**MID SEM EXAM SYLLABUS FOR AMET (3710808)**

**NOVEMBER-2019**

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|  Introduction: Concept of accuracy, Need for high precision measurement, Accuracy of numerical control system, Inaccuracy due to thermal aspects, Detailed surface roughness concept, Dimensioning & Dimensional chains, Surface and form metrology flatness, roughness, waviness cylindricity, Methods of improving accuracy & surface finish, Influence of forced vibration on accuracy, Dimensional wear of cutting tools and its influences on accuracy.  |
| Analysis of Experimental Data: Causes and Types of Experimental Errors, Error Analysis on a Commonsense Basis, Uncertainty Analysis and Propagation of Uncertainty, Evaluation of Uncertainties for Complicated Data Reduction, Statistical Analysis of Experimental Data, Probability Distributions, The Gaussian or Normal Error Distribution, Comparison of Data with Normal Distribution, The Chi-Square Test of Goodness of Fit, Method of Least Squares, The Correlation Coefficient, Multivariable Regression, Standard Deviation of the Mean, *Students t*-Distribution, Graphical Analysis and Curve Fitting, Choice of Graph Formats, Causation, Correlations, and Curve-fits, General Considerations in Data Analysis  |
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| Design of Experiments: Introduction, Types of Experiments, Experiment Design Factors, Experiment Design Protocol and Examples.  |

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| Holography: Basic principles, holographic interferometry, double exposure holographic interferometery, sandwich holograms, real time holography, time-average holographic interferometer, Character recognition  |