

Educating Aerospace Engineers for Industry 4.0

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ABSTRACT

The Fourth Industrial Revolution (4IR) and the associated technologies that have caused it are changing the competencies required from engineers working in a highly dynamic and technology-intensive sector that is deemed strategic for techno-industrial and economic development: the aerospace industry. However, higher education institutions in charge of educating aerospace engineers are yet to adapt their curricula to meet the new industrial requirements. This paper describes how 4IR is transforming the aerospace industry and its human capital needs, highlighting emerging trends. It then presents an overview of the traditional education received by aerospace engineers, identifies its shortcomings in the new industrial context and reviews the competencies that aerospace engineers must now possess in order to make a significant contribution to the development of the industry. Finally, the paper proposes a model to modernize undergraduate aerospace engineering education so that it accommodates the changing contextual conditions and meets the industrial requirements of the present and foreseeable future.

Keywords: engineering education; fourth industrial revolution.