ACE&ASB
AGILE CONTINUOUS EDUCATION

MICRO-CREDENTIAL IN SYSTEMS OPTIMIZATION

TRANSFORM COMPLEX DECISIONS INTO OPTIMAL SOLUTIONS

(HRDCorp Course Series No: 10001536122)

Faculty Professor Asad Ata

Videos are available beginning March 31, 2025

After watching the required videos, live sessions are on:

- April 13, 2025
- April 20, 20255
- April 27, 2025
- May 4, 2025

Course Credits:
1.5 Credits

HRD CORP CLAIMABLE

asb.edu.my/ace

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 and learn logical and creative ways of making smarter decisions, analytically. Whether you are planning schedules, allocating resources, tackling complex business decisions, or addressing personal choices, the techniques and insights from this course will help you build the confidence and intuition to approach these problems wholistically and make informed choices by selecting the solution that brings 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 be able to 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.

Join us and discover the crucial role optimization plays in our everyday decision-making, and learn to drive the dynamic blend of science and art that enhances outcomes.

Your optimal future starts here!

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:

a. **Modeling Techniques**
    Learn how to model real world situations as problems that can be solved analytically.

b. **Visualizing the Possibilities**
    Learn to visualize problems as graphical models to show the range of feasible solutions.

c. **Mathematical Programming**
    Represent possibilities as inequalities and solve using Linear Programming.

d. **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.

e. **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.

f. **Case Study**
    Apply your knowledge through a detailed network flow case study.

g. **MYOP (Model Your Own Problem)**
    Put your skills into practice by designing a model for a problem of your choice.

Course Learning Outcomes

At the end of the course,
you will be able 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.

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:

1. Practice Quizzes ······························ 20%

2. Homework Assignments ··················· 50%

3. Final Course Project ························ 30%

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/Prerequisites
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/old-differential-calculus/derivative-applications-dc/optimization-dc)

Duration
Total 6 weeks (this includes time for students to view videos before the first live session).

Course Credits
1.5 credit course

Fees
RM8,500

Course Commencement Date
March 31, 2025

Live-session dates in table below:

Live-session	Date and Time
First Live-session	Sunday, April 13, 2025 10:00 a.m. – 1:15 p.m. (Malaysian Time)
Second Live-session	Sunday, April 20, 2025 10:00 a.m. – 1:15 p.m. (Malaysian Time)
Third Live-session	Sunday, April 27, 2025 10:00 a.m. – 1:15 p.m. (Malaysian Time)
Fourth Live-session	Sunday, May 4, 2025 10:00 a.m. – 1:15 p.m. (Malaysian Time)

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. Additionally, he has 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*

*This ACE course, which is part of ASB's accredited degree program,
is exempted from Malaysian SST.

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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).

Register now for this course:

Asia School of Business, ASB Academic,
11 Jalan Dato' Onn, 50480 Kuala Lumpur

Ministry of Higher Education Malaysia
Registration No: DU046(W)

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