

# MICRO-CREDENTIAL IN SYSTEMS OPTIMIZATION

*Transform Complex Decisions into Optimal Solutions*

Professor Asad Ata

Videos are available beginning  
March 28, 2027.

Course Credits:  
1.5 Credits

Live sessions are on:

- April 11, 2027
- April 17, 2027
- April 18, 2027
- April 25, 2027



[asb.edu.my/ace](https://asb.edu.my/ace)



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## Course Overview

This course is designed for business professionals, entrepreneurs, and startups seeking to sharpen their analytical and decision-making skills to navigate everyday challenges and develop strategic opportunities. You will explore logical and creative ways to make smarter decisions analytically. Whether you are planning schedules, allocating resources, tackling complex business decisions, or making personal choices, the techniques and insights from this course will help you build the confidence and intuition to approach these problems holistically and choose the solution that delivers the best results.

This course empowers you to sharpen your natural problem-solving skills and learn practical techniques for making optimal decisions. By blending theoretical concepts with the “science of better,” a.k.a. Operations Research, and hands-on exercises on modeling real-world problems, you will gain the competencies needed to make transformative decisions that drive results – whether addressing small challenges or large-scale problems. You will also learn to break down complex issues quickly, using rapid back-of-the-envelope calculations, and visualize the solutions clearly.

In a world full of options, Systems Optimization fosters critical thinking and adaptability in uncertain environments by integrating theory, strategy, and mathematical concepts with real-world scenarios. With hands-on exercises and tools like Excel Solver to understand sensitivity analysis, you will develop systemic approaches to challenges that managers face, such as scheduling operations, resource allocation, and process optimization. By the end of the course, you will perfect the art of identifying, modeling, and solving problems, empowering you to make smarter, data-driven decisions in every aspect of life.



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## Course Outline

Through a combination of lectures, exercises and hands-on engagement, you will explore extreme solutions to help identify the best options in a given situation. You will learn:

**1. Modeling Techniques:**

Learn how to model real-world situations as problems that can be solved analytically.

**2. Visualizing the Possibilities:**

Learn to visualize problems as graphical models to show the range of feasible solutions.

**3. Mathematical Programming:**

Represent possibilities as inequalities and solve them using linear programming.

**4. Sensitivity Analysis:**

Learn to negotiate better by understanding what to bargain for and how hard, identifying which variables and constraints matter, and recognizing where the slack lies.

**5. Designing Real World Problems as Network Flow Models:**

Learn how to convert real-life problems into effective network flow models to help you make the most of your time, money, and resources.

**6. Case Study:**

Apply your knowledge through a detailed network flow case study.

**7. MYOP (Model Your Own Problem):**

Put your skills into practice by designing a model for a problem of your choice.



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## **Outcomes that Drive Business Growth**

This course will enable you to:



### **Evaluate business problems using management science techniques**

Use simple math and Excel to model real-world business challenges and find practical solutions.



### **Synthesize technical outcomes to enhance managerial decisions-making**

Understand how reliable and applicable the solutions are in real-world scenarios.

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## Assessment

Learners are required to attain minimum stipulated grades in each of the categories below in order to achieve the Micro-Credential in Systems Optimization

|                            |     |
|----------------------------|-----|
| Practice Quizzes .....     | 20% |
| Homework Assignments.....  | 50% |
| Final Course Project ..... | 30% |

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## Who Should Take This Course

### Business and Operations Managers

Learn optimization techniques to make smarter strategic decisions on resource allocation, inventory, scheduling, and network design.

### Analysts and Consultants

Enhance your ability to optimize processes and solve complex operational and strategic challenges for clients.

### Entrepreneurs and Startups

Discover effective strategies to maximize limited resources for production, distribution, and service delivery.

### Technology and Software Developers

Gain practical skills to integrate optimization techniques into software for logistics, operations, and decision support.

## Academic Requirements

A basic understanding of high school algebra and calculus will be helpful. Participants should be comfortable using spreadsheets. Experience with Excel Solver is a plus but not required.

Reviewing optimization concepts from Khan Academy can provide a good head start.

Derivative applications | Khan Academy.  
(<https://www.khanacademy.org/math/calculus-all-old/derivative-applications-calc#optimization-calc>)

## Course Format & Duration

RM8,500\* | 1.5 credits | 4-week duration

- Video lectures and assignments available from **March 28, 2027**.
- Hybrid live sessions with lecture reviews and case discussions.

| Live-session        | Date and Time                                       |
|---------------------|-----------------------------------------------------|
| First Live Session  | Sunday, April 11, 2027<br>10:00 AM – 2:00 PM (MYT)  |
| Second Live Session | Saturday, April 17, 2027<br>9:00 AM – 1:00 PM (MYT) |
| Third Live Session  | Sunday, April 18, 2027<br>10:00 AM – 2:00 PM (MYT)  |
| Fourth Live Session | Sunday, April 25, 2027<br>10:00 AM – 2:00 PM (MYT)  |



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## Faculty

**Asad Ata** is an Associate Professor II of Operations and Supply Chain Management at the Asia School of Business. His research focuses on sustainable sourcing and supply chain management. With over 12 years of industry experience, he has worked on diverse supply chain projects in IT, telecommunications, and e-commerce. He has also collaborated extensively with multinational corporations, NGOs, and government agencies, including the United States Agency for International Development (USAID) and SWIFT, particularly in food and agricultural supply chains.

Ata teaches graduate courses in logistics, supply chain management, and sustainability. His expertise spans operations and supply chain analytics, software systems, optimization, and data modeling. Since 2011, he has been a Research Affiliate with MIT, contributing to the MIT Global Supply Chain and Logistics Excellence (SCALE) Network, and playing a key role in designing MIT's first X-Series MOOC on Supply Chain Management.

He holds a PhD in Operations Research from Southern Methodist University, a Master's degree from Arizona State University, and an undergraduate degree from the Indian Institute of Technology, Kharagpur.

**RM8,500 or approx USD 1,848\***

\*The Royal Malaysian Customs Department has expanded the scope of the Sales and Service Tax (SST) framework to include education services. Under this regulation, a 6% Service Tax applies to education services provided to self-funded non-Malaysian individuals. Education fees that are fully sponsored by an organization are exempt from Service Tax

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**The ACE courses are:**

- Stackable to degrees. They can be combined to gain eligibility to apply for comprehensive qualifications, culminating in the ASB Master of Business Administration (full-time 12 months) or Executive Master of Business Administration degrees (part-time 16 months).
- HRD Corp and STF claimable by eligible Malaysian employers, terms and conditions apply.



**Register now for this course:**

Asia School of Business, ASB Academic, 11  
Jalan Dato' Onn, 50480 Kuala Lumpur  
Ministry of Higher Education Malaysia  
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