Review Article Impact Factor: 4.226 ISSN: 2319-507X
N. D. Korpe, IJPRET, 2016; Volume 4 (9): 1-3 IJPRET

INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

A PATH FOR HORIZING YOUR INNOVATIVE WORK

PHYSICS IN ENGINEERING FIELDS

N. D. KORPE

Accepted Date: 15/03/2016; Published Date: 01/05/2016

Abstract: The paper deals with impact of Physics, one of the basic sciences, on Engineering field in general. It traces the gradual involvement of Physics since the inception of Engineering Education to the present times.

Keywords: Physics, Engineering Field

PAPER-QR CODE

Corresponding Author: MR. N. D. KORPE

Access Online On:

www.ijpret.com

How to Cite This Article:

N. D. Korpe, IJPRET, 2016; Volume 4 (9): 1-3

INTRODUCTION

The Oxford dictionary defines profession as a vocation that involves some branch of advanced learning or science. In this perspective the profession of engineering, one of the most preferred professions today, can be seen as vocations founded on scientific knowledge in general and knowledge of physics in particular.

Physics leads science in the study of matter, energy and their interactions. Technology deals with innovative applications of scientific knowledge and professions including those of engineering concerned with practical use of appropriate technologies. The physics of lasers gave birth to laser technology that resulted in the development of laser engineering. Similarly physics of light propagation laid a foundation of fiber optic technology that found wide application in engineering.

Physics seeks knowledge where as professions seek application of knowledge. The function of the physicist is to know, while that of the engineer is to do. Physicists accumulate verified, systematized knowledge of the physical world and professionals bring this knowledge to bear on practical problems. Professional convert thoughts in to action, ideas in_to reality and theories into practice. It is easy to understand that just as suitable action demands appropriate ideas and proper application demands correct knowledge, professional maturity demands a sound base of physics.

The engineers council for professional development defines engineering as the profession in which knowledge of mathematical and physical sciences gained by study, experience and practice is applied with judgments to develop ways to utilize economically the material and forces of nature for the progressive well being of human kinds. Physics facilitates engineers in the optimum utilization of natural resources by providing the requisite knowledge of nature.

An interesting development in this regard is the professional development is closely linked with physics. Many engineers tend to get attracted to physics during the

---

* T.S. to Associate Dean (Instruction), Dr. P.D.K.V., Krishi Nagar, Akola 444104, M.S.

practice of their professions and make substantial contribution to the area of their interest. Fresnel, the French military engineer, was curious about various effects light

exhibits and made pioneering contribution to the study of interference and diffraction of light. Malus, a captain, in the Napoleons army, discovered the phenomenon of polarization of light. Dirac, an electrical engineer, switched to physics to know more about quantum theory.

Early engineers were trained by apprenticeship to become a skilled engineer. However, with the rapid growth of the body of theoretical knowledge greater emphasis was placed on physical, mathematical and engineering sciences. For example, the growing need for analysis in the design of radio communication and electronic systems led nearly all under graduate engineering institutes in USA to include in their electrical engineering curricula rigorous courses in Physics and Mathematics by 1932.

The significance of Physics in the development of engineering profession has been duly recognized by the All India Council of Technical Education (A.I.C.T.E.), which has recommended a basic science component of 15-25 % in all engineering curricula. Almost all the premier engineering institutes in India abroad have full fledged, autonomous department of Physics that fortify the foundation of engineering students in the early part of their career.

These departments are also engaged in research relevant to industry and technology. The time lag between breakthroughs in Physics and their applications to engineering have shrunk enormously in modern times. The Physics research of today becomes the engineering of tomorrow. In fact now a days basic research at the forefront of Physics is considered one of the highest functions in electrical and electronics engineering.

ACKNOWLEDGEMENTS

1. Faculty members, Department of Physics, Nagpur University, Nagpur.

2. Insight, The Daily Hitvada, Nagpur.