

Course Description – Winter 2024/2025

Title	Fundamentals of Vibration Engineering
Faculty	Mechanical Engineering
Professor	Prof. Dr.-Ing. habil. Carsten Behn
ECTS	5
Level	Bachelor
Requirements	-
Add. Information	https://www.hs-schmalkalden.de/hochschule/fakultaeten/fakultaet-maschinenbau/internationales/englische-kurse.html
Content	This course covers the basics of vibration technology. The students should be able to handle the vibration behavior of mechanical systems analytically and to detect and understand vibration phenomena in practice. Structure: 1. Classification of vibrations: lumped and continuous parameters, 2. Linear systems with a single degree of freedom, 3. Longitudinal and torsional undamped systems with free behavior: 4. Damped systems with free behavior, 5. Forced, damped vibrations, 6. Vibration with force excitation at the mass, spring, damper and housing, 7. Multi-body longitudinal oscillator, 8. Continuum mechanics: longitudinal and torsional vibrations of bars.