

**GOVERNMENT POLYTECHNIC JAJPUR**  
A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

**DEPARTMENT OF PRECISION MANUFACTURING ENGINEERING**

**LESSON PLAN**

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| <b>Discipline: PME</b>               | <b>Semester: 4th</b>                     | <b>Name of the Teaching faculty: Suprava Behera</b>  |
| <b>Subject-Mould and Press Tools</b> | <b>No of Days/Week class allotted: 3</b> | <b>Semester from Date: 22.12.2025 To Date: 18.04.2026</b><br><b>No of weeks: 15</b>                                      |
| <b>SL.NO</b>                         | <b>Class/Day</b>                         | <b>TOPICS TO BE COVERED</b>  |
| 1                                    | 1st                                      | Introduction to Mould making   |
|                                      | 2nd                                      | Definition and classification of polymer, Natural polymer  |
|                                      | 3rd                                      | Material for Moulds and Mould Making Techniques - Conventional methods   |
| 2                                    | 1st                                      | Mould Making Techniques - Special Machine Tools  |
|                                      | 2nd                                      | Mould Polishing & Assembly and Mould Maintenance   |
|                                      | 3rd                                      | Introduction to overview of mass production of sheet material components   |
| 3                                    | 1st                                      | Definition and concept of sheet material   |
|                                      | 2nd                                      | Details description of sheet material components and application,  |
|                                      | 3rd                                      | press tools, presses   |
| 4                                    | 1st                                      | Principle of press tools for mass production of sheet material components.   |
|                                      | 2nd                                      | Introduction to Press tool cutting operations  |
|                                      | 3rd                                      | Definition of Press tools and classification   |
| 5                                    | 1st                                      | Classification of shearing operations, strip layout.   |
|                                      | 2nd                                      | Principle of shearing, die and punch clearance, relation between pierced part/ slug and shearing operation, strip layout |
|                                      | 3rd                                      | Procedure of various steps performed in operation.   |
| 6                                    | 1st                                      | Introduction to Press tool non-cutting operations.   |
|                                      | 2nd                                      | Definition of Plastic deformation and forming  |
|                                      | 3rd                                      | Classification of forming operations, spring back, strip layout.   |
| 7                                    | 1st                                      | Principle of plastic deformation and forming, clearance, spring back.  |
|                                      | 2nd                                      | Procedure of Study component/ strip layout/ press tools. Application of various steps performed in operations.           |
|                                      | 3rd                                      | Introduction to Press tool integrated operations   |

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| 8  | 1st | Definition of Concepts of integrated operations  |
|    | 2nd | Classification of integrated operations, strip layout  |
|    | 3rd | Principle of integrated operations, strip layout.  |
| 9  | 1st | Procedure of Study component/ strip layout/ press tools, application of various steps performed in operations.                               |
|    | 2nd | Introduction to Elements and parts in a typical press tool.  |
|    | 3rd | Definition of typical press tools and their parts in cutting operations, non-cutting operation, integrated operation                         |
| 10 | 1st | Concept of material used for different elements  |
|    | 2nd | Principle of alignment and guidance, clearance, stripping and ejection, mounting   |
|    | 3rd | Procedure of study function of press tool, feature and function of each element  |
| 11 | 1st | Introduction to understand presses for press tool operation.   |
|    | 2nd | Definition and classification of presses, constructional feature of press for press tools and concept of shut height, die cushion            |
|    | 3rd | Working principle of presses, selection of shut height, selection of press   |
| 12 | 1st | Procedure of press tool operations, selection and type of press, calculation of press tonnage requirement                                    |
|    | 2nd | Procedure of various steps performed in press working operations   |
|    | 3rd | Introduction to specification, press tool specification and press specification for tool design  |
| 13 | 1st | Definition of material composition and specification   |
|    | 2nd | Classification of tool material, treatment   |
|    | 3rd | Principle of material selection, design parameters from work sheet and process sheet, press specification                                    |
| 14 | 1st | Procedure of study tool material specification and composition, use of assembly drawing and list tool and press specification                |
|    | 2nd | Introduction: To understand the standard procedures for maintenance, safety, storage of press tool and machine                               |
|    | 3rd | Definition of concept of safety, maintenance, storage  |
| 15 | 1st | Principle of safety, maintenance, storage.   |
|    | 2nd | Procedure of study mould safety, machine safety and personal safety, standard check list for maintenance of machine and press tool           |
|    | 3rd | Standard procedure for storage of press tool, application of standard procedures for storage of press tool and Probable question discussion. |

  
 20.12.25  
 Lect. cm mech)  
 FACULTY SIGNATURE