



SCHOOL OF APPLIED SCIENCE & HUMANITIES

DEPARTMENT OF MATHEMATICS

Subject: Linear Algebra

Sem. : I

Subject Code : 25MT103

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Regulation: R25

### **T5 - Assignment 7**

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1. Suppose  $\{v_1, v_2, v_3, \dots, v_n\}$  is a basis of an inner product space  $V$ . Using this basis, construct an orthogonal basis of  $V$ .
2. Apply the Gram-Schmidt Orthonormalization process to find an orthonormal basis for the subspace  $U$  of  $\mathbb{R}^n$  spanned by
  - a.  $\{(1,1,0), (1,0,1)\}$ .
  - b.  $\{(1,1,1,1), (1,2,4,5), (1, -3, -4, -2)\}$ .