

Module name:	<b>Robotics</b>
Lecturer:	Prof. Dr.-Ing. habil. A. Braunschweig
Purposes:	Students shall understand demands and structures of robot systems. They must be able to analyze handling systems as to their application possibilities. It must be possible for them to synthesize handling systems from partial systems. Possibilities of simulation must be well-known. Students shall master selection and dimensioning of application oriented components. Fundamental knowledge of PTP- and CP-programming of IR must be available.
Contents:	<ul style="list-style-type: none"> <li>- Kinds, structures and components of handling systems</li> <li>- Partial systems of IR</li> <li>- Joints, gears and drive systems of IR</li> <li>- Operating spaces, applications</li> <li>- Grip principles and effectors (grippers) for IR</li> <li>- Gripper integrated sensors</li> <li>- Industrial robot control and programming</li> <li>- Fundamentals of automated assembly/disassembly</li> </ul>
Lab work:	Programming of IR for special handling tasks
Lecture style:	Lecture (3 SWS), Lab work (1 SWS) in groups a 12 stud.; english
Prerequisites:	Mechanical Engineering (B.Eng.) or similar
Useability:	Mechanical Engineering (M.Eng.)
Major course assessment:	written exam (120 min), lab certificate (attestation)
Frequency:	yearly in summer semester
Work load:	Presence 60 h + self study 90 h = 150 hours = 5 Credit Points
Literature:	<p>Siciliano, Khatib (Eds.): Robotics, Springer Verlag, 2008</p> <p>Volmer: Industrieroboter, Verlag Technik, 1992</p> <p>Bögelsack/Kallenbach/Linnemann: Roboter in der Gerätetechnik, Verlag Technik 1984</p> <p>Kreuzer u.a.: Industrieroboter, Springer Verlag, 1994</p> <p>Weber: Industrieroboter, Fachbuchverlag Leipzig, 2002</p> <p>Hesse: Handhabungsmaschinen, Vogel Verlag, 1993</p> <p>Mehner/Stürmann: Robotertechnik, Verlag Christiani, 1997</p> <p>Hesse: Greifertechnik, Hanser Verlag, 2011</p> <p>Hesse: Greiferpraxis, Vogel Verlag, 1991</p> <p>Lotter: Wirtschaftliche Montage, VDI Verlag, 1992</p> <p>Hesse: Montagemaschinen, Vogel Verlag, 1993</p> <p>Roddeck: Einführung in die Mechatronik, Teubner Verlag, 1997</p> <p>Heimann/Gerth/Popp: Mechatronik, Fachbuchverl. Leipzig, 2003</p>