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MECHATRONICS ENGINEERING

ENGINEERING LAW AND MANAGERIAL ECONOMICS JUNE 1 QUESTION 1

**RELEVANCE OF LAW, MANAGEMENT AND ECONOMICS IN ENGINEERING PROFESSION**

Managerial economics for engineers is the systematic evaluation of the costs and benefits of proposed technical and business projects. It involves technical-economic analysis with a decision assisting objectives; mathematical modelling with emphasis on the economic effects is the primary analytical technique used to select between defined feasible alternatives.

Engineering management brings together the technological problem-solving ability of engineering and the organizational, administrative, and planning abilities of management in order to oversee the operational performance of complex engineering driven enterprises.

it is illegal for a practicing engineer to jeopardize public safety in any way. This means that an engineer must hold herself or himself to the highest level of moral conduct or suffer litigation if an engineering system fails causing harm to the public including to a maintenance technician. Breaches of engineering law are often sufficient grounds for enforcement measures, which may include the suspension or loss of license and financial penalties. It could also result in serving jail time, should gross negligence be shown to have played a part in any incident that caused loss of human life.

Engineering must be conducted in an orderly and ethical manner where all appropriate codes and standards are carefully considered. Orderly consideration is a vital part of any engineering work involving public safety or a contract. Any disorder involved in engineering practice could be termed as reckless or hacking and may endanger the public's trust in the safety of the engineering being practised. Negligent practice evolves when managerial, accounting or legal pressure impinges on the careful consideration of proper engineering practice.

All engineering activities have toward the cost and justification of any work or project. This means the engineer needs to be aware of what costs are important and how to determine the optimum way of doing things from an economic standpoint.   
 You have to know about capital cost, operating and maintenance costs, taxes, royalties or fees, the cost of interest and rates of return, present value concepts and payouts.

Engineering Economics is important to the engineers for planning, designing, cost benefit of the product and time value of money. These are all taken into mind before manufacturing.

Engineering law, management and economics are relevant as they provide checks and balances for each project and the entire engineering community.