

## Role of Engineering in Forensic Clinical Anatomy

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Forensic Engineering is an engineering branch that works in the prevention of damage, highlighting any defects in design or construction. In the field of medicine it investigates the technical problems that can occur during or after the surgical procedures. The aim of this paper is to present the role of Engineering in Forensic Clinical Anatomy, as the basis for precision medicine, presenting a series of examples of collaboration between the Institute of Anatomy and the Center of Mechanics of Biological Materials (CMBM) of the University of Padua. Forensic Clinical Anatomy may be defined as the practical application of Clinical Anatomy to the ascertainment and evaluation of medical-legal problems. In particular, individual anatomy (normal anatomy, anatomical variations, age-, disease-, or surgery-related modifications) can acquire significant relevance in various fields of legal medicine. Engineering can actively collaborate in defining the most suitable type of prosthesis, taking into account not only the physical characteristics of the subject but also his individual anatomy. For example, in hemodynamic interventions a designer should provide the greatest possible safety margin when specifying catheter diameters or in orthopedics can design and adapt the prosthetic substitute to be implanted. On the other hand, the validation of artificial tissues passes through a complex validation process that can move from a standard validation to an individual valuation based on the anatomical data of the subject for a state-of-the-art health service.