

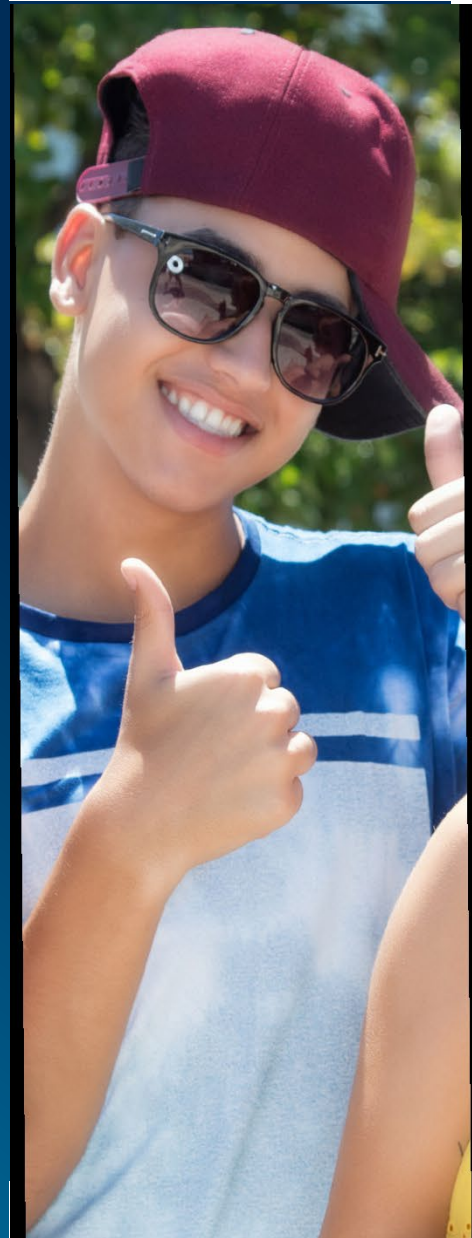
# UNIVERSITY OF APPLIED SCIENCES, ESSLINGEN

WINTER BLOCK SEMINAR 2020  
AT THE FACULTY OF MANAGEMENT

TECHNICAL BASICS

A 2 WEEK CREDIT BEARING PROGRAM

FEBRUARY 2020



# WINTER BLOCK SEMINAR IN TECHNICAL BASICS

ALL COURSES ARE AT BACHELOR'S LEVEL, FULL-TIME AND WORTH 6 ECTS

## Winter School Technical Basics 2020

Monday, 17 Feb 20		Tuesday, 18 Feb 20		Wednesday, 19 Feb 20		Thursday, 20 Feb 20		Friday, 21 Feb 20	
9.00-10.30	Materials Science	9.00-10.30	Materials Science	9.00-10.30	Materials Science	9.00-10.30	Materials Science	9.00-10.30	Materials Science
10.45-12.15	Materials Science	10.45-12.15	Materials Science	10.45-12.15	Materials Science	10.45-12.15	Materials Science	10.45-12.15	Materials Science
13.15-14.45	Materials Processing	13.15-14.45	Materials Processing	13.15-14.45	Materials Processing	13.15-14.45	Materials Processing	13.15-14.45	Materials Processing
15.00-16.30	Materials Processing	15.00-16.30	Materials Processing	15.00-16.30	Materials Processing	15.00-16.30	Materials Processing	15.00-16.30	Materials Processing

Monday, 24 Feb 20		Tuesday, 25 Feb 20		Wednesday, 26 Feb 20		Thursday, 27 Feb 20		Friday, 28 Feb 20	
9.00-10.30	Statics & Strengths	9.00-10.30	Statics & Strengths	9.00-10.30	Statics & Strengths	9.00-10.30	Statics & Strengths	9.00-9.40	40 Minutes Exam Materials Science
10.45-12.15	Statics & Strengths	10.45-12.15	Statics & Strengths	10.45-12.15	Statics & Strengths	10.45-12.15	Statics & Strengths	10.00-10.40	40 Minutes Exam Materials Processing
13.15-14.45	Statics & Strengths	13.15-14.45	Statics & Strengths	13.15-14.45	Statics & Strengths	13.15-14.45	Statics & Strengths	11.00-11.40	40 Minutes Exam Statics & Strengths
15.00-16.30	Exercises	15.00-16.30	Exercises	15.00-16.30	Exercises	15.00-16.30	Exercises		

Lecturer:

Materials Science Dr. R. Bot-Schulz

Materials Processing Dr. R. Bot-Schulz

Statics&Strengths Thomas Hoover(B.Eng.)

## Content:

- | Fundamentals of Material Science and their application in Vehicle and Mechanical Engineering.
- | Fundamentals of Statics and Strength Theory and their application in Vehicle and Mechanical engineering.
- | Materials Processing and its application in Vehicle and Mechanical Engineering.

# COURSE DESCRIPTION

## MATERIAL SCIENCE

### LEARNING TARGETS:

- | Students will understand important materials and their construction, properties, meaning and applicability
- | Students will understand the relationship between internal structure and functional properties of materials
- | Students can assess opportunities to further process materials
- | Students will understand the possibilities and limitations of different material groups
- | Students will have in-depth knowledge of ferrous metals

# COURSE DESCRIPTION

## MATERIALS PROCESSING

### LEARNING TARGETS:

- | Students will learn the six main groups of manufacturing processes (casting, forming, separating, joining, coating and modifying material properties)
- | Students will get to know the subcategories of the first three main groups of manufacturing processes
- | Students will learn both traditional and innovative processes and their respective characteristics
- | Students will identify boundary conditions for the technical and economical use of processes
- | Students will assemble several manufacturing processes to process chains for typical automotive components
- | Students will understand the relationship of Manufacturing Technology to Material Science and Statics and Strength

# COURSE DESCRIPTION

## STATICS AND STRENGTH OF MATERIALS:

### LEARNING TARGETS:

- | Students will analyze systems of forces (decomposition and assembly of forces)
- | Students will recognize and calculate the resulting effect of multiple forces and torques
- | Students will mathematically and graphically determine unknown forces in even central force systems
- | Students will determine unknown forces in even general force systems
- | Students will calculate internal stresses in components for the base load cases
- | Students will understand and assess component's failure mechanisms

# APPLICATION

UNTIL 12<sup>TH</sup> OF FEBRUARY

SEND AN E-MAIL TO:

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