



# Engineering and Technology Management

## COURSE SYLLABUS

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**Course Number:** E M 534

**Course Name:** Contemporary Topics in Constraints Management

**Instructor:** Dr. Russ Johnson

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**Semester Credits:** 3

**Prerequisites:** E M 526 and E M 530

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### Course Description and Objectives:

This course is an upgrade in the Theory of Constraints content from EM 526 and EM 530 as well as a look at where the most current applications of TOC are happening. TOC continues to grow and mature in theory and applications. There are tens of new books, hundreds of new articles, many conferences and presentations showing refined, improved, and polished TOC applications. The course will involve a number of guest presenters, many sharing what they presented at the most recent TOCICO conference, who are recognized as leaders in the application of TOC concepts in a wide variety of environments. Example guest topics include: Production (make to availability); Project management; Government (Utah State Government); Education; Health Care; Sales and Marketing (Mafia Offers); Integrated TOC, Lean and Six Sigma; Simplified Thinking Process (Change Matrix Cloud); Building your own Strategy and Tactics Tree, and others. Students will write a 1 page executive summary report of the guest presentations. Students are expected to expand their understanding of the traditional Thought Process tools by utilizing the Change Matrix Analysis process and Harmony software to complete a full Thinking Process analysis based upon their local environment (well within their sphere of responsibility). This is an opportunity to improve their ability using the thinking processes and the Categories of Legitimate reservation. From this Thinking Process analysis, students will later create a Strategy and Tactics Tree for their environment and present this S&T to the class. A review of Drum-Buffer-Rope, Critical Chain, Replenishment/ Supply Chain and Throughput Accounting will be capped with a mini certification type exam. The emphasis is on the newest methods and techniques. These topics broaden and strengthen understanding of systems.

This course is excellent preparation for several TOCICO certification areas.

### Course Topics:

- TOC Thinking Process (Simplified TP)
- Day-to Day use of the Thinking Process tools
- Presenting and getting Buy-in to your Ideas
- Overview and update on TOC Applications for Production (DBR and S-DBR), Project Management (Critical Chain), replenishment/supply chain and Finances (Throughput Accounting) and Measures (IDD and TDD)
- Creating and implementing Strategy and Tactics Trees
- Using TOC to provide focus and integration for Lean, Six-Sigma and other improvement efforts

### Grading:

Thinking Process: 30%, Personal Strategy & Tactics Tree 20%, Presentation 10%, TOC Type Exam 20%, Guest Speaker Executive Summaries: 20%