Course Title	Clinical Systems Management				
Course Code	HSA-521				
Course Type	Required				
Level	2nd Cycle				
Year / Semester	1 / 2				
Teacher's Name	Associate Professor Dr. med. Raoul Hecker, MBA, LL.M., MPH				
ECTS	10	Lectures	13	Interactive learning activities	38
Course Purpose and Objectives	The main objectives of the course are to: • Analyse the increasing need for incorporating innovative processes in clinical management and the challenges to do so. • Formulate the disruptive innovation concept and how to utilize it in your daily life as a clinical manager. • Discuss the challenges and barriers in patients-centred care, understand the use and importance of PROMs. • Discuss the transition from functional structure in healthcare to patient-centred IPU and analyse the economic benefits of the IPU system. • Discuss the definition and the different components of precision medicine, get familiar with the implications of implementing precision medicine. • Discuss the use clinical managers and healthcare providers in general can do from the use of mobile applications by patients and how it contributed to population health management. • Formulate the changes healthcare is going through and the challenges clinical manager face while digitising workflows. • Understand the use of big data and its implications on predicting and preventive medicine. • Understand the potential, challenges and limitation of full-scale digital integration in large healthcare providers. • Understand what design thinking is and how it can be applied to healthcare. • Analyse the process of transforming a health care organization, integrating patient-centred approach and multidisciplinary care. • Examine the trends in medicine and understand what kind of changes need to be made culturally both in the patients' and the clinician's attitude for new technologies to be successfully integrated in healthcare practice. • Understand how to integrate the knowledge, different stakeholder forces, technological abilities and a vision in clinical management.				
Learning Outcomes	After completion of the course students are expected to be able to: 1. Understand the rapidly changing environment in healthcare and the forces that participate in these changes. 2. Analyse the challenges clinical management is facing while trying to innovate within a healthcare organization and understand the different actions that can be taken in order to overcome them. 3. Assess processes and workflows in clinical management using the concept of disruptive innovation. 4. Apply these concepts in upcoming challenges as a clinical manager				

	5. Understand the role of technology and business model innovation in leading valuable clinical management processes. 6. Define and design clinical management processes around patient-centred care. 7. Get familiar with PROMs and its extensive use. 8. Formulate the structure of patient-centred medical homes. 9. Understand the principles of IPU structure and how to shift to this model 10. Analyse the practice unit management skills. 11. Assess the IPU as a platform to create value and to reduce cost. 12. Understand the concept and the components of precision medicine on the its benefits. 13. Analyze the implication of precision medicine on the way we manage healthcare. 14. Discuss the shift from managing a chronic disease to managing population health. 15. Analyse the changes in clinical management as patients use mobile applications. 16. Assess the contribution and the challenges of the expanding use of mobile applications. 17. Understand the use of data science as a clinical manager. 18. Analyse the needs and challenges of digitising workflows; incorporating data science within the clinical management world. 19. Familiar yourself with the concept of data-driven decision making 20. Understand the implications and benefits for integrating analytical models in healthcare. 21. Analyse data-driven decision support system in clinical management 22. Apply data-driven tools to improve healthcare delivery. 23. Understand the unique attributes of big data in medicine. 24. Evaluate how providers can effectively utilize advanced analytics for improving quality and effectiveness of their services. 25. Assess whether novel big data initiatives are consistent, feasible and relevant for implementation. 26. Understand the principles of Design Thinking. 27. Have the ability to apply the Design Thinking methodology into their own organisation. 28. Formulate the participating forces in the process of transforming a healthcare organization. 29. Analyse a transforming business model of a healthcare organization. 30. Assess priorities and set definite goals while making a change. 31. Understand the cultural trends in healthcare and how they might influence the adoption of various technologies. 32. Examine ways to foster a culture of innovation in healthcare organisations. 33. Summarize the objectives of the course.		
Prerequisites	None	Required	None
Course Content	1. Introduction to Innovation in Clinical Management 2. Disruptive Innovation in Clinical Management 3. Patient-focused Approach 1 in Clinical Management: PROMs 4. Patient-focused Approach 2 in Clinical Management: IPU		

	5. Introduction to Precision Medicine 6. Chronic Disease Management 7. Digital Transformation Big Data and Artificial Intelligence 8. Big Data in Healthcare 9. Big Data Analytics and Artificial Intelligence in Primary Care: case study 10. Design Thinking in Healthcare 11. How to Transform a Healthcare Organisation 12. Introducing a culture of innovation in healthcare 13. Revision and Integration of the Learned Objectives
Teaching Methodology	It is expected that students will demonstrate initiative in seeking learning experiences that will enable them to achieve the course objectives. This includes reviewing all modules, reading required readings, participating in on-line discussions and completing all requirements by the assigned dates. Educational material includes recorded PowerPoint presentations, online tutorials, exercises, such as case study analysis, articles, online videos and book chapters, as indicated for each lecture in the interactive internet-based platform of the course (Moodle). Students are advised to start their studying by the recorded course lecture for each topic, to take full benefit of the additional activities as listed in the current guide and described in detail on the Moodle page of the course. Every week is accompanied by a 30 mins “coffee chat” session, which will serve as a hub to discuss and to understand the weekly in more detail. Two more extensive, 120 mins, sessions will provide a deeper understanding of the topics and provide for ample of room for discussions and to share the student’s own views and experiences with the class.
Bibliography	**Recommended Textbooks / Reading (not compulsory)**

Title	Author(s)	Publisher	Year	ISBN
Hybrid Healthcare	Al-Razouki M, Smith S	Springer	2022	978-3-031-04836-4
The Innovator’s prescription	Christensen Clayton, Grossman Jerome, Hwang Jason	McGrawHill	2009	

	Why innovation in Healthcare is so hard *Harvard Business Review*	Herzlinger R		May 2016	
	Problems and promises of innovation: why healthcare needs to rethink its love/hate relationship with the new. *BMJ Qual Saf*	Woods M.D. et al		April 2011	
	Health Care Information Systems: A Practical Approach for Health Care Management 4th Edition	Wager KA , Lee FW , Glaser JP		Dec 2020	
	Innovating in Healthcare – Framework *Harvard Business Review*	Herzlinger R		July 2015	
	New Marketplace survey: The sources of healthcare Innovation. *Catalyst NEJM.*	Dafny L, Seth-Mohta N		Feb 2017	
	Redefining Healthcare	Porter M, Teisberg E		2006	

	Harvard Business Review				
	Mobile Health in Diabetes: MySugr's Monster Approach	Rose KJ, Chick St		2016	
	The IT transformation the healthcare needs *Harvard Business Review*	Sahni N at eal		Nov-Dec 2017	
	How Geisinger Health System Uses Big Data to Save Lives	Erskine A et al.		2016	
	Big data analytics: Understanding its capabilities and potential benefits for healthcare organizations *Technological Forecasting and Social Change*	Wang Y, LeeAnn K, Byrd TA		2018	
	Cleveland Clinic: Transformation and growth	Porter M, Teisberg E		2015	
	The Catalyst	Liedtka J, Rosen R, Wiltbank R	Crown Business	2009	978-0-307-40949-2

Thought Leader Interview: Eric Topol	Christensen K		2016	

Recommended Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Building client centered systems of care: choosing a process direction for the next century. *Health care management review*	McLaughlin, C.P. and Kaluzny, A.D.		2000	
Big data, big knowledge: big data for personalized healthcare *IEEE Journal of Biomedical and Health Informatics*	Viceconti, Marco, Peter Hunter, and Rod Hose		2015	
“Big data” and the electronic health record *Yearbook of medical informatics*	Ross, M. K., Wei Wei, and L. Ohno-Machado		2014	
Early Colorectal Cancer Detected by Machine Learning Model Using Gender, Age, and Complete Blood Count Data	Hornbrook, Mark C., et al.		2017	

	Digestive diseases and sciences				
	Performance analysis of a machine learning flagging system used to identify a group of individuals at a high risk for colorectal cancer PloS	Kinar, Yaron, et al.		2017	
Assessment	Online quiz (formative) Participation (10%) Coursework: Five assignments (30%) Final Written Exam (60%)				
Language	English				