Basic Course in Quality

**Code:** TUTA1060  
**Credits:** 5 ECTS  
**Prerequisites:**  
**Learning Outcomes:** student will gain an understanding on the basics of Quality Management, the role of Quality and Quality Management Systems, Processes and Scorecards in various Businesses and various possibilities for the Development of Quality Procedures within a company on a Yearly Cycle  
**Generic Skills:** Lifelong learning, critical and analytical thinking, problem-solving and decision-making skills.  
**Content:** History of Quality Management, Quality Management Systems, Processes, Balanced Scorecards, Continuous Improvement, Self-Assessment, Audits and Reviews, Quality Standards, Quality Problem Solving Techniques and Tools, Quality Award Frameworks  
**Study Materials:**  
2. Other course material provided by the lecturer  
**Teaching Methods:** 30 h lectures, independent work 105 h  
**Modes of Study:** written exam and participation in possible visitor lectures  
**Languages:** English  
**Grading:** Scale 1-5 or fail  
**Responsible Person:** Katariina Pukkila-Palmunen  
**Teacher(s):** Katariina Pukkila-Palmunen  
**Responsible Unit:** Department of Production  
**Additional information:** available only to students of the B.Sc programme in Computer Sciences and Industrial Management, B.Sc. students in Industrial Systems Analytics, and to students who have been granted right to minor in Industrial Management

Global Sourcing and Procurement

**Code:** TUTA2140  
**Credits:** 5 ECTS  
**Prerequisites:**  
**Learning Outcomes:** student will gain an understanding on the Strategic Roles of Sourcing, Procurement and Suppliers in Global Value Chain and Business Environment, understand various Sourcing Strategies, Processes, Organisation Models and Scorecards, able to perform Supply Research and Supplier Evaluations, setting up Supplier related Scorecards and understand the strategic difference between Outsourcing, Onshoring and Offshoring  
**Generic Skills:** Oral, written and interpersonal skills (Group Work, english), critical and analytical thinking, problem-solving and decision-making skills, organisational operation.  
**Content:** Role of Purchasing in the Value Chain, Purchasing Strategy and Management Process, Category Management, Supply Research, Performance Measurement, SCM, Outsourcing  
**Study Materials:**  
3. Other course material provided by the lecturer  
**Teaching Methods:** lectures 30 h, independent work 105 h  
**Modes of Study:** written exam, written group work and participation in possible visitor lectures  
**Languages:** language(s) of instruction: English -; completion language(s) English  
**Grading:** Scale 1–5 or fail, 65% written exam and 35% group work  
**Responsible Person:** Katariina Pukkila-Palmunen
Basic Course in Logistics

**Code:** TUTA2160  
**Credits:** 5 ECTS  
**Prerequisites:** TUTA2170 Introduction to Production Management and TUTA1090 The Real Processes of a Company -courses

**Learning Outcomes:** student will gain an understanding on the Basics and Challenges of International Logistics, Activities, Processes, Scorecards and Systems, as well as the Counterparts in Logistics.  
**Generic Skills:** Problem-solving and decision-making skills, critical and analytical thinking, Lifelong learning.

**Content:** Strategic and Financial Logistics, Logistics and Information Technology, SCM, Order, Inventory, Warehousing and Transportation Management, International Logistics

**Study Materials:**
2. other course material provided by the lecturer

**Teaching Methods:** 30 h lectures, independent work 105 h

**Modes of Study:** written exam and participation in possible visitor lectures

**Languages:** English

**Grading:** Scale 1–5 or fail

**Responsible Person:** Daniel Sahebi

Innovative Product Development and Product Lifecycle Management

**Code:** TUTA2230  
**Credits:** 5 ECTS  
**Prerequisites:** basic studies in Industrial Management and Project Management

**Learning Outcomes:** student will gain an understanding on the Innovation Process and various Innovations Methods and Tools and their usage in Manufacturing Business, Open Innovations Networks and their Value, Product Development Process, Concept Design, Basic Principles and Role of PLM in a Company, Challenges of creating a Product Structure and Strategy within a Company regarding of the Industry in case and understanding the preconditions of PLM in e-Commerce  
**Generic skills:** Oral, written and interpersonal skills (Group Work, english), critical and analytical thinking, problem-solving and decision-making skills, product development and marketing, organisational operation.

**Content:** Basics of Innovations Process, Methods, Tools and Networks, Product Development and Piloting in Production, Concept Design, PLM and PLM Systems integration with other Business Applications, Product Structures and Strategies, Benefits and Challenges of a PLM System in various Industries, e-Business and PLM

**Study Materials:**
5. Other course material provided by the lecturer

Teaching Methods: lectures and exercises 30h, independent work 105 h
Modes of Study: Written exam, written group work and participation in possible visitor lectures
Languages: English
Grading: Scale 1–5 or failed, 65% written exam and 35% group work

Responsible Person / Teacher: Katariina Pukkila-Palmunen
Responsible unit: Department of Production

Additional Information: available only to students majoring in Industrial Management, M.Sc. and B. Sc. students in Industrial Systems Analytics, and to students who have been granted the right to minor in Industrial management

Please note that this course will replace courses TUTA2210 Product Lifecycle Management and TUTA2220 Tuotekehitys ja innovaatioprosessit. If you have taken one of these courses, you cannot take this new course!

Operations Strategy

Code: TUTA3080
Credits: 5 ECTS
Prerequisites: -

Learning Outcomes: after completing this course the student will be able to list major forces that drive corporate competition and name proven strategic management models, during the course student assess various types of industries and determine the position of a company within its business area, customized data collection methods are utilized with the help of the virtual learning environment (Moodle), working in groups, students apply strategy evaluation tools and build hierarchical model for multi criteria decision making, they put into practice in a real case study analytical evaluation tools to classify major business factors, categorize company strategic goals and prepare tailored plan how to reach aspired strategic type. Generic skills: Oral, written and interpersonal skills (group work and seminar in English), critical and analytical thinking, problem-solving and decision-making skills, organisational operation, IT-skills (especially Excel and AHP application).

Content: introduction, basic theories of strategy, lean strategies, technology management, research methods, e.g. analytical hierarchy process AHP and strategic networking strategic corporate planning as a scientific problem

Study Materials:
3. Cantwell, John, (Editor) 2004, Globalization and the Location of Firms, Edward Elgar Publishing Limited UK

Teaching Methods: lectures and tutoring 15 hours and seminars 20 hours, independent work 100h. Seminars will be prepared during the course on the basis of real industrial cases and research within the area

Modes of Study: according to RBL-process, student have to participate at least in presenting the literature reference at the beginning and the final case study report, course is based on the lectures, seminars, literature references and written assignments, no examination

Languages: language(s) of instruction: teaching and seminars in English; completion language(s):
New Knowledge Creation and Organizational Learning in Product Development

Code: TUTA3210
Credits: 5 ECTS
Prerequisites: -
Learning Outcomes: students will understand theories of organizational learning and knowledge creation in product and service development context, and know how to apply different methods to support new knowledge creation and organizational learning in the context of product and service development in organizations
Content: individual learning at work, competence, motivation, learning organization and organizational learning, knowledge creation theories, responsive environment, systems thinking - putting pieces together for new product and service development / innovation. Generic skills: Organisational operation, Problem-solving and decision-making skills
Study Materials:
1. lecture material
3. books and book chapters
4. online tools and web resources
5. scientific articles supplied by the teacher
6. material provided by the case organization/company
Teaching Methods: lectures 14 h, workshop 14 h, case organization/company visits, independent work 107 h
Modes of Study: lectures, workshops and student assignments in teams
Languages: English
Grading: scale 1-5 or fail, exam (30%), course assignments (70%), activity (+), 75 % attendance required for pass
Responsible Person: Jussi Kantola
Teacher(s): Jussi Kantola
Responsible Unit: Department of Production
Additional Information: -

Technology Management

Code: TUTA3030
Credits: 5 ECTS
Prerequisites: Innovative Product Development and Product Lifecycle Management TUTA2230, Introduction to Production Management TUTA2170
Learning Outcomes: to apply modern theories of strategy for industrial enterprises, especially in small businesses utilizing strategic networking, the sub strategy starts from the business strategy of the enterprise by utilizing technology and knowledge transfer mechanisms (benchmarking) to be implemented in the core business processes
Content: technology driven strategies technology and operations management, strategic networking and modern dynamic (qualitative) decision making processes all from the application point of view
Study Materials:
Teaching Methods: 30 hours combining theory and seminars
Modes of Study: according to RBL-process
Languages: English
Grading: scale 1-5 or fail
Responsible Person: Josu Takala
Teacher(s): Rayko Toshev
Responsible Unit: Department of Production
Additional Information:

Product and Service Design in Practice

Code: TUTA3230
Credits: 5 ECTS
Prerequisites: TUTA2230 Innovative Product Development and Product Lifecycle Management
Learning Outcomes: students will learn axiomatic design theory, and to do design work in teams in real customer setting
Content: product and service development contexts, product and service design theory, methods and tools, Generic skills: Product development and marketing, Critical and analytical thinking, Interpersonal skills
Study Materials:
2. lecture material
3. online tools and web resources
4. scientific articles provided by the teacher
Teaching Methods: lectures 14 h, workshops 14 h, presentations 8 h, independent work 99 h
Modes of Study: lectures, workshops, design project in teams, customer visits
Languages: English
Grading: scale 1-5 / fail, 2 quiz 20 % (10 % each), design project 80%, activity (+)
Responsible Person: Jussi Kantola
Teacher(s): Jussi Kantola
Responsible Unit: Department of Production
Additional Information: -

Contemporary Topics in Industrial Management

Code: TUTA3060
Credits: 2-5 ECTS
Prerequisites: -
Learning Outcomes: Students gain deeper understanding regarding some contemporary topics in Industrial Management. The topics may be chosen by the students. Generic Skills: written skills (English)
Content: Depends on the choise of the student, please see the list below.
Study Materials:
8) Oshri Ilan (2011) Offshoring Strategies: Evolving Captive Center Models, the MIT Press

**Teaching Methods:** self-study 54-135 h

**Modes of Study:** written summary from one book (=2,5 ETCS) or two books (=5 ECTS) (20 pages/book), pass/fail

**Languages:** English

**Grading:** pass / fail

**Responsible Person:** Päivi Haapalainen

**Teacher(s):** Petri Helo, Päivi Haapalainen

**Responsible Unit:** Department of Production

**Additional Information:** -

**Project Work in Industrial Management**

**Code:** TUTA3070
TUTA3071 Quality
TUTA3072 Times
TUTA3073 Production Management
TUTA3074 Logistics
TUTA3075 agreed separately

**Credits:** 2-5 ECTS for the course, 2-3 ECTS per part

**Prerequisites:** bachelor level studies in department of production

**Learning Outcomes:** the student can solve practical problems by the application of relevant theory and report the results according to the standards of the department of production. Generic Skills: Problem solving, critical and analytical thinking, written skills (English)

**Content:** the course can be compiled from a number of elements 1) The Project Work course can be completed by carrying out project based development work in companies and other organizations, the amount of credits granted for each project varies with the difficulty of the task, the content of each project is to be agreed upon with the relevant teacher. It may be possible to carry out project work as a part of ongoing, wider research project of the department of production 2) a second option is to take part in the TIMES consulting competition (Tournament in Management and Engineering Skills) jointly arranged together with the TUTTI Student Society.-The winning team of the local elimination rounds will be able to participate in the international ESTIEM semifinals. Participating in a business game will give a maximum of 3 ECTS. We recommend that the course is completed by participation in several different events and projects, combining the different options available to the student

**Study Materials:** depend on the topic

**Teaching Methods:** self-study 54 - 135 h

**Modes of Study:** self-study (projects) or participating in TIMES

**Languages:** English

**Grading:** pass or fail

**Responsible Person:** Päivi Haapalainen

**Teacher(s):** Päivi Haapalainen

**Responsible Unit:** Department of Production

**Additional Information:** the industrial management project work course can be completed around the year, and is not tied a specific course schedule (except the TIMES), the course should consist of at least two different part performances, the part performances are added to the student’s credit registry upon completion