

Course description

Course Title Medicinal Chemistry Química Medicinal		
Type/Attendance Time Lecture: 2 hours per week	Credit points (ECTS) 3	Type of Examination Either written or oral exam depending on number of participants
Recommended Prerequisites none		
Content <ul style="list-style-type: none"> – Introduction to Medicinal Chemistry – The overall process of drug discovery and development applied in pharmaceutical industry from target discovery up to final clinical studies and introduction to the market will be explained in generic terms. – Decision points, criteria and relevant technologies for small molecule development will be pointed out. – The specific role and involvement of Medicinal Chemistry in the different phases of the drug discovery process is illustrated and highlighted. – Recent methods and technologies used in laboratory synthesis, automated parallel synthesis, computational chemistry and scale up are introduced. – The synthetic access to several prototypic classes of drug molecules will be shown. – In several case studies the discovery of lead structures through high throughput screening and their structural optimization to development candidates using structure-activity- and structure-property-relationships will be demonstrated. – In vitro and in vivo studies in order to characterize the pharmacokinetic and pharmacodynamic potential of drug candidates will be presented. 		
Conteúdo <ul style="list-style-type: none"> – Introdução à Química Medicinal – Assuntos a serem abordados: – O processo global da descoberta das drogas e o desenvolvimento aplicado nas indústrias farmacêuticas a partir da descoberta até estudos clínicos finais e introdução ao mercado; – Pontos de decisão, critérios e tecnologias relevantes para pequenas moléculas; – Regras específicas e envolvimento da Química Medicinal nas diferentes fases dos processos de descoberta das drogas; – Métodos recentes e tecnologias usadas em laboratório de síntese, síntese paralela automatizada, química computacional e ampliada; – O acesso sintético a diversas classes relacionadas a protótipos de moléculas das respectivas drogas; – Estudos <i>in vitro</i> e <i>in vivo</i> a fim de caracterizar o potencial farmacocinético e farmacodinâmico de candidatos a drogas; 		