**GOVERNMENT POLYTECHNIC JAJPUR**

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**DEPARTMENT OF MECHANICAL ENGINEERING**

**LESSON PLAN**

| **Discipline: Mechanical** | **Semester: 4th** | **Name of the Teaching faculty: Manas Kumar Mishra** |
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| **Subject: TOM LAB** | **No of Days/Week class alloted: 2** | **Semester from Date: 11/03/22 To Date: 30/06/22**<br>**No of weeks: 15** |
| **Week** | **Class Day** | **Topics** |
| 1st | 1st(3p, Gr 1) | LESSON PLAN, ASSESSMENT SCHEME, Cos, Exams. |
| | | **Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) setting of different types of governors (Hartnell, watt and porter) |
| | 1st(3p, Gr 2) | LESSON PLAN, ASSESSMENT SCHEME, Cos, Exams. |
| | | **Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) setting of different types of governors (Hartnell, watt and porter) |
| | 2nd(3p, Gr 1) | **Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).** |
| | | i) How to take readings for each type of governor(Demo) |
| | | ii) Machine handling and precautions |
| | | iii) Setting, observations, tabulation and calculations for centrifugal force by students |
| | 2nd(3p, Gr 2) | **Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).** |
| | | i) How to take readings for each type of governor(Demo) |
| | | ii) Machine handling and precautions |
| | | iii) Setting, observations, tabulation and calculations for centrifugal force by students |
| 2nd | 1st(3p, Gr 1) | **Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).** |
| | | i) Observations and calculation, plotting necessary graphs |
| | | ii) Record submission |
| | | iii) Viva, assessment |
| | 1st(3p, Gr 2) | **Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).** |
| | | i) Observations and calculation, plotting necessary graphs |
| | | ii) Record submission |
| | | iii) Viva, assessment |
| | 2nd(3p, Gr 1) | **Study & demonstration of static balancing apparatus.** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) setting of machine and demo |
| | 2nd(3p, Gr 2) | **Study & demonstration of static balancing apparatus.** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) Setting of machine and demo |
| 3rd | 1st(3p, Gr 1) | **Study & demonstration of static balancing apparatus.** |
| | | i) Machine handling and precautions |
| | | ii) Taking readings and calculation by students |
| | 1st(3p, Gr 2) | **Study & demonstration of static balancing apparatus.** |
| | | i) Machine handling and precautions |
| | | ii) Taking readings and calculation by students |
| | | **Study & demonstration of static balancing apparatus.** |

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| | 2nd(3p, Gr 1) | i) Viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 2) | **Study & demonstration of static balancing apparatus.** |
| | | i) Viva, record submission and checking |
| | | ii) Assessment |
| 4th | 1st(3p, Gr 1) | **Study & demonstration of journal bearing apparatus.** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) Demonstration to conduct practical |
| | 1st(3p, Gr 2) | **Study & demonstration of journal bearing apparatus.** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) Demonstration to conduct practical |
| | 2nd(3p, Gr 1) | **Study & demonstration of journal bearing apparatus.** |
| | | i) Observations and calculation by students |
| | | ii) Study of different types of journal bearings |
| | 2nd(3p, Gr 2) | **Study & demonstration of journal bearing apparatus.** |
| | | i) Observations and calculation by students |
| | | ii) Study of different types of journal bearings |
| 5th | 1st(3p, Gr 1) | **Study & demonstration of journal bearing apparatus.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 1st(3p, Gr 2) | **Study & demonstration of journal bearing apparatus.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 1) | **Study of different types of Cam and followers** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) Animations and videos of cams and followers |
| | 2nd(3p, Gr 2) | **Study of different types of Cam and followers** |
| | | i) Aim of the expt, theory, procedure |
| | | ii) Tools and equipments required |
| | | iii) Animations and videos of cams and followers |
| 6th | 1st(3p, Gr 1) | **Study of different types of Cam and followers** |
| | | i) Demonstration of experiment |
| | | ii) Study of different types of Cam and followers |
| | 1st(3p, Gr 2) | **Study of different types of Cam and followers** |
| | | i) Demonstration of experiment |
| | | ii) Study of different types of Cam and followers |
| | 2nd(3p, Gr 1) | **Study of different types of Cam and followers** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 2) | **Study of different types of Cam and followers** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 1st(3p, Gr 1) | **Study & demonstration of epicyclic gear train.** |
| | | i) Aim of the expt, theory |
| | | ii) Tools and equipments required |
| | | iii) Procedure |
| | 1st(3p, Gr 2) | **Study & demonstration of epicyclic gear train.** |
| | | i) Aim of the expt, theory |

...joints and types of rivets.

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| 7th | 1st(3p, Gr 2) | ii) Tools and equipments required |
| | | iii) Procedure |
| | 2nd(3p, Gr 1) | **Study & demonstration of epicyclic gear train.** |
| | | i) Setting of machine and demonstration |
| | | ii) Observations and calculation of parameters by students |
| | 2nd(3p, Gr 2) | **Study & demonstration of epicyclic gear train.** |
| | | i) Setting of machine and demonstration |
| | | ii) Observations and calculation of parameters by students |
| 8th | 1st(3p, Gr 1) | **Study & demonstration of epicyclic gear train.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 1st(3p, Gr 2) | **Study & demonstration of epicyclic gear train.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 1) | **Determination of the thickness of ground M.S flat using Vernier Caliper.** |
| | | i) Aim of the expt, theory, parts of a Vernier caliper |
| | | ii) How to find least count |
| | | iii) Procedure to measure thickness of a flat plate (demo) |
| | 2nd(3p, Gr 2) | **Determination of the thickness of ground M.S flat using Vernier Caliper.** |
| | | i) Aim of the expt, theory, parts of a Vernier caliper |
| | | ii) How to find least count |
| | | iii) Procedure to measure thickness of a flat plate (demo) |
| 9th | 1st(3p, Gr 1) | **Determination of the thickness of ground M.S flat using Vernier Caliper.** |
| | | i) precautions |
| | | ii) handling and practice of taking readings using Vernier Caliper |
| | | iii) Observations and calculation of thickness of a MS flat by students |
| | 1st(3p, Gr 2) | **Determination of the thickness of ground M.S flat using Vernier Caliper.** |
| | | i) precautions |
| | | ii) handling and practice of taking readings using Vernier Caliper |
| | | iii) Observations and calculation of thickness of a MS flat by students |
| | 2nd(3p, Gr 1) | **Determination of the thickness of ground M.S flat using Vernier Caliper.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 2) | **Determination of the thickness of ground M.S flat using Vernier Caliper.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| 10th | 1st(3p, Gr 1) | **Determination of diameter of a cylindrical component using micrometer** |
| | | i) Aim of the expt, theory, parts of a micrometer |
| | | ii) How to find least count |
| | | iii) Procedure to measure diameter of a cylindrical component (Demo) |
| | 1st(3p, Gr 2) | **Determination of diameter of a cylindrical component using micrometer** |
| | | i) Aim of the expt, theory, parts of a micrometer |
| | | ii) How to find least count |
| | | iii) Procedure to measure diameter of a cylindrical component (Demo) |
| | 2nd(3p, Gr 1) | **Determination of diameter of a cylindrical component using micrometer** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation of dia by students |
| | 2nd(3p, Gr 2) | **Determination of diameter of a cylindrical component using micrometer** |
| | | i) Precautions |
| | | ii) Handling and practice |

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| | | iii) Observations and calculation of dia by students |
| 11th | 1st(3p, Gr 1) | **Determination of diameter of a cylindrical component using micrometer** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 1st(3p, Gr 2) | **Determination of diameter of a cylindrical component using micrometer** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 1st(3p, Gr 1) | **Determine the heights of gauge blocks or parallel bars using Vernier height gauge.** |
| | | i) Aim of the expt, theory, parts of a height gauge |
| | | ii) How to find least count |
| | | iii) Procedure to measure height (Demo) |
| | 1st(3p, Gr 2) | **Determine the heights of gauge blocks or parallel bars using Vernier height gauge.** |
| | | i) Aim of the expt, theory, parts of a height gauge |
| | | ii) How to find least count |
| | | iii) Procedure to measure height (Demo) |
| 12th | 1st(3p, Gr 1) | **Determine the heights of gauge blocks or parallel bars using Vernier height gauge.** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation of height by students using height gauge |
| | 1st(3p, Gr 2) | **Determine the heights of gauge blocks or parallel bars using Vernier height gauge.** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation of height by students using height gauge |
| | 2nd(3p, Gr 1) | **Determine the heights of gauge blocks or parallel bars using Vernier height gauge.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 2) | **Determine the heights of gauge blocks or parallel bars using Vernier height gauge.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| 13th | 1st(3p, Gr 1) | **Determine the thickness of ground MS plates using slip gauges.** |
| | | i) Aim of the expt, theory |
| | | ii) Slip gauges |
| | | iii) Procedure and Demonstration of experiment |
| | 1st(3p, Gr 2) | **Determine the thickness of ground MS plates using slip gauges.** |
| | | i) Aim of the expt, theory |
| | | ii) Slip gauges |
| | | iii) Procedure and Demonstration of experiment |
| | 2nd(3p, Gr 1) | **Determine the thickness of ground MS plates using slip gauges.** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation of thickness by students using slip gauges. |
| | 2nd(3p, Gr 2) | **Determine the thickness of ground MS plates using slip gauges.** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation of thickness by students using slip gauges. |
| 14th | 1st(3p, Gr 1) | **Determine the thickness of ground MS plates using slip gauges.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 1st(3p, Gr 2) | **Determine the thickness of ground MS plates using slip gauges.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | | **Determination of angel of Machined surfaces of components using sin bar with slip gauges.** |

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| 14th | 2nd(3p, Gr 1) | i) Aim of the expt, theory |
| | | ii) how to use sine bars and slip gauges (Demo) |
| | | iii) how to determine angle of a machined surface |
| | 2nd(3p, Gr 2) | **Determination of angel of Machined surfaces of components using sin bar with slip gauges.** |
| | | i) Aim of the expt, theory |
| | | ii) how to use sine bars and slip gauges (Demo) |
| | | iii) how to determine angle of a machined surface |
| 15th | 1st(3p, Gr 1) | **Determination of angel of Machined surfaces of components using sin bar with slip gauges.** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation by students |
| | 1st(3p, Gr 2) | **Determination of angel of Machined surfaces of components using sin bar with slip gauges.** |
| | | i) Precautions |
| | | ii) Handling and practice |
| | | iii) Observations and calculation by students |
| | 2nd(3p, Gr 1) | **Determination of angel of Machined surfaces of components using sin bar with slip gauges.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |
| | 2nd(3p, Gr 2) | **Determination of angel of Machined surfaces of components using sin bar with slip gauges.** |
| | | i) viva, record submission and checking |
| | | ii) Assessment |

M.K Mishra
10.3.22
Signature of faculty
Lect, mech.