

## 课程大纲 COURSE SYLLABUS

1.	<b>课程代码/名称 Course Code/Title</b>	微纳传感器与应用 Micro-Nano sensors and applications
2.	<b>课程性质 Compulsory/Elective</b>	专业课 Elective
3.	<b>课程学分/学时 Course Credit/Hours</b>	3/48
4.	<b>授课语言 Teaching Language</b>	中文 Chinese
5.	<b>授课教师 Instructor(s)</b>	王太宏 Wang Taihong
6.	<b>先修要求 Pre-requisites</b>	无
7.	<b>教学目标 Course Objectives</b>	
	<p>课程学习目标：到课程结束，学生能掌握以下内容：</p> <ul style="list-style-type: none"> <li>• MEMS 技术</li> <li>• 微纳传感器原理</li> <li>• 微纳传感器的概念、设计、制作及应用</li> <li>• 大健康传感器</li> <li>• 自动驾驶传感器</li> <li>• 无线无源传感器</li> </ul> <p>Course Learning Objectives: By the end of this class, students could master:</p> <ul style="list-style-type: none"> <li>• MEMS technology</li> <li>• Micro-nano sensor principle</li> <li>• Concept, design, fabrication and application of micro-nano sensors</li> <li>• Health sensors</li> <li>• Autonomous driving sensors</li> <li>• Wireless passive sensors</li> </ul>	
8.	<b>教学方法 Teaching Methods</b>	
	理论课 Theory	
9.	<b>教学内容 Course Contents</b>	
	<b>Section 1</b>	MEMS技术 (week 1) MEMS technology(week 1)
	<b>Section 2</b>	机械微纳传感器 (week 2) Mechanical micro-nano sensors (week 2)
	<b>Section 3</b>	热微纳传感器 (week 3) Thermal micro-nano sensors (week 3)
	<b>Section 4</b>	磁微纳传感器 (week 4) Magnetic micro-nano sensor (week 4)
	<b>Section 5</b>	光学微纳传感器 (week 5) Optical micro-nano sensors (week 5)

<b>Section 6</b>	辐射微纳传感器 (week 6) Radiation micro-nano sensors (week 6)
<b>Section 7</b>	化学微纳传感器(week 7) Chemical micro-nano sensors (week 7)
<b>Section 8</b>	生物微纳传感器(week 8) Biological micro-nano sensors (week 8)
<b>Section 9</b>	声波传感器(week 9) Acoustic wave sensors(week 9)
<b>Section 10</b>	微纳传感器在大健康产业的应用(week 10) Micro-nano sensor application in health industry (week 10)
<b>Section 11</b>	微纳传感器在应急保障方面的应用(week 11) Micro-nano sensor application in emergency support (week 11)
<b>Section 12</b>	微纳传感器在海洋探测方面的应用(week 12) Micro-nano sensors for marine detection (week 12)
<b>10.</b>	<b>课程考核 Course Assessment</b>
	出勤 10%+期中口头报告 20%+课题口头报告 20%+课题书面报告 50% Attendance 10% + Mid-term Oral Presentation 20% + Project Oral Presentation 20% + Final Project Report 50%
<b>11.</b>	<b>教材及其它参考资料 Textbook and Supplementary Readings</b>
	《微纳传感器及其应用》，2010年北京大学出版社出版的图书。作者：朱勇、张海霞。