课程大纲
COURSE SYLLABUS

1.	**课程代码/名称** **Course Code/Title**	生物医用高分子前沿进展 **Recent progress in biomedical polymers**
2.	**课程性质** **Compulsory/Elective**	专业选修课 **Major Elective Courses**
3.	**课程学分/学时** **Course Credit/Hours**	3 学分/48 学时 3 Course Credit/48 hours
4.	**授课语言** **Teaching Language**	中文 **Chinese**
5.	**授课教师** **Instructor(s)**	吴德成 Wu Decheng
6.	**是否面向本科生开放** **Open to undergraduates or not**	否 No
7.	**先修要求** **Pre-requisites**	高分子材料相关课程 Polymer Chemistry or Polymeric Materials

8. 教学目标
Course Objectives

（如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.）

通过讲授生物医用高分子的基本内容及研究进展，使学生深刻了解生物医用高分子在医疗器械、再生医学等方面科学前沿和发展方向。

By introducing basic knowledge and advances of biomedical polymers, students can thoroughly understand the important role of biomedical polymers for the development in medical devices and regenerative medicine.

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9. 教学方法
Teaching Methods

（如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.）

讲授（Lectures）

10. 教学内容
Course Contents
（如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.）

Section 1	Introduction to Biomedical Polymers (生物医用高分子概论，2 学时)
Section 2	Orthopedic Implantable Medical Devices(骨科植入医疗器械，2 学时)
Section 3	Cardiovascular Implantable Medical Devices (心血管植入医疗器械，2 学时)
Section 4	Oral Cavity and Skin Implantable Medical Devices (口腔、皮肤植入医疗器械，2 学时)

	Section 5	Commonly Used Operation Medical Polymers and Their Application (术中常用医用材料及应用，2 学时)
	Section 6	Multifunctional Hemostatic Materials (多功能止血材料，4 学时)
	Section 7	Scaffold Materials for Bone Tissue Engineering (骨工程支架材料，2 学时)
	Section 8	Scaffold Materials for Cartilage Tissue Engineering (软骨组织工程支架材料，2 学时)
	Section 9	Scaffold Materials for Blood Vessel Engineering (血管工程支架材料，2 学时)
	Section 10	Scaffold Materials for Nerves and Cornea Engineering (神经、角膜工程支架材料，2 学时)
	Section 11	Other Scaffold Materials for Tissue Engineering (其它组织工程支架材料，2 学时)
	Section 12	Anti-tumor Drug Carrier (抗肿瘤纳米药物载体，4 学时)
	Section 13	The Novel Sustained and Controlled Release Drug Delivery System (新型缓控释给药系统，2 学时)
	Section 14	Polymer Gene Carrier (高分子基因载体，2 学时)
	Section 15	New Dosage Forms of Transdermal Administration (经皮给药新剂型，2 学时)
	Section 16	The Surface and Interface of Biomedical Polymers (医用高分子材料的表面与界面，2 学时)
	Section 17	Final Presentation（期末文献汇报，12 学时）

11. 课程考核
Course Assessment

（① 考核形式 Form of examination；② .分数构成 grading policy；③ 如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.）

出勤 Attendance 20%，期末文献汇报 Final Presentation 80%

12. 教材及其它参考资料
Textbook and Supplementary Readings

Smart Biomaterial Devices: Polymers in Biomedical Sciences, Bajpai, A.K ; Bajpai, Jaya ; Saini, Rajesh Kumar ; Agrawal, Priyanka ; Tiwari, Atul, CRC Press, 2016

生物医用高分子，陈学思 陈红主编，科学出版社，2018