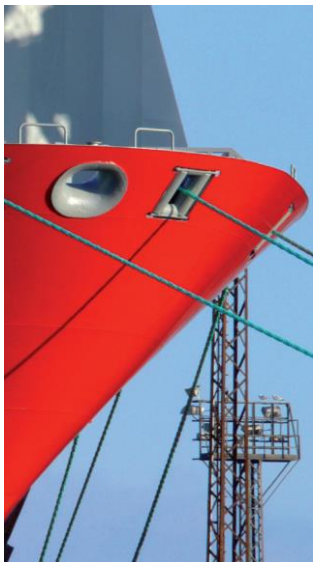
LogDynamics
International Graduate School

Supply Chain Network Design using Mixed Integer Linear Programing

Lecture by
Prof. Dr. Mujtaba Hassan Agha

Supply Chains have to address an inherent trade-off between costs and customer service. The course will make use of Mixed Integer Linear Programing to solve and understand topics related to Network Design. The course will start with simple formulations (transportation and transshipment models) and subsequently more complex Network Design Problems (such as robust optimization, multi-commodity flows and multiple time period models) will be discussed. All models will be implemented by the students in hands-on computer exercises.

Target group of the lecture are Master students and doctoral candidates in Engineering and Management with an interest in Supply Chain Modeling and Optimization. The course if offered in cooperation with Prof. Dr. T. Becker of the *Production Systems and Logistic Systems* work group



Organiser

International Graduate School
for Dynamics in Logistics (IGS)
at the University of Bremen

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Contact

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Agenda July 2016

12th July, 09:00-16:30: *Value of Network Design*

13th July, 09:00-16:30: *Using MS Excel to solve Network Design*

14th July, 09:00-16:30: *Facility Location Problem*

18th July, 09:00-16:30: *Advanced Network Design Problem*

19th July, 09:00-16:30: *Advanced Network Design Problem*

21st July, 09:00-16:30: *Presentation/Examination*

See the course website at http://www.psls.uni-bremen.de/education.html for details.

Organisational Hints

The course is open for all students of University of Bremen. Please, register for the course via Stud.IP or by sending an email to courses@IGS.LogDynamics.de

Depending on your study program, 3 CP may be offered for participation in the course including an examination. The course is also open for IGS and Erasmus Mundus fellows as well as for any doctoral candidate of Log*Dynamics*.

Ongoing Courses of the IGS:

'Academic Writing', course with classes once or twice a month. Training in small groups tailored to the individual needs of the participants.

'Voice Development', course with monthly training in very small groups on improving the pronunciation in English.

Prof. Dr. Mujtaba Hassan Agha is is an Associate Professor at Mohammad Capital University of Science and Technology, Pakistan. He has more than eleven years of industrial and teaching experience. His teaching and research areas of interest are Production Engineering, Supply Chain Management, Quality Improvement and Energy Management. He received his PhD in Industrial Systems Engineering from ENSIACET - Institut National Polytechnique Toulouse, France. He is also a Certified Supply Chain Professional (CSCP) and a member of American Productivity and Inventory Control Society (APICS).

The **International Graduate School for Dynamics in Logistics (IGS)** at the University of Bremen offers the opportunity to complete an efficient, structured doctoral training programme. The IGS pursues an interdisciplinary and cross-cultural approach to higher education.

The IGS is part of Log*Dynamics* which builds a cooperating network of research groups originated from four faculties of the University of Bremen: Production Engineering, Business Studies/ Economics, Mathematics/Computer Science, Physics/Electrical engineering.

Founded on specifications by supervisors or requirements by doctoral candidates, innovative complementary qualification measures have been developed, tested, evaluated and optimized. These explicitly include internationality, interdisciplinarity and the demands of the research area logistics.

The IGS offers different individual, interdisciplinary courses. Every course has one of two formats: either an *ongoing course* where a course *unit* takes place once every two weeks in an *organizational period* of approximately six months, or a *workshop* running from half a day up to two days.

A course is structured into *classes* of typically five students (ongoing course) or twelve students (workshop).

Key qualifications can only be trained by repeated practical experience; thus the IGS ensures continuity of several of these measures to improve transferable skills.

Terms and Conditions of IGS' courses

Any registration for a course offered by the IGS is binding after you receive a confirmation for your application. You are expected to attend class without exception. If you cannot attend a specific class, please inform your group, the lecturer and the organiser in time, i.e. at least two days before the appointed date. If the participants do not observe this rule and the lecturer does not have any participants for a class, the group has to pay for the wasted time and money.

If you generally cannot attend class any more or if you want to entirely cancel your participation in a course, please inform the organiser in time. The IGS will offer your place to someone else.

After any course, we will ask you for an evaluation. Please, fill in the evaluation sheet in time and return it to our main communication channel courses@IGS.LogDynamics.de.

Comments from previous participants

"The mix out of a workshop and seminar. I guess for this topic it was really helpful to also get some input. However, the main focus was still on the workshop character, which was adequate. To work with our own abstract or exposé helped. The coach did an excellent job. The workshop was really well structured. Her competence in this field as well as in other fields, her tips and insights were really valuable."