Honesty Handout

Thursday, October 29, 2020 3:08 AM

UNIVERSITY OF TORONTO

FACULTY OF APPLIED SCIENCE AND ENGINEERING

ESC103F – Engineering Mathematics and Computation

Term Test

October 29, 2020

Instructor – Professor W.R. Cluett

Writing this take-home term test is an example of when students preparing to become professional engineers are required to invoke a high level of integrity and honesty. The completion and submission of the following statement with your signature is required for your term test to be graded:

I, RIDDHIMAN ROY (**print first and last name**), pledge upon my honour that I will not violate our Faculty's Code of Behaviour on Academic Matters during this assessment by acting in any way that would constitute cheating, misrepresentation, or unfairness, including but not limited to, using unauthorized websites, aids and other assistance, impersonating another person, and committing plagiarism. I acknowledge that providing unauthorized assistance to someone else is also considered a serious academic offence.

I also acknowledge that the only authorized aids for this test are my ESC103F lecture and tutorial notes, including the posted solutions on Quercus to the tutorial problems as well as posted past term tests and solutions on Quercus. No calculators are allowed.

Signature

All six questions are of equal value.

Given information for easy reference:

$$cos\,\theta = \frac{\vec{u}\cdot\vec{v}}{||\vec{u}||\,||\vec{v}||}$$

$$\begin{bmatrix} x_1 \\ y_1 \\ z_1 \end{bmatrix} \times \begin{bmatrix} x_2 \\ y_2 \\ z_2 \end{bmatrix} = \begin{bmatrix} y_1z_2 - z_1y_2 \\ -(x_1z_2 - z_1x_2) \\ x_1y_2 - y_1x_2 \end{bmatrix}$$

$$proj_{\vec{d}}\,\vec{u} = \frac{\vec{u}\cdot\vec{d}}{||\,\vec{d}\,||^2}\,\vec{d}$$

$$det\begin{bmatrix} a & b \\ c & d \end{bmatrix} = ad - bc$$

The inverse of a 2x2 matrix given by $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ is equal to:

$$\frac{1}{ad-bc}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$