**生物化学（01.121.0.2）**

生物化学是一门从分子水平研究生命的化学组成及其在生命活动过程中化学变化的一门学科，其主要内容包括生物分子、物质代谢、基因信息及专题医学生化四部分，第一部分生物分子包括糖类化学、脂类化学、蛋白质化学及核酸化学四个章节，主要介绍这些生物分子的结构和功能，是物质代谢的基础，由于已在前期医用化学课程中介绍，生物化学课程不再介绍；第二部分物质代谢包括酶、维生素、生物氧化、糖代谢、脂类代谢、蛋白质分解代谢和核苷酸代谢，这是生物化学的核心内容，物质代谢的异常与疾病发生发展密切相关；第三部分基因信息主要包括遗传信息的储存、传递、表达调控、细胞信息传递、基因克隆技术、基因诊断和治疗，这部分内容在进一步认识生命现象的本质、诠释细胞分子变化与疾病发生发展的关系及从分子水平上对重大疾病的治疗预防提供科学依据和应对策略等方面具有非常重要的意义。第四部分专题医药学生化包括肝胆生化、水盐代谢和酸碱平衡，这部分内容与临床医学的关系更加密切，引导学生学会用生化的理论去解释临床疾病发生发展的机理。

Biochemistry is a course to introduce the chemical structures and reactions in life activity, including biological molecules, metabolism, gene information and special subjects for medical biochemistry. The first part introduces chemistry of biological molecules, including sugar, lipid, protein and nucleic acid. The structure and function of biological molecules mainly introduced in these chapters are the basis of material metabolism. The contents are not introduced in this course because the contents have been introduced in the early course of the medical chemistry. The second part introduces metabolism, including enzymes, vitamin, biological oxidation, sugar metabolism, lipid metabolism, protein catabolism and nucleotide metabolism, which is the core content of biochemistry. Metabolic abnormalities are associated with disease development. The third part introduces the genetic information, including store, expression and regulation of genetic information, signal tranduction, gene cloning, gene diagnosis and therapy. This part interprets the cellular and molecular changes in relation with the development of the disease and treatment of major disease from the molecular level, and is important for further understanding of the essence of life. The fourth part introduces special subjects for medical biochemistry mainly including liver biochemistry, water and salt metabolism, acid-base balance, this part has close relationship with the clinical medicine to guide students to explain the mechanism of clinical disease with biochemical theory.