



Project Management for Electrical and Mechanical

Date: November 15 – 22, 2009

Venue: Banff Centre, Banff, AB

Instructor: Kirk Alter, Associate Professor Purdue University

This course was developed by electrical and mechanical contractors and Purdue University faculty in Indiana, is designed specifically to meet the needs of electrical and mechanical contractors.

Owners, project managers, estimators, superintendents and any employee involved in managing projects will receive an in depth look at how to successfully execute all aspects of electrical and mechanical projects. Class content specifically focuses on real examples and case studies provided by contractors in both trades.

Participants will obtain management tools that will help improve productivity, profitability, increase quality and customer satisfaction.

Course content includes:

Budgeting, Team building, Profitability in planning & scheduling, Project turnover, Labour costs, Estimating, Technology and profit, Effective project correspondence, Negotiation strategies and techniques, Materials management, Managing vendors and subcontractors.

Recommended pre-requisites: Principles of Health & Safety Management and Leadership for Safety Excellence. Gold seal accredited for 10 points.

Fees: \$3,300 incl gst **Fees include instruction, course materials, meals, accommodation and certificates** and are due in full at time of application.

Enroll online at www.meritalberta.com go to training, calendar, November courses, or contact Tracey Rose @ 780-455-5999, 1-888-816-9991 for a registration form.

Kirk Alter, Associate Professor in Purdue University's Department of Building Construction Management (BCM) and president of Fast Management, Inc., has been a full-time participant in the mechanical & electrical construction industries since the early 1970s. His career path includes working as an apprentice, journeyman, foreman, superintendent, estimator, project manager, designer, operations manager, vice president, and owner.

Professor Alter was instrumental in developing the ABC Electrical and ABC Mechanical Project Management Programs that have been held at Purdue University now for more than eleven years. He is the program coordinator and primary instructor for those programs. He brings a uniquely well-rounded perspective to the training & education he offers, and always delivers on his promise to provide tangible tools and skills to help improve the profitability and productivity of program participants and their firms.



Project Management – Electrical/Mechanical

Registration Form November 15 – 22, 2009 - Banff, AB

Please use one form per registrant (duplicate if necessary)

Last Name: _____ First Name: _____

Title: () _____ Yrs in Position: _____

Company Name: _____

Company Address: _____

City/Province: _____ Postal Code: _____

Company Phone: _____ Company Fax: _____

Please remit:

\$3,300.00 (includes GST) member Cheque Invoice (members only)
M/C VISA

Mastercard/Visa Card Number: _____ Expiry Date: _____

Cardholder's Name: _____

Fees due at time of registration. Cheques should be made payable to Merit Contractors Association. Places are guaranteed once payment has been processed.

- **CANCELLATIONS: 60 days prior to November 16, 2009 75% refund**
30 days prior to November 16, 2009 50% refund
15 days prior to November 16, 2009 No refund

Please return registration form by mail or fax to:
Merit Contractors Association
103, 13025 St Albert Trail, Edmonton, AB T5L 5G4
Fax: (780) 455-2109

Merit Contractors Association reserves the right to cancel programs with low enrolment up to five days prior to start date.

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Project Management Electrical/Mechanical Module Learning Objectives

Please note this is a general course overview and may or may not include all topics.

1. **Team Building:** The idea is to introduce program participants to good team building strategies that they can incorporate into their daily work.
2. **The Big Picture (or why we do what we do):** The focus of this module is to ensure that participants understand how what they do as managers affects the overall profitability of the firm. The use of financial statements of mechanical/Electrical contractors is included, with a strong emphasis of illustrating those things that enhance profitability.
3. **The New Professional:** The objective of this module is to get the manager to see what he/she must do in order to remain a viable, productive, and profitable manager in an era and industry in which change has become the norm.
4. **Everybody Sells:** The focus here is on developing the sales and marketing skills of all managers. Managers need to recognize that most people are not “born salesmen,” yet their daily work requires them to be constantly selling. They must sell their plan to get the job done to the field. They must sell to their general contractors (change orders, value engineering...). They must sell to their internal and external teammates. Practical exercises are used to demonstrate effective marketing and sales techniques in construction management. This module focuses on the project manager and field supervisors as salespeople.
5. **What's the Bottom Line?:** The average profitability of the subcontractor hovers near 3%. This module takes a close look at the financial performance of projects, and their impact on the overall profitability of companies. Financial analysis for contractors, combined with identification and correction strategies is taught.
6. **Make the Contract Work for You:** The focus here is to get the manager to recognize that his/her construction subcontract is a powerful tool that the manager must use to negotiate and execute the construction plan. Too many subcontractors assume that they have no leverage, no bargaining power, and no voice in the direction or execution of the project. This program provides hands on practice for the manager in using the contract as a management tool in order to enhance profitability, and to improve the odds in ongoing project negotiations.
7. **Project Building Blocks - The Estimate:** The estimate should be more than just a “get work” function. It should be the beginning of your plan to build the project profitably. The module focuses on preplanning the estimate so that when you are awarded a project you already have the outline of a successful plan in front of you. Themes include: estimating the project as you plan to build it so that the estimating output you get does not need to be reworked upon award; establishing a

labor tracking system with the estimate; and the production of a preliminary schedule as the natural outcome of every estimate.

8. **Managing Change on the Project:** Preplanning must always be the primary focus of every manager, yet almost immediately upon project initiation things begin to change rapidly. This module focuses on developing management techniques designed to limit change, anticipate change, and recover costs for change on projects. The emphasis of this module is NOT change orders, but instead, is how to effectively manage the process of change on projects in order to limit financial impacts to the firm.
9. **Work Smarter - (a.k.a. Using Technology to Gain Profit):** The computer belongs in the tool belt of every manager in construction. The focus of this module is to introduce participants to the ever-changing world of new computer technology applications in construction. No specific software packages or hardware are promoted, but instruction is provided using selected applications to illustrate how the use of technology is being used to enhance project communications, to increase real time reporting on job progress, to manage project documentation.
10. **Profitability through Planning & Scheduling:** Preplanning, as the key to project success and profitability is the emphasis here. Continuous planning and scheduling is taught as the principle tools in effective management of projects. The costs and benefits of plan are illustrated, and the participants practice specific planning & scheduling techniques.
11. **Do This Before Sending Any Labour to the Job (a.k.a. Does Everyone Have Their Script - Turnover):** Turning the project over from estimating to field and project management is the focus here. Too often the estimator estimates it as he sees it, while the foreman and project manager build it as they see it. The result often is less profit than originally planned. This module helps the participants to recognize the value of effective preconstruction project turnover, and the exercises result in the participant's development of a project turnover template to be used on their projects.
12. **Winning - Understand Your Role!:** As a subcontractor, you have the opportunity to “Lead from the middle of the pack.” While you don't have the power or authority of the general contractor, you can still effectively drive the project by employing strategic project management techniques. The participant develops a better understanding of his role on the construction project, and learns effective ways of managing from the middle.
13. **Winning - Your Vision!:** The participant is introduced to their role as team leader and project visionary. In order to be an effective team leader the manager must possess the skills necessary to “rally the troops and lead the charge.” That isn't possible unless they have a clear vision of what project success looks like, how to convey that vision to other participants of differing personality types and project priorities. This module is designed to provide them with those skills.
14. **Putting the Game Plan Together:** Once the project has been turned over from estimating to project management the optimum plan for the most profitable construction effort must be strategized, and then turned into effective tactics for victory. This module focuses on developing the winning game plan for the project. What are our strengths, weaknesses, and opportunities? How do we capitalize on our strengths, and minimize the risk that our weaknesses present. Participants will develop a project strategic planning template to use on their projects.
15. **Winning - Your Schedule:** The schedule is a graphical representation of your strategic project plan. Designing a schedule that optimizes the use of the company's limited resources (manpower,

tools, and cash) is the primary focus of this module. Participants are encouraged to proactively participate in the scheduling process in order to maximize profitability.

16. **Get Ahead & Stay Ahead - Frontloading:** The focus of this module is project cash flow. Projects are financed on the backs of subcontractors, and willingly for the first 30 days. Participants learn specific techniques for ensuring that they never finance any more of the project than they must as defined by the contract. Frontloading techniques are developed, and the means of effectively selling frontloaded billings are practiced.
17. **Managing Change - Your Schedule's a Bust!:** This module is designed to specifically master computerized scheduling techniques to manage change on the project. The focus of this module is to use the schedule as a meaningful management tool in identifying impacts to the firm, and to substantiate the effects of project change of firm profitability.
18. **Keeping Score - Costs & You:** The primary job of a manager in a subcontracting firm is to manage labour. Yet many project managers and their firms do little more than just look at cost reports once a month, and claim to be managing labor. The focus of this module is to develop a project early warning system designed to allow us to proactively manage labor in real time. The development of specific management techniques to accomplish this is covered, and each participant leaves with a tool that can be implemented immediately to effectively track labor and materials in real time.
19. **Winning the Change Order Game:** This module focuses on using all the weapons available (contract, schedule, correspondence, logs) to regain the profits lost in doing change order work. The negative affects of change orders on the base work are studied and quantified. Participants are provided with a myriad of tools, practice, and effective negotiation techniques designed to allow them to regain some of the ground that is lost during the change order process. Specific techniques are explored in capturing all your hidden costs, in improving your cash flow on changes, and in executing all the terms of your contract with skills designed to maximize your ROI.
20. **The River of Life - Cash Flow:** Project cash flow is discussed. Methods of measuring, monitoring, and maximizing cash flow are explored. The impact of cash flow on company operations is illustrated via participant exercises.
21. **Keeping Score - Tracking & Logging:** Good project records and sound record-keeping procedures are critical to effectively monitoring and managing a project. This module introduces and develops techniques for tracking and logging materials, purchase and change orders, tools, and manpower.
22. **Scheduling to Win:** This module presents the fundamentals of sound scheduling techniques for subcontractors. Participants learn scheduling logic, and then use case study projects to begin to develop their schedules.
23. **Mobilization & Site Planning:** Every subcontractor has suffered the financial consequences of poor site planning. This module illustrates the real costs to the firm of poor site management and materials handling techniques. The participant evaluates the true cost of poor site planning and control, and then gains expertise in the practice of good site planning and management through project simulations.
24. **Increasing Profit Through Standardization:** Far too much time and effort is spent in our firms replicating tasks (management & field) that could easily be standardized. The focus of this module

is to develop standard operating procedures in our company by capturing, recording and standardizing those procedures to improve the efficiency of our organizations. Participants will leave the program with practice and experience in capitalizing on the best practices in their company and their industry.

25. **Know Where To Find It! - Project Records:** This module is designed to provide an example of a standardized project filing system in order to provide a model for participants. Goals include illustrating the effectiveness of a standardized system within the firm, and demonstrating how management time may be recaptured via increasing the efficiency of our managers.
26. **Short Interval Scheduling:** Once the project schedule is complete we must take the strategy contained therein, and turn it into job tactics. The short interval schedule is introduced as a tool to use in breaking down the scheduled activities into manageable and measurable tasks. Participants gain practice in developing two and three week short interval schedules to use in executing the project plan.
27. **Contractors' Open Forum:** This module is used to facilitate the sharing of ideas, questions, and problems among program participants. The forum may be topical (prefab, labor control, planning & scheduling) or may be open and free flowing. Experience has shown us that these sessions (where non-competing peers can openly share ideas) are often most frequently cited as "Don't Miss!" sessions by participants.
28. **Pre-fab & Profitability:** The goal of this session is to introduce and explore a wealth of pre-fab opportunities in our industry. Many participants find that they have only scratched the surface of pre-fab possibilities. The effects of pre-fab on profitability, manpower leveling, productivity, and quality control are examined. Participants always leave with additional pre-fab ideas and methods that can be incorporated into the projects.
29. **Materials Management:** Materials flow on a project is critical to maximizing project profitability. Materials that arrive too late cause delays and lost productivity. Materials that arrive too early create storage problems, suffer from loss and theft, and cost the firm additional labor in the form of inefficient material handling. Participants learn what good materials management consists of, and practice their skills in classroom simulations.
30. **The Flight of the Buffalo - Personality & Management:** Leadership, management, and the personalities of both leaders and followers play a major role in determining project and firm success. This module is designed for the manager to gain an understanding of their personal management style, to recognize the styles of others, and become proficient at using that knowledge to be a more effective manager and leader. Role-playing and personality testing makes this session particularly effective.
31. **Getting Out of Dodge (With Your Shirt On!):** Project closeout is a notoriously risky time when profitability often "bleeds away." This session develops an aggressive approach to preserving profit and customer relationships, while simultaneously driving the project to a close. Participants are provided with a recipe for the successful exiting of projects. Specific techniques for resolving disputed change orders, collecting retention, and demobilizing are presented.

32. **Knowledge is Useless Unless It's Shared:** What lessons do we learn on our projects, and how might we better incorporate those lessons into our corporate memory? This module is designed to explore better ways to retain those lessons we learn in our corporate consciousness. Participants learn how to be the facilitators in their firms for capturing project knowledge, and then to get it disseminated and used by the estimating department, sales staff, and field personnel.
33. **Leapfrog to Success:** We don't just build construction projects, we build relationships with our customers. Our good work and good relationships should lead to negotiated and profitable work. This session is designed to provide participants with tools required to turn one successful project (or even less than successful!) into a service contract on the project, and then all the tenant improvements, and then the remodel/retrofit, and then on to the next project with the owner. Specific strategies are introduced designed to help your firm take this project, and turn it into many more.

Recommended PRE-REQUISITES to the Merit College of Construction Project Management Course:

Principles of Health & Safety Management

Will provide the fundamental knowledge required for the development and implementation of an effective health and safety program.

Leadership for Safety Excellence

Will provide supervisors to build health and safety in to their every-day planning, create and promote a safe work environment where people can work safely and help make a lasting contribution to the reduction of incidents in the industry.

**Project Management for Electrical/Mechanical, November 15 – 22/09
Banff, AB**

1. Testimonial from Mike Brunner, President, Allied Projects Ltd., Calgary, AB

“Kirk Alter is very impressive – unbelievable accomplishments! He is a very experienced instructor who had a long career in construction before obtaining his Doctorate in Education. Mr. Alter has worked as an apprentice, journeyman, foreman, project manager, branch manager and partner in Southland Industries (a 350 million dollar electrical, plumbing and sheet metal company). This background makes him very believable as he can relate true life experiences to the subjects he teaches.”

“...expecting a series of different lectures but instead was very participatory”.

“The material is clear and detailed and directly relates to what a project manager does on a daily basis”.

“Speaking as a subcontractor, I feel that this is an excellent course and would be of great benefit to Merit members”.

2. Banff Centre website...

www.banffcentre.ca click “facilities” in the orange bar, click “accommodation”, see Professional Development Centre and click on “more information” to view accommodations. Each participant will have their own room.

Maps and other good information is on the website as well.

All meals will be served in the VISTA'S dining room.

Class will be held in the Donald Cameron Hall Room 17

- 3. More information:** Check in time at the Banff Centre is between 4:00pm and 5:00pm on Sunday November 15, and the session will wrap-up at noon on November 22. Once we receive registration, a detailed schedule, along with other information will be sent to the participant.