# Lecture Summaries

## l2

Indian Institute of Technology Guwahati 2 Intermittent cutting operation Basic machining operation and important parameters . the tool is perfectly sharp. The cutting edge is a straight line extending perpendicular to the direction of motion and generates a plane . a thin shear plane model – more realistic – For lower speeds .

the chip does not flow to either side or no side spread . a continuous chip without any BUE is produced . work moves with a uniform velocity . the stresses on the shear plane are uniformly distributed . in machining as speed increases, –Rate of deformation increases .

hardness measured in labs is ideal (not real) . hardness : should be appreciably higher than that of work material at elevated temperatures (Hot hardness) - but at higher temperatures -Hardness of tool material decreases -Easier to cut . 'hardness' measured in Labs is not real .

Indian Institute of Technology Guwahati 17 HSS (High speed steel) • Taylor and white in early of the 20th century • Machining speed 30 m/min, 3 to 6 times more than Carbon tool steel • W+Mo+V+Cr+Co • High hardness and good abrasion resistance • After 650o, hardness drops • Can be made by using powder metallurgy technique .