineer Advanced Pro Engineer

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Certificate Programs

PMP Examination Preparation

80 Contact Hours Preparation for the PMP Certification

PMP Examination Preparation is focused on the professional who manages complex programs from concept, design, validation, launch and continuous improvement stages of development. The PMP certification is globally recognized across all major industries as an effective way to manage the organizations key corporate initiatives.

Prerequisite:	Minimum of 8 years experience in managing projects
Curriculum Leader:	Daryl Patrishkoff, PMP, CEO of the Center for Professional Studies Bachelors and Masters Degrees 30 years in product engineering and management of global operations
Targeted Participants:	Executives, Directors, Managers, Supervisors, Product Engineers, Manufacturing Engineers, Production Engineers, Analysts, Designers, Technicians, Program Managers, Product Specialists, Sales Professionals
Targeted Industries:	Any industry that develop products, manufacture products, assembles products or provides a service to companies or consumers
Targeted Positions:	Executives, Directors, Managers, Supervisors, Product Specialists and Program Managers that mange large complex projects
Objective:	Present a well rounded curriculum that addresses specific job skills, tools and techniques a Program Manager relies on to execute their complex projects. Deliver the knowledge and skills required to pass the Project Management Institute's PMP certification test.
Core Courses:	Program Management PMP Examination Preparation

Certificate Programs

Lean Six Sigma Green Belt

80 Contact Hours with Provided Project for Certification

Lean Six Sigma is focused on the professional who desires to attain a Green Belt certification which is recognized in multiple global industries. Our complete program delivers the knowledge and skills required to successfully document an improvement project and achieve certification. We provide a partnering company and project for your certification. Once certified, the candidate is globally recognized in all major industries as a change agent who can drive efficiency into the organization.

Prerequisite:	Minimum of 5 years experience
Curriculum Leader:	David Patrishkoff, President of Innovative Solutions Group Bachelors and Masters Degrees 30 years in product engineering and management of global operations
Targeted Participants:	Executives, Directors, Managers, Product Engineers, Manufacturing Engineers, Production Engineers, Analysts, Designers, Technicians
Targeted Industries:	Any industry that develop products, manufacture products, assembles products or provides a service to customers
Targeted Positions:	Executives, Directors, Managers, Product Engineers, Manufacturing Engineers, Production Engineers, Analysts, Designers and Technicians
Objective:	Present a well rounded curriculum that addresses specific job skills, tools and techniques a Green Belt Six Sigma Professional relies on to initiate and perform their improvement projects. These standard skills, tools and techniques apply to multiple industries, giving the participant a broad skill set to perform multiple tasks on their current position or improve their marketability for prospective positions.
Core Course:	Lean Six Sigma 1 (2 classes)

Course Listing

CPS Course Methodology

Optimizing performance by accelerating experience

Lectures

- Outlining the theory and standardized accepted methodology
- PDF file of lecture material is provided for the students personal use
- Lecture note outlines to help the student capture personal notes

Specific Industry Examples

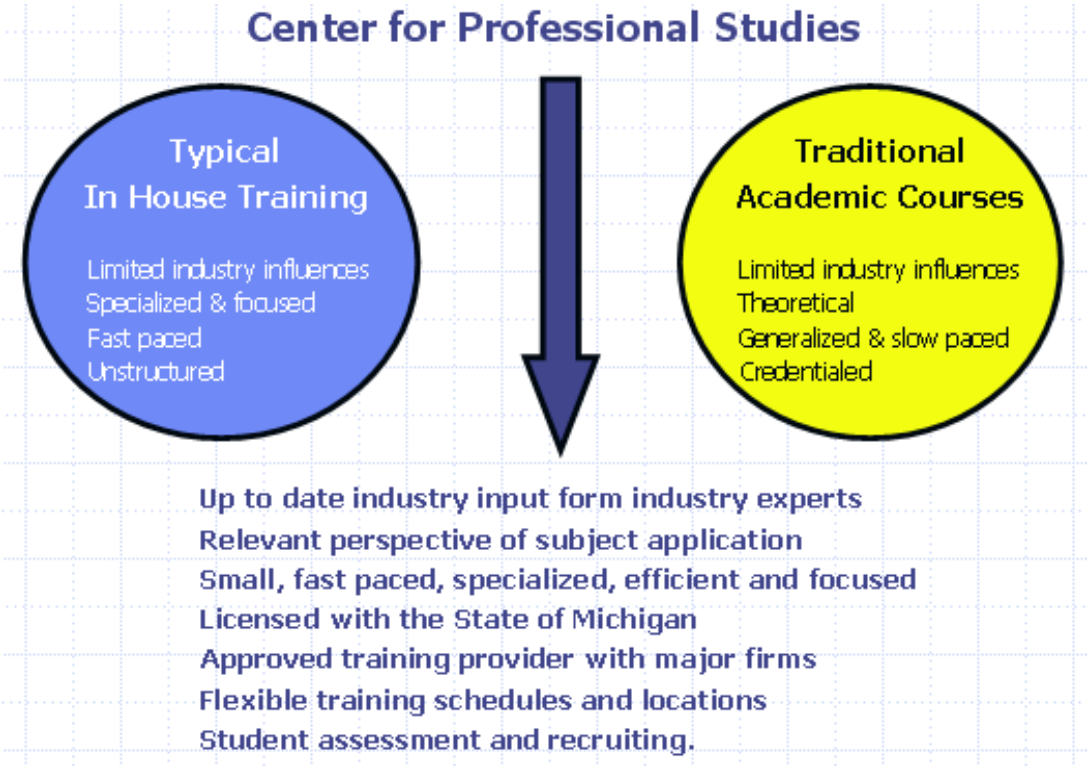
- Real life industry examples that detail out the application of the standard
- Demonstrate how different companies apply these tools and techniques
- Detailed discussion on how company cultures dictate the application of the standard

In-Class Assignments

- Student will conduct several projects that outline each key principal of the standard
- These projects increase in complexity as the students further develop their skills
- Students will present their work to the group for review and discussion
- Detailed discussion regarding each project and how it meets the standard

Specific Company Application

- Specific projects that apply these tools and techniques on specific company projects
- Build a standard methodology for appropriate application at the operation



Business Management Courses

Competent Technical Communication

Duration: 40 contact hours
Prerequisite: None

Whether you're talking one on one or in a group presentation, speaking with confidence will impress, persuade and open more doors than you can imagine. This course focuses on three areas of communication required for personal success at work: presentation development and delivery, interpersonal communication (one-on-one) and communication in group settings, such as meetings. Several modules are dedicated toward helping you to find your next career opportunity including resume writing, interviewing tips and techniques, networking, the art of follow up, and how to use social media to promote your skills and image.

This course emphasizes the importance of planning communication events or meetings as well as follow-through and accountability. Throughout the course, students will have an opportunity to apply tools and techniques in small and whole group practices (including video feedback). Students will learn and practice techniques for a variety of meeting objectives (gather information, share information, problem solving, sales, etc.). These will be applied in a variety of listening and feedback venues.

Total Quality Management (TQM)

Duration: 40 contact hours
Prerequisite: None

This is a comprehensive theory-and-practice overview course, incorporating decades of Total Quality management (TQM) learning. After World War II, the U.S. became complacent in focusing on quality products/services. The American consumer essentially bought whatever was made as fast as it became available. It wasn't until 20 years later when the quality of American products (compared to imports) began to dramatically "slip" and a sense of urgency throughout many manufacturing communities began to drive greater focus on tools of quality for continuous improvement in product development and manufacturing and in service industries.

Having a background in understanding or using TQM is not a course prerequisite. This course takes participants through a brief history and introduction to universal TQM principles. This forms the basis of understanding the application of all the practical TQM tools that they will learn and practice for both personal and professional examples.

Effective Leadership and Strategic Planning

Duration: 40 contact hours
Prerequisite: None

This course is designed as an introduction to the form and function of 95% of all medium to large organizations in the industrialized world today - whether they are public or private; for profit or non-profit. Other than small, family owned businesses, most organizations larger than 10 people begin to add functions to help manage the work. But isn't this obvious? Don't we already know what 'Finance' and 'Human Resources' do? Actually, what most people perceive to be the role of various functions within an organization is often only a small percentage of their total workload. Most functional areas serve multiple stakeholders: management, employees, suppliers, and customers.

This course was designed to introduce basic organizational design and to help students view organizations as 'systems'. Participants will learn how various subsystems work together to support and organize day-to-day functioning that keeps things running (hopefully) smoothly.

Perhaps the most intriguing part of this course is the discussion about that part of organizations which some describe as 'the white space' between the boxes on the org chart. Some refer to this as the organizational 'culture' and 'company politics'. The best companies to work for usually aren't judged so because they've organized their functions extremely well – it's usually about what's NOT on the org chart that matters most.

Finance for the Non-Financial Manager

Duration: 40 contact hours
Prerequisite: None

This course is designed as an introduction to the basics used in companies to report, track and forecast specific financials to industry standards. The participant will be exposed to the normal business planning process and how to build bottom up financial tools to help decide strategic business direction.

Once the business plan is complete the methods to tracking and forecasting are explored and monthly reporting methodologies are explored to ensure obtaining the financial goals of the organization. Financial return maps are understood and cash flow tools, techniques and methodologies are reviewed.

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Industry Specific Courses

Automotive Vehicle Design Process

Duration: 32 contact hours
Prerequisite: Basic understanding of the automotive industry

This course is developed to give an overview of the coordinated effort it takes to develop an automobile from the very early concept idea, through feasibility, validation, launch and continuous improvement initiatives while in production. We discuss the key processes, tools, techniques and methodologies utilized in vehicle development. We then expand on the multiple quality systems that are put in place to ensure compliance to the engineering specifications.

Key players in the industry are discussed and understood along with the roles and responsibilities they assume to bring a vehicle system into production. We will detail the Original Equipment Manufacturers (OEM), various types of suppliers, individuals that perform the tasks and how they are all orchestrated to ensure compliance to the programs scope, time, budget and quality targets required for the vehicles targeted specific market.

Alternative Energy Technologies Overview

Duration: 40 contact hours
Prerequisite: None

This course focuses on gaining a basic understanding of the various alternative energy technologies (wind, solar, biomass, geothermal) and their real-world benefits and applications. At the completion of this course the participant will have an understanding of the elements of each basic technology, its application, feasibility analysis, and the basic business elements.

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Process Improvement Courses

Lean Manufacturing

Duration: 40 contact hours
Prerequisite: Understanding of the vehicle product development process and basic product and manufacturing engineering

A quality process driven organization has a consistent standardized process in planning to deliver projects to stated quality standards. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with comprehensive quality based documentation, tools and techniques.

These Lean Manufacturing processes, tools and techniques have been developed and continually improved by the Toyota Production System (TPS) to outline a standard methodology and philosophy to identify and eliminate waste in the production system. It is widely utilized in the automotive industry and has expanded into the heavy truck and transportation segments and finding its way into other product development markets.

Root Cause Analysis

Duration: 40 contact hours
Prerequisite: Understanding of the vehicle product development process and basic product and manufacturing engineering

A quality process driven organization has a consistent standardized process in developing and delivering their products and services. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with comprehensive quality based documentation, tools and techniques.

Root Cause Analysis is a class of problem solving methods aimed at identifying the root causes of problems or events. This practice is predicated on the belief that problems are best solved by attempting to correct or eliminate root causes, as opposed to merely addressing the immediately obvious symptoms. By directing corrective measures at root causes, it is hoped that the likelihood of problem recurrence will be minimized.

Dimensional Analysis

Duration: 40 contact hours
Prerequisite: Understanding of basic drafting and design techniques

A quality focused organization has a consistent standardized methodology in applying dimensional analysis into its product development process. Having this system established, understood and consistently utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with proper application of dimensional control on their products.

The application of GD&T is a well defined American National Standard endorsed by The American Society of Mechanical Engineers (ASME) which is utilized in multiple industries. GD&T correctly applied with efficient dimensional schemes can control the systems fit, form and function.

Test to Failure (TTF) and Other Methods of Accelerated Stress Testing

Duration: 40 contact hours
Prerequisite: Basic understanding of statistics and product testing

This course focuses on the theory and practical methods of obtaining accurate prediction of product life in the minimum amount of time. This can be accomplished by understanding the product environment and designing tests that dramatically overstress the product to produce failure modes rapidly. Following these accelerated test methods can reduce test time, save cost and potentially provide opportunity to improve the product. At the completion of this course the participant will have a good understanding of how to set up an accelerated stress test schedule, collect data, and interpret the data.

Advanced Product Quality Planning (APQP)
Failure Mode and Effects Analysis (FMEA)
Production Part Approval Process (PPAP)

Duration: 40 contact hours
Prerequisite: Understanding of the vehicle product development process sand basic product and manufacturing engineering

A quality process driven organization has a consistent standardized process in planning to deliver projects to stated quality standards. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with comprehensive quality based documentation, tools and techniques.

These Advanced Product Quality Process (APQP) and Production Part Approval Process (PPAP) processes have been developed by the Automotive Industry Action Group (AIAG) to outline a common process and documentation procedure for their supply base. It is widely utilized in the automotive industry and has expanded into the heavy truck and transportation segments and finding its way into other product development markets.

Introduction to ISO

Duration: 40 contact hours
Prerequisite: Understanding of the vehicle product development process and basic product and manufacturing engineering

A quality process driven organization has a consistent standardized process in developing and delivering their products and services. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with comprehensive quality based documentation, tools and techniques.

ISO 9001 is an internationally developed and recognized process developed by the International Organization for Standards (ISO) to help companies develop, document and ensure their quality business operations is in compliance to the standard.

ISO 9001 and TS 16949

Duration: 40 contact hours
Prerequisite: Understanding of the vehicle product development process and basic product and manufacturing engineering

A quality process driven organization has a consistent standardized process in developing and delivering their products and services. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently with comprehensive quality based documentation, tools and techniques.

ISO 9001 is an internationally developed and recognized process developed by the International Organization for Standards (ISO) to help companies develop, document and ensure their quality business operations is in compliance to the standard. TS 16949 is the specific standard developed by ISO for the automotive industry to ensure the specifics of their industry are address in a standard.

Program Management

Duration: 40 contact hours
Prerequisite: Understanding of managing complex projects

A program management driven organization has a consistent standardized process in delivering projects in a robust standardized system. Having this system established, understood and utilized creates a real differentiating factor in the marketplace which delivers projects efficiently to stated scope, time, cost and quality targets.

PMP Examination Preparation

Duration: 40 contact hours
Prerequisite: Understanding of managing complex projects and the fundamentals of the Project Management Institute (PMI)

This course focuses on Project Management Institutes (PMI) Project Management Professional (PMP) certification requirements, application process and certification test. At the completion of this course the participant will have a detailed understanding of all elements of the Project Management Body of Knowledge (PMBOK®) with industry examples, test questions and hands-on application.

A PMP application will be drafted and ready for submittal to begin the formal PMP certification process. Participants will bring information on specific company projects to be worked on during this training for real application of these concepts, tools and techniques.

Introduction to Lean Six Sigma

Duration: 40 contact hours
Prerequisite: None

Lean and Six Sigma methodologies combined offers a very large toolbox of techniques that can effectively solve almost any quality improvement, process optimization and waste reduction challenge in business today. These tools are equally applicable in improving manufacturing or transactional business processes. The application of Lean Six Sigma techniques has helped countless companies create serious business breakthroughs in a multitude of industries worldwide.

Lean Six Sigma 1

Duration: 80 contact hours
Prerequisite: None

Lean and Six Sigma methodologies combined offers a very large toolbox of techniques that can effectively solve almost any quality improvement, process optimization and waste reduction challenge in business today. These tools are equally applicable in improving manufacturing or transactional business processes. The application of Lean Six Sigma techniques has helped countless companies create serious business breakthroughs in a multitude of industries worldwide.

Participants will gain a working knowledge in LSS concepts and in Minitab data analysis software through extensive practice with practice data files from real Lean Six Sigma projects. DataFit Non-Linear Regression Analysis will also be introduced. Students will learn how to draw the correct conclusions from data analysis. Lean Process Optimization techniques will also be covered and practiced in detail.

Lean Six Sigma 2

Duration: 80 contact hours
Prerequisite: None

Lean and Six Sigma methodologies combined offers a very large toolbox of techniques that can effectively solve almost any quality improvement, process optimization and waste reduction challenge in business today. These tools are equally applicable in improving manufacturing or transactional business processes. The application of Lean Six Sigma techniques has helped countless companies create serious business breakthroughs in a multitude of industries worldwide.

Participants will gain a working knowledge in LSS concepts and in Minitab data analysis software through extensive practice with practice data files from real Lean Six Sigma projects. DataFit Non-Linear Regression Analysis will also be introduced. Students will learn how to draw the correct conclusions from data analysis. Lean Process Optimization techniques will also be covered and practiced in detail.

Design for Lean Six Sigma (DFLSS)

Duration: 40 contact hours
Prerequisite: None

Lean and Six Sigma (LSS) methodologies combined have achieved great quality improvements, process optimizations and waste reduction in today's businesses. Aggressive companies also focus on making their product designs so optimized that quality troubleshooting and lean optimization after production launch is minimal. This can be happen when Lean manufacturing and Six Sigma Quality considerations are aggressively implemented up front in the design, manufacturing and quality planning phases.

Participants will gain knowledge in how to apply DFLSS concepts and how to carry out Minitab software data analysis through practice with data files. Students will learn how to apply DFLSS tools and techniques at the earliest stages of a design concept to get a new product on the right track from day 1.

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Computer Aided Engineering Courses

Computer Aided Engineering (CAE)

Duration: 40 contact hours
Prerequisite: Understanding of product design, development, and manufacturing processes

This course focuses on an introduction to the Finite Element Analysis (FEA) method and its practical application. At the completion of this course the participant will have a fundamental understand of the finite element tool and how it can be applied to the design and development of better products.

Current popular industry software packages will be reviewed and discussed. Participants will bring information on specific company product designs to be discussed during this training for real application of these concepts, tools and techniques.

Digital Signal Processing in Noise & Vibration

Duration: 40 contact hours
Prerequisite: None

Digital Signal Processing (DSP) is the core technology behind today's noise and vibration testing. The techniques used and the associated assumptions along with their strengths and weaknesses will be presented in lecture format, and then re-enforced through active participation of the attendees.

This course presents a hands-on approach to understanding the key elements of digital signal processing which relate to noise and vibration testing. The first part of the course is intended as an introduction or review of Digital Signal Processing for engineers and technicians active in NVH. The rest of the course will focus on state-of-the-art topics and explore the latest and most advanced aspects of digital signal processing.

Experimental Modal Analysis

Duration: 40 contact hours
Prerequisite: Digital Signal Processing in Noise & Vibration

Modal analysis is an essential technology behind solving today's noise and vibration problems. This course focuses on the practical implementation of experimental modal analysis testing. This is accomplished through understanding basic technical concepts and practical hands-on performance of an experimental modal test. Concepts of theoretical background, digital signal processing, excitation techniques and extraction of modal parameters from measured frequency response functions is the goal of this seminar.

Rotating Machinery Test & Source Path Models

Duration: 40 contact hours
Prerequisite: Digital Signal Processing in Noise & Vibration

When engineering quiet, efficient and reliable products, mastering the sound and vibrations produced by engines, compressors, electrical motors, pumps and shafts, is a highly complex process. Engineering teams that focus on vibro-acoustic troubleshooting and product refinement require a comprehensive array of tools: waterfall mappings, order tracking, time data, processing functions and specialized modules to analyze and visualize the vast amounts of data that are generated. Whether you are performing measurements in an engine test cell, a vehicle on the proving ground, a helicopter in flight or on a pump in the field, rotating machinery testing and angle domain processing is a critical part of the functional performance engineering.

Simulation for Kinematic & Dynamic Behavior

Duration: 40 contact hours
Prerequisite: Durability Fundamentals

Manufacturers are pressured to deliver more complex products with increased quality in shorter development cycles. Engineering the performance of mechanical designs with traditional test-based development processes is no longer an option. The only valid alternative is evaluating functional performance attributes on a virtual prototype. The simulation of mechanical or mechatronic systems enables engineers to effectively analyze and optimize real-life performance, long before physical testing.

For engineers, the challenge is to guarantee that the dynamic performance of their mechanical systems matches the specifications. They need to make sure that numerous components interact and move as planned under real-life conditions, such as gravity and frictional forces. Virtual prototyping has to deliver the right answers on time and with the required accuracy to positively impact the development process.

Design of Hydraulic & Thermal Fluid Systems

Duration: 40 contact hours
Prerequisite: Computer Aided Engineering (CAE)

Today intelligent system integration is driving improved product performance and delivering innovative designs in a variety of industries. Recent surveys show that approximately 80% of the next-generation systems and products will be derived from so-called intelligent systems.

Using physics-based simulation, engineers can design complete fluids hydraulic and pneumatic systems, from the tank to the actuators up the fluid network. Using standardized libraries of hydraulic and the thermal fluid system components, one can develop products with components actuated by hydraulic and pneumatic fluid power systems. For example, fluid power actuation systems for crane, crawler, earthmoving and mining equipment and machine tools can be developed and analyzed. Also, fuel injection, lubrication, variable valve actuation and timing can be addressed. The solution delivers the required insights to improve product quality, robustness and reliability, reduce power generation and develop new functionality.

Numeric Optimization Methods for Correlation

Duration: 40 contact hours
Prerequisite: Computer Aided Engineering (CAE)
Experimental Modal Analysis

Today, many analysts wish to improve their structural dynamic models using measured experimental modal data. The first step in this process is to correlate the analytical and experimental models followed by sensitivity and updating processes.

This course is focused towards understanding the steps needed in order to perform a correlation study and introducing some techniques and methodologies for updating a finite element model using experimental data. It is intended for engineers working in the field of analytical and experimental modal analysis who have the need to correlate and update models.

Design of Vehicle Energy Management

Duration: 40 contact hours
Prerequisite: None

Today intelligent system integration is driving improved product performance and delivering innovative designs in a variety of industries. Recent surveys show that approximately 80% of the next-generation systems and products will be derived from so-called intelligent systems. One of the most common examples is the advanced injection and control systems essential to clean-running and fuel-efficient car engines.

Acoustic Simulation

Duration: 40 contact hours
Prerequisite: Computer Aided Engineering (CAE)

Acoustic simulation solutions cover routine applications, such as structural noise radiation and cavity field simulations, and address specific acoustic engineering issues, like engine run-ups, flow-induced noise, aero-acoustic noise or random acoustic loading. They allow to:

- Gain full insight into acoustic problems
- Accurately and quickly predict design change effects
- Minimize the cost and weight of sound treatment
- Reduce noise levels and incorporate desirable sound before prototype testing

In this course you will be trained on every aspect of the acoustic calculation process.

Sound Engineering Test & Analysis

Duration: 40 contact hours
Prerequisite: Digital Signal Processing in Noise and Vibration Testing

Product sound and sound quality are key aspects of product perception. How a product sounds plays a critical role in conveying the right message about its functionality, comfort, overall brand image and its quality. Regulations and competitive pressure have forced manufacturers to keep noise levels within limits and meet increasingly stringent sound standards. Sound engineers look for more productive testing and analysis solutions to quickly and effectively identify root causes of existing sound issues and help them efficiently design products that transmit the right brand message.

In the world of sound engineering, “one size fits all” is not applicable. This is not surprising since sound engineering addresses an extensive range of sound issues in everything from cars to gardening equipment, dishwashers to snowmobiles, and aircrafts to personal computers.

Advanced Modal Analysis

Duration: 40 contact hours
Prerequisite: Experimental Modal Analysis

This course focuses on additional test and analysis tools beyond those presented in the Basic Modal Analysis course. Topics include operating data, multiple input multiple output testing, advanced multiple reference modal parameter estimation, structural dynamic modification using both modal data and measured impedances, forced response simulation, and other topics related to advanced manipulation of measured structural dynamic data.

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Computer Aided Design Courses

Auto CAD

Duration: 24 contact hours
Prerequisite: Basic computer skills

This course explores the latest tools and techniques covering all draw commands and options, editing, dimensioning, hatching, and plotting techniques available with AutoCAD LT 2009. The course takes the user across a wide spectrum of engineering solutions through progressive examples, comprehensive illustrations, and detailed exercises, thereby making it ideal for both the novice and the advanced user.

The course features an effective introduction detailing the tools and commands covered in each module including changes and enhancements specific to AutoCAD LT 2009. The student will discover the utility of AutoCAD LT 2009 commands, Ribbon, Menu Browser, toolbars, palettes, and shortcut menus.

Catia V5

Duration: 40 contact hours
Prerequisite: Design or engineering experience

This course provides new users with the understanding of Catia V5 necessary to produce 3d models using Catia V5. Participants acquire familiarity with the Catia V5 GUI, basic file operations, sketching, and solid modeling. Emphasis is placed on both the skillful use of part design functions, and an understanding of proper modeling technique. Different approaches to solid modeling in Catia V5 are compared to aid comprehension of the relative merits of each approach.

This course consists of multiple modules that are structured in a pedagogical sequence, covering the Sketcher, Part Design, and Wireframe and Surface Design workbenches of Catia V5.

Advanced Catia V5

Duration: 40 contact hours
Prerequisite: Catia V5

This course is intended for users who have taken the Catia V5 course or have equivalent experience. Building on the skills developed in the previous course, participants will learn assembly modeling, drawing creation, and advanced methods of 3d modeling.

This course consists of multiple modules that are structured in a pedagogical sequence, covering the Assembly Design, Drafting, Generative Sheet Metal Design, and Generative Shape Design workbenches of Catia V5.

Pro Engineer

Duration: 40 contact hours
Prerequisite: Design or engineering experience

This comprehensive course introduces students to feature based 3D parametric solid modeling using the Pro Engineer Wildfire 4.0 software. The course covers all major environments of Pro Engineer Wildfire 4.0 with a thorough explanation of commands, options, and their applications to create real-world products.

About 60 mechanical engineering industry examples are used as tutorials and an additional 40 as exercises to ensure that the student can relate their knowledge and understand the design techniques used in the industry to design a product. This course emphasizes the solid modeling techniques that improve the productivity and efficiency of the user.

Advanced Pro Engineer

Duration: 40 contact hours
Prerequisite: ProE Wildfire

Building on the proficiency in solid modeling developed in the Pro Engineer Wildfire course participants will learn methods of assembly modeling, drafting, and surface modeling. The creation of sheet metal parts will be covered, including conversion methods. The course includes an introduction to mechanisms in Pro Engineer and simply finite element analysis using Pro Mechanica.

Rhino

Duration: 24 contact hours
Prerequisite: Basic computer skills

In this comprehensive 3-day class you'll learn to create and edit accurate free-form 3-D NURBS models. This fast-moving class covers most of Rhino's functionality, including the most advanced surfacing commands.

SolidWorks

Duration: 32 contact hours
Prerequisite: Design or engineering experience

This introductory course is the foundation of your advancement in the SolidWorks World. After this course the student will be able to successfully build and use Parts, Assemblies, and Drawing Layouts, in the work place. This course will prepare the student for other SolidWorks Training Modules.

Team Center Engineering (TCE)

Duration: 24 contact hours
Prerequisite: Working knowledge of design engineering data

This Team Center Engineering course details the use of the Team Center Engineering tool to organize and manage product definition data throughout the engineering process. The course contains numerous practical examples and the student is guided through all of the concepts, techniques and commands that are necessary to gain a working knowledge of Team Center Engineering. The intended audience is engineers who will actually create data and those who only need to review data such as managers, manufacturing, and marketing. Additionally, decision makers who may never touch the data, but need to gain an understanding of PLM, will also benefit greatly.

Unigraphics NX7

Duration: 40 contact hours
Prerequisite: Design or engineering experience

The Unigraphics NX 7 course covers the fundamentals of using NX 7 for 3d solid modeling. Students are taught effective use and configuration of the NX7 GUI and a variety of methods geometry creation. The primary emphasis of the course is the development of a degree of competence in modern solid modeling techniques along with an understanding of legacy techniques still in use in many companies.

The course is a series of tutorials and emphasizes hands on exercises and activities. The course provides an excellent introduction to NX 7 and sets a strong foundation for gaining skills in more advanced features. The text stands as a valuable resource beyond the scope of the course.

Advanced Unigraphics NX7

Duration: 40 contact hours
Prerequisite: Unigraphics NX7

This course covers the more advanced features of NX 7. The course begins with comprehensive coverage of assemblies, including legacy methods still in use in some companies. Drafting is covered including the creation of custom drawing templates and the configuration of default settings. A variety of functions for the creation, evaluation and editing of surfaces will be considered along with the integration of surfaces into solid models. Finally the course will discuss advanced methods including synchronous modeling, expressions, deformable parts, and part families.

The course is a series of tutorials and emphasizes hands on exercises and activities. The text stands as a valuable resource beyond the scope of the course.

We cannot teach today's students,
with yesterday's technology,
and expect tomorrow's successes

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CPS Information

CPS Staff

Chief Executive Officer	Daryl Patrishkoff	dpatrish@cpspoly.com
Managing Director	Dennis Cavitt	dennisc@cpspoly.com
Vice President Student Services	Steve Alessandri	salessandri@cpspoly.com
Info Technology Manager	Lee Kittredge	lee@cpspoly.com

CPS Faculty

CPS instructors are selected based on their industry knowledge, experience, education, and communications skills. CPS' faculty consists of over 15 trainers, designers and engineers who are among the most experienced and qualified in the field.

CPS Advisory Board

Daryl Patrishkoff	Chief Executive Officer	Center for Professional Studies
Dennis Cavitt	Managing Director	Center for Professional Studies
Steve Alessandri	Vice President Student Services	Center for Professional Studies
Lee Kittredge	IT Manager and CAD Trainer	Center for Professional Studies
David Patrishkoff	President	Innovative Solutions Group
Rick Olt	Customer Services Manager	LMS Software
Kevin Grenier	Senior Technical Specialist	LMS Software
Mark Marheineke	President	Revelation Consulting
Cindy Miller	President	C. Miller & Associates
Joe Tori	President	G2 Business Development Solutions
William Szuch	President	SynTech
David Luik	CAE and Program Management	Independent Consultant
Dave Fiddes	Testing, Validation and Engineering	Independent Consultant
Tim Beard	Director, Engineering	Eicher
Jerry Baldwin	Director, Sales and Marketing	EDAG

Location

The Center for Professional Studies, LLC
811 West Square Lake Road
Troy, Michigan 48098

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Tuition and Fees

Business Management

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Competent Technical Communication	Cindy/Steve	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Total Quality Management (TQM)	Cindy M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Effective Leadership and Strategic Planning	Mark M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Finance for the Non-Financial Manager	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**

Industry Specific

Course Name	Instructor	Contact Hours	Course Price	Book Price	Course Fee	Total Price
Automotive Vehicle Development Process	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Alternative Energy Technologies Overview	Bill S	40	$ 2,500	$ 175	$ 100	**$ 2,775**

Process Improvement

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Lean Manufacturing	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Root Cause Analysis	Bill S/Joe T	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Dimensional Analysis (GD&T)	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Test to Failure (TTF)	Dave F	40	$ 2,500	$ 175	$ 100	**$ 2,775**
APQP, FMEA & PPAP	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Introduction to ISO	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
ISO 9001 & TS 16949	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Program Management	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Introduction to Lean Six Sigma	Dave P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Six Sigma 1	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Lean Six Sigma 2	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Design for Lean Six Sigma	Dave P	40	$ 2,500	$ 175	$ 100	**$ 2,775**

Computer Aided Engineering

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Computer Aided Engineering (CAE)	Dave L	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Digital Signal Processing in Noise & Vibration	Van Karsen	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Experimental Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Rotating Machinery Test & Source Path Models	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Simulation for Kinematic & Dynamic Behavior	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Design of Hydraulic & Thermal Fluid Systems	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Numeric Optimization Methods for Correlation	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Design of Vehicle Energy Management	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Acoustic Simulation	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Sound Engineering Test & Analysis	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**

Computer Aided Design

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Auto CAD	Noah C	24	$ 1,875	$ 175	$ 100	**$ 2,150**
Catia V5	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Catia V5	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Rhino	Lee K	24	$ 1,875	$ 175	$ 100	**$ 2,150**
Solid Works	Dasi	32	$ 1,875	$ 175	$ 100	**$ 2,150**
Team Center	Ali N	24	$ 1,875	$ 175	$ 100	**$ 2,150**
Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**

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Designing Engineer Certificate Program

Core Courses

	Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Choose (1) set of CAD courses from this list							
1	Catia V5	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Advanced Catia V5	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
2	Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
3	Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Advanced Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Competent Technical Communication		Cindy/Steve	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Program Management		Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Dimensional Analysis (GD&T)		Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Test to Failure (TTF)		Dave F	40	$ 2,500	$ 175	$ 100	**$ 2,775**
		Sub Totals	**240**	**$ 15,000**	**$ 1,050**	**$ 600**	**$ 16,650**

Elective Courses - select a minimum of (160) contact hours

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Total Quality Management (TQM)	Cindy M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Alternative Energy Technologies Overview	Bill S	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Manufacturing	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Six Sigma 1	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Lean Six Sigma 2	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Root Cause Analysis	Bill S/Joe T	40	$ 2,500	$ 175	$ 100	**$ 2,775**
APQP, FMEA & PPAP	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Computer Aided Engineering (CAE)	Dave L	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Digital Signal Processing in Noise & Vibration	Van Karsen	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Experimental Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**160**	**$ 10,000**	**$ 700**	**$ 400**	**$ 11,100**
	Grand Totals	**400**	**$ 25,000**	**$ 1,750**	**$ 1,000**	**$ 27,750**

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Simulation / Test Engineer Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Competent Technical Communication	Cindy/Steve	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Computer Aided Engineering (CAE)	Dave L	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Digital Signal Processing in Noise & Vibration	Van Karsen	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Experimental Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Rotating Machinery Test & Source Path Models	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Simulation for Kinematic & Dynamic Behavior	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Design of Hydraulic & Thermal Fluid Systems	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**280**	**$ 17,500**	**$ 1,225**	**$ 700**	**$ 19,425**

Elective Courses - select a minimum of (120) contact hours

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Numeric Optimization Methods for Correlation	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Design of Vehicle Energy Management	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Acoustic Simulation	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Sound Engineering Test & Analysis	LMS	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Test to Failure (TTF)	Dave F	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Program Management	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**120**	**$ 7,500**	**$ 525**	**$ 300**	**$ 8,325**
	Grand Totals	**400**	**$ 25,000**	**$ 1,750**	**$ 1,000**	**$ 27,750**

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Program Management Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Competent Technical Communication	Cindy/Steve	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Program Management	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
APQP, FMEA & PPAP	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Root Cause Analysis	Bill S/Joe T	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Manufacturing	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**240**	**$ 15,000**	**$ 1,050**	**$ 600**	**$ 16,650**

Elective Courses - select a minimum of (160) contact hours

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Total Quality Management (TQM)	Cindy M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Six Sigma 1	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Lean Six Sigma 2	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Alternative Energy Technologies Overview	Bill S	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Dimensional Analysis (GD&T)	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Computer Aided Engineering (CAE)	Dave L	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Test to Failure (TTF)	Dave F	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Digital Signal Processing in Noise & Vibration	Van Karsen	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Experimental Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**160**	**$ 10,000**	**$ 700**	**$ 400**	**$ 11,100**
	Grand Totals	**400**	**$ 25,000**	**$ 1,750**	**$ 1,000**	**$ 27,750**

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Lean Six Sigma Black Belt Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Competent Technical Communication	Cindy/Steve	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Manufacturing	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Total Quality Management (TQM)	Cindy M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Six Sigma 1	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Lean Six Sigma 2	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
	Sub Totals	**280**	**$ 17,500**	**$ 1,225**	**$ 700**	**$ 19,425**

Elective Courses - select a minimum of (120) contact hours

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Alternative Energy Technologies Overview	Bill S	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Dimensional Analysis (GD&T)	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
APQP, FMEA & PPAP	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Program Management	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Computer Aided Engineering (CAE)	Dave L	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Test to Failure (TTF)	Dave F	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Digital Signal Processing in Noise & Vibration	Van Karsen	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Experimental Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**120**	**$ 7,500**	**$ 525**	**$ 300**	**$ 8,325**
	Grand Totals	**400**	**$ 25,000**	**$ 1,750**	**$ 1,000**	**$ 27,750**

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Business Management Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Competent Technical Communication	Cindy/Steve	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Total Quality Management (TQM)	Cindy M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Effective Leadership and Strategic Planning	Mark M	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Finance for the Non-Financial Manager	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**160**	**$ 10,000**	**$ 700**	**$ 400**	**$ 11,100**

Elective Courses - select a minimum of (240) contact hours

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Alternative Energy Technologies Overview	Bill S	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Manufacturing	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Lean Six Sigma 1	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Lean Six Sigma 2	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
Root Cause Analysis	Bill S/Joe T	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Dimensional Analysis (GD&T)	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Computer Aided Engineering (CAE)	Dave L	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Test to Failure (TTF)	Dave F	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Digital Signal Processing in Noise & Vibration	Van Karsen	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Experimental Modal Analysis	Dr. Avitabile	40	$ 2,500	$ 175	$ 100	**$ 2,775**
APQP, FMEA & PPAP	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Program Management	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Unigraphics NX7	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**240**	**$ 15,000**	**$ 1,050**	**$ 600**	**$ 16,650**
	Grand Totals	**400**	**$ 25,000**	**$ 1,750**	**$ 1,000**	**$ 27,750**

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Pro Engineer Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Pro Engineer Wildfire	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
Advanced Pro Engineer	Lee K	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**80**	**$ 5,000**	**$ 350**	**$ 200**	**$ 5,550**

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PMP Exam Prep Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Program Management	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
PMP Examination Preparation	Daryl P	40	$ 2,500	$ 175	$ 100	**$ 2,775**
	Sub Totals	**80**	**$ 5,000**	**$ 350**	**$ 200**	**$ 5,550**

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Lean Six Sigma Green Belt Certificate Program

Core Courses

Course Name	Instructor	Contact Hours	Course Tuition	Books & Software	Course Fee	Total Price
Lean Six Sigma 1	Dave P	80	$ 5,000	$ 350	$ 200	**$ 5,550**
	Sub Totals	**80**	**$ 5,000**	**$ 350**	**$ 200**	**$ 5,550**

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