<table>
<thead>
<tr>
<th><strong>Modulbezeichnung:</strong></th>
<th>Basics of International Logistics and Supply Chain Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modulbezeichnung (engl.):</strong></td>
<td>Basics of International Logistics and Supply Chain Management</td>
</tr>
<tr>
<td><strong>Studiengang:</strong></td>
<td>Module Certificate &quot;International Logistics and Supply Chain Management&quot;</td>
</tr>
<tr>
<td><strong>Code:</strong></td>
<td>ILSCM-01</td>
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<tr>
<td><strong>SWS/Lehrform:</strong></td>
<td>80hrs total contact time, 5 units with 2 days (16 hrs) reading per course unit</td>
</tr>
<tr>
<td><strong>ECTS-Punkte:</strong></td>
<td>5</td>
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<tr>
<td><strong>Studiensemester:</strong></td>
<td>2</td>
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<tr>
<td><strong>Pflichtfach:</strong></td>
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</tr>
<tr>
<td><strong>Arbeitssprache:</strong></td>
<td>English</td>
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<tr>
<td><strong>Prüfungsart:</strong></td>
<td>Examination (120 Minutes, no repetition, with rating)</td>
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<td><strong>Zuordnung zum Curriculum:</strong></td>
<td>ILSCM-01 Basics of International Logistics and Supply Chain Management (part of Module Certificate, 2 semesters), 1st semester, compulsory course</td>
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<td><strong>Arbeitsaufwand:</strong></td>
<td>Compulsory course attendance includes 80 hours / 10 days incl. supervised self-learning. Total time for this module is 150 hours with 5 ECTS points. Therefore, 70 hours are available for preparation and follow-up of the course units.</td>
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<tr>
<td><strong>Empfohlene Voraussetzungen (Module):</strong></td>
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<tr>
<td><strong>Als Vorkenntnis empfohlene Module:</strong></td>
<td>none</td>
</tr>
<tr>
<td><strong>Modulverantwortung:</strong></td>
<td>Prof. Dr. Thomas Korne</td>
</tr>
<tr>
<td><strong>Dozent:</strong></td>
<td>Prof. Dr. Thomas Korne, others with logistical background</td>
</tr>
</tbody>
</table>

**Lernziele/Kompetenzen:**

**Course unit International Transportation:**
At the end of the course, the students will be able to
- appropriately use terminology of international transportation,
- explain the structure of the European Logistics market and the role of the main operators,
- describe transportation principles and modes of international logistics as well as their benefits and disadvantages,
- know the offers of KEP- and third party logistics providers,
- to calculate freight costs based on a land transportation example.

**Course unit Fundamentals of Logistics and Supply Chain Management:**
At the end of the course, the students will be able to
- appropriately use terminology of international logistics,
- explain and understand the drivers and enablers of Supply Chain Management,
- to illustrate the benefits of cooperation beyond corporate boundaries,
- to explain the role of logistics in our economy and the organizational set-up of logistics in and between companies,
- understand the need of standardized processes between supply chain partners for efficient cooperation,
- explain the basic instruments of supply chain management.

**Course unit Warehousing and Inventory Management:**
At the end of the course, the students will be able to
- appropriately use terminology of material and inventory logistics,
- describe the organization and processes of material replenishment as well as functions and types of warehouses,
- understand the meaning and objectives of inventory management and the basic instruments to analyze and optimize material storage,
- explain the different types of inventory policies.

Course unit Network Planning and Distribution:
At the end of the course, the students will be able to
- appropriately use terminology of network planning and distribution,
- use basic applications of "Operations Research" for decision support to optimize transportation and distribution logistics
- to understand heuristically or exact mathematical models for simple transport and tour problems,
- to interpret the outcomes of the models under economic considerations based on a case study

Course unit Project Management and Performance Management in Logistics:
At the end of the course, the students will be able to
- appropriately use terminology of project and logistics performance management,
- apply and analyse logistics key performance indicators for logistics service providers,
- understand generic problem solving techniques and methods of project management,
- describe the set-up of a logistics controlling system and to understand the importance of robust management processes,
- apply basic risk management strategies for supply chain management and to know about the role of trust.

Inhalt:

Course unit International Transportation:
- English terminology of transportation modes
- European freight corridors and gateways
- International land (motor carrier) and intermodal/multimodal transportation
- Carrier development, challenges and opportunities
- Railway transportation and hinterland
- Air transportation
- Pipelines
- Ocean and inland waterway transportation
- Specialized carriers (incl. KEP, 3rd party logistics)
- Packaging and containerization
- Transportation regulation and public policy
- Costing and pricing in transportation based on land transportation example
- Carrier and shipper strategies
- On-site visits in the Greater Region

Course unit Fundamentals of Logistics and Supply Chain Management:
- English Terminology of international logistics and supply chain management
- Evolution of logistics and supply chain management
- Logistics in the organization with role/functions
- Economic value of logistics
- Challenges of international logistics
- The Bullwhip effect (4h beer game simulation)
- Drivers and enablers of supply chain management
- Information management and technology
- Instruments of supply chain management (VMI, postponement, etc.)
- The SCORE model as a means of SCM standardization
- Supply chain financials, controlling & risk management
- Trust/Win partnerships
Case study

Course unit Warehousing and Inventory Management:
- English terminology of warehousing and inventory
- Functions and types of warehouses
- Commissioning
- Warehouse processes
- Assignment of storage space
- Warehouse transportation
- Inventory cost and service level
- Economic order quantity/lot size model
- Safety stock calculation to achieve service levels
- Types of inventory policy
- Exercises
- On-site visits in the Greater Region

Course unit Network Planning and Distribution:
- English terminology of network planning and distribution
- Network design
- Single- and multiple level transportation design
- Warehouse location problem
- Roundtrip and transportation planning problem
- Basic models of operation research, e.g. savings-method
- Examples of optimization software solutions
- Qualitative method for location planning
- Case study and exercises

Course unit Project Management and Performance Management in Logistics:
- English terminology of project and performance management
- Problem solving methodology
- Structured working for successful logistic project
- Uncertainty (risk) management
- Pipelining
- Buffer management
- Priority management
- Key Performance Measurements
- Trust & Objectiveness
- Execution and Task Management
- Portfolio Decision Management
- Logistics controlling
- Case study or exercises

Literatur:
### Modul: Advanced Logistics

<table>
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<tr>
<th><strong>Modulbezeichnung:</strong></th>
<th>Advanced Logistics</th>
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<td><strong>Modulbezeichnung (engl.):</strong></td>
<td>Advanced Logistics</td>
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<td><strong>Studiengang:</strong></td>
<td>Module Certificate “International Logistics and Supply Chain Management”</td>
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<tr>
<td><strong>SWS/Lehrform:</strong></td>
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<td><strong>Pflichtfach:</strong></td>
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<td><strong>Arbeitssprache:</strong></td>
<td>English</td>
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<td><strong>Prüfungsart:</strong></td>
<td>Examination (120 Minutes, no repetition, with rating)</td>
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<td><strong>Zuordnung zum Curriculum:</strong></td>
<td>ILSCM-02 Advanced Logistics (part of Module Certificate, 2 semesters), 2nd semester, compulsory course</td>
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<td><strong>Arbeitsaufwand:</strong></td>
<td>Compulsory course attendance includes 80 hours / 10 days incl. supervised self-learning. Total time for this module is 150 hours with 5 ECTS points. Therefore, 70 hours are available for preparation and follow-up of the course units.</td>
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#### Empfohlene Voraussetzungen (Module):
- ILSCM-01

#### Als Vorkenntnis empfohlene Module:
- none

#### Modulverantwortung:
- Prof. Dr. Thomas Korne

#### Dozent:
- Prof. Dr. Thomas Korne, others with logistical background

#### Lernziele/Kompetenzen:

**Course unit Logistics and Law:**
At the end of the course, the students will be able to
- appropriately use logistics terminology relevant for law,
- explain the role and impact of government on the global transportation system,
- describe the legal environment of logistical activities incl. transport documents, contracts, liabilities, dangerous goods, counterfeiting, custom & tariffs,
- describe current policies, problems and issues of international logistics,
- recognize basic aspects of contracting with logistics service providers.

**Course unit Industrial Logistics using the Example of the Automobile Industry:**
At the end of the course, the students will be able to
- appropriately use terminology of industrial logistics,
- describe the functions of international procurement, return logistics, production planning and scheduling,
- explain the basic production planning and scheduling process with sales and operation plan, master production schedule and material requirement planning,
- describe tasks of purchasing department and system sourcing from external suppliers,
- understand how material flow is synchronised in and in between companies,
- explain the benefits of LLP & 4PL in the automotive industry.

**Course unit Air Cargo Platform Findel/Luxembourg:**
At the end of the course, the students will be able to
- appropriately use terminology of air cargo logistics,
• understand management practices and problems with respect to air cargo industry and the importance of air cargo service to the economy and to economic development,
• describe characteristics of the air cargo industry with regard to aircraft, facilities, alliances, regulations and market complexity,
• explain the effects of competition and liberalisation on air carriers, freight forwarders and third party providers,
• explain rate structures, tariff problems, aircraft requirements and terminal facility requirements.

Course unit Pharma and Healthcare Logistics:
At the end of the course, the students will be able to
• appropriately use terminology of pharma- und healthcare logistics,
• to understand the peculiarities in logistics of in pharma-companies and healthcare organisations, such as quality requirements, information systems and need for traceability
• to adapt their logistical knowledge to that business and recognize opportunities to improve and secure logistical processes.

Course unit Sustainable Logistics:
At the end of the course, the students will be able to
• appropriately use terminology of sustainable Logistics,
• describe the environmental impact of logistics and the developments in governmental regulations on logistics,
• explain the environmental and social requirements for sustainable logistics and how this will drive change in the business of SCM and international logistics,
• describe the need for compliance and social responsibility and the effects on supply chain management,
• describe available instruments for sustainable logistics.

Inhalt:
Course unit Logistics and Law:
• English terminology of law and logistics
• Regulation of the market at European and national level / influence of WTO
• The freedom to provide services within the EU transport policy
• Rules governing access to the transport activities
• Special items, e.g. IP rights, counterfeiting, dangerous goods, waste materials, animals
• Most common clauses and other important clauses (Incoterms 2010, choice of the law of the contract, judicial competence, HGB for Germany, CMR)
• Responsibility (with special consideration given to transportation)
• Tax and tariffs, customs clearance, e-customs, trends and development in taxation
• Relationship between indirect taxation and supply chains, tax optimisation
• International logistics security
• Logistic service contracting

Course unit Industrial Logistics using the Example of the Automobile Industry:
• English terminology of industrial logistics
• Classification and types of production
• Manufacturing and resource planning (PPS)
• Up-stream logistics
• Push- and Pull-systems
• Kanban
• Just-In-Time and Just-In-Sequence
• The supply chain pyramid of the Automobile Industry
• Logistic service providers in the Automobile Industry (LLP/4PL)
• International procurement
• Maintenance logistics
• Quality requirements in the Automobile Industry (ISO 9001, TS16949)
- On-site training and visit in the greater region

**Course unit Air Cargo Platform Findel/Luxembourg:**
- English terminology of air cargo logistics
- Carrier, consolidators and integrators
- Global and European cargo aviation business environment and statistics
- Major air cargo aircraft types and types of unit load devices (ULD)
- Special cargo and warehousing, bellyloading, split charter, consolidation charter, plain load charter and road feeder service, emergency uplift, air freight security
- Pricing and carrier strategies in air transportation, cargo terms and conditions
- Major air freight hubs and cargo airlines/alliances
- The role of ICAO, IATA, air cargo associations and their impact on future prospects of the air cargo industry
- Freedoms of the air
- The airwaybill
- Free zones
- Case study
- Outlook on aircargo development
- On-site visit at airport Findel/Luxembourg

**Course unit Pharma and Healthcare Logistics**
- English terminology of hospital and pharma logistics
- Added value of the hospital logistician
- Operational traceability in Logistics (RFID solutions)
- Logistical information and information systems
- Pharmaceutical logistics
- Quality requirements in the pharmaceutical supply chain HACCP, ISO 9001
- Case study hospital logistics
- Case study pharmaceutical logistics
- On-site training and visit in a hospital or company in the greater region

**Course unit Sustainable Logistics:**
- English terminology of green logistics
- Changing legal and social environment for logistics
- Green logistics within challenge and competitive advantage
- Carbon footprint and POLIS project
- Compliance and social responsibility
- Technological development of transportation modes
- Measures and actions for sustainable logistics
- Transparency as driver for green logistics (RFID/EPC, Track&Tracing)
- Urban logistics to reduce city traffic
- Outlook on future development of logistics
- Case studies

**Literatur:**
### Deutsche Fassung

**Modul: Logistikprojekt und Colloquium**

<table>
<thead>
<tr>
<th>Modulbezeichnung:</th>
<th>Logistics project and Colloquium</th>
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<tbody>
<tr>
<td>Modulbezeichnung (engl.):</td>
<td>Logistics Project and Colloquium</td>
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<tr>
<td>Studiengang:</td>
<td>Module Certificate “International Logistics and Supply Chain Management“</td>
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<tr>
<td>Code:</td>
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<tr>
<td>SWS/Lehrform:</td>
<td>16h total contact time for Colloquium, logistics project of 134h</td>
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<td>ECTS-Punkte:</td>
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<td>Studiensemester:</td>
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<td>Pflichtfach:</td>
<td>Yes</td>
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<td>Arbeitssprache:</td>
<td>English</td>
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<tr>
<td>Prüfungsort:</td>
<td>Written report (20 pages) and presentation (20 min + 10 min Q&amp;A), with rating</td>
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<td>ILSCM-03 Logistics Project and Colloquium (part of Module Certificate, 2 semesters), 2nd semester, compulsory course</td>
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<td>Arbeitsaufwand:</td>
<td>Compulsory course attendance includes 16hours colloquium. Total time for this module is 150 hours with 5 ECTS points. Therefore, 134 hours are available for the project work and preparation of report and presentation.</td>
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<td>Empfohlene Voraussetzungen (Module):</td>
<td>ILSCM-01, ILSCM-02</td>
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<td>Als Vorkenntniss empfohlene Module:</td>
<td>none</td>
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<tr>
<td>Dozent:</td>
<td>Prof. Dr. Thomas Korne</td>
</tr>
<tr>
<td>Modulverantwortung:</td>
<td>Prof. Dr. Thomas Korne, others with logistical background</td>
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<td>Lernziele/Kompetenzen:</td>
<td>At the end of the course, the students will be able to</td>
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<tr>
<td></td>
<td>• Choose and deliver a practical project in a given period of time,</td>
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<td>• apply efficient communication skills with other team members,</td>
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<td>• provide a written project report,</td>
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<td></td>
<td>• provide a presentation in front of a trainer and, followed by a 10 minute discussion.</td>
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<tr>
<td>Inhalt:</td>
<td>Project topics will be selected in a company by the participants in accordance with a trainer and should focus on current logistics issues. A trainer will supervise the participants. Final results of the project are written report of approx. 20 pages as well as a presentation (20 minutes) of the topic, the methodical approach and the results. The presentation will be followed by a 10 minutes question and answer session. If no practical project topic is available, a theoretic topic may be provided.</td>
</tr>
<tr>
<td>Literatur:</td>
<td>• Special literature provided by the supervising trainer</td>
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</table>