

Tuition of Project Management for Digital Health for Engineers: A Practical View

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Abstract

This paper presents several considerations about teaching *Project Management for Digital Health (PMDH)* for the students of Digital Health Master Program, in Politehnica University Timisoara. The introductory part briefly describes the specific of digital health projects: the very sensitive public perception of this domain, wide variation of requirements, heterogeneous applications, clients with a very poor time reserve for discussions with the developers, need to integrate software from different developers, the target environment not permissive, need of interoperability, difficulties in financing a.s.o. Due to these, is obvious that is difficult to convince future engineers to embrace a career in the field. Then, the analysed discipline (*PMDH*) is briefly described. This contains “classical” chapters related to general Project Management issues (*About projects, Communication, Motivation, Planning, Risk Analysis, Decision Analysis*), others related to the specific of Software Development (*The development Effort estimation, The Project Leader*) but the most difficult part is to describe examples that illustrate the way the Project Management is adapted to the specific of digital health projects mentioned above. An extra chapter describes a Strategic approach for Medical Healthcare institutions, related to Digital Health. The content of the lecture is practically supported by a complex project that requires from the students to recall all the technical skills from other disciplines and an extra need of managerial skills, because all the projects are team works (7 up to 10 students), they imply diverse technologies (IoT, mobile, cloud, Web, Analytics), the team must deal with a global assessment and split the available points. The project is shared between 3 different disciplines. Thus, the inter-disciplinary skills are also addressed and developed. A lot of specific activities and documents are requested: the aim of the project (considering the need of the project, and an associated economic point of view, related to the return of investment), specifications, development, testing documentation, management files (estimation of the development effort, planning, effort, risk assessment, workload a.s.o.). Based on the didactical experience related to the tuition of this discipline, several useful conclusions are issued: results are presented, comments are made in correlation with the tuition objectives, meant to increase the motivation for this very specific domain of software development. The tuition process must consider the specific of now-a-days students: the Academics must challenge the students with debates, gaining their respect, give them “show”, increase their responsibility, request them an activity as in software companies. All these contribute to obtain a better preparation for a successful career in the field.

Keywords: Software projects in digital health; Project-centered tuition; Software projects