**IE-352**

**Section 1, CRN: 32997**

**Section 2, CRN: 5022**

**Second Semester 1431-32 H (Spring-2011) – 4(4,1,1)
MANUFACTURING PROCESSES - 2**

**Sunday, Apr 17, 2011 (13/5/1432H)**

**Exercise: Cutting Forces and Power**

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| **Name:**  | **Student Number:****42** |

**Relative Energies in Cutting**

In an orthogonal cutting operation, $t\_{o}=0.13 mm$, $V=120 m/min$, $α=10°$ and the $width of cut = 6 mm$. It is observed that $t\_{c}=0.23 mm$, $F\_{c}=500 N$ and $F\_{t}=200 N$. Calculate the percentage of the total energy that goes into overcoming friction at the tool–chip interface.