## COURSE 3

## High-Speed & High-Performance Machining



| OBJECTIVES     | - To understand what is HSM & HPM   |                                |
|----------------|---|--------------------------------|
|                | - To identify the requirements in HSM & HP  | PM                             |
|                | <ul> <li>To know the importance of HSM &amp; HPM in<br/>advantages in fast machining</li> </ul>   | n terms of automation, and its |
| COURSE OUTLINE | <ol> <li>What are High-Speed &amp; High-Performance Machining (HSM &amp; HPM)?</li> <li>Not only for mold-making applications</li> <li>Aggressive-cutting method with high feed rate</li> </ol>   |                                |
|                | <ul> <li>2. Requirements for HSM &amp; HPM <ul> <li>Machine's Parameters</li> <li>Tooling &amp; workholding selection</li> <li>Processes &amp; machining strategies</li> </ul> </li> <li>3. Benefits of HSM &amp; HPM <ul> <li>Cost-saving</li> <li>Increased efficiency</li> <li>Better quality finishing</li> </ul> </li> </ul>   |                                |
| DURATION       | <ul> <li>5 days</li> <li>3 days of theory</li> <li>2 days of practical</li> </ul> HIGH SPEED MACHINING (HSM) In comparison with traditional milling: <ul> <li>Spindle speed (N) <sup>↑</sup>, teed rate (F) <sup>↑</sup> and axial cutting depth (a<sub>0</sub>) <sup>↑</sup>.</li> <li>Radial cutting depth (a<sub>1</sub>) <sup>↓</sup> and feed per tooth (t<sub>1</sub>) <sup>↓</sup>.</li> </ul> Findle speed from the formation of the speed (N) <sup>↑</sup> . Traditional milling: time for the formation of the speed (N) <sup>↑</sup> . |                                |
|                | than heat propagation. Heat propagation.  | <b>IBCT Program</b>            |
|                | Thin chip thickness Lower cutting force/deflection Deeper axial cuts  | Towards TVET                   |
| l l            | Small arc of engagement Reduced temperature at Higher speeds<br>cutting zone Higher speeds  | IOWARDS IVEI                   |

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