

GOVERNMENT POLYTECHNIC JAJPUR

At/ Po: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

DEPARTMENT OF MECHANICAL ENGINEERING

LESSION PLAN

| Mechanical | Semester: 5th | Name of the Teaching: Suprava Behera | | |
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| Subject: HM&IFP LAB | No of Days/Week class allotted:4 | Semester starts from Date: 15/09/2022 To 22/12/2022 | No of weeks: 15 | |
| Week | Class Day | Topics | | |
| 1st | 1st (2p), Gr-1 | Performance test on impulse turbine and to find out the efficiency | | |
| | | (i) Aim of the exp. Theory of Impulse turbine and working principle | | |
| | | (ii) Details of turbine parts, machine handling and procedure. | | |
| | 2nd(2p), Gr-2 | Performance test on impulse turbine and to find out the efficiency | | |
| | | (i) Aim of the exp. Theory of Impulse turbine and working principle | | |
| | | (ii) Details of turbine parts, machine handling and procedure. | | |
| | 3rd (2p), Gr-1 | Performance test on impulse turbine and to find out the efficiency | | |
| | | (i) Test for efficiency, Calculation, performance curve. | | |
| | 4th(2p), Gr-2 | Performance test on impulse turbine and to find out the efficiency | | |
| | | (i) Test for efficiency, Calculation, performance curve. | | |
| | 2nd | 1st(2p), Gr-1 | Performance test on impulse turbine and to find out the efficiency | |
| | | | (i) Record check and Viva. | |
| 2nd(2p), Gr-2 | | Performance test on impulse turbine and to find out the efficiency | | |
| | | (i) Record check and Viva. | | |
| 3rd(2p), Gr-1 | | Performance test on Kaplan turbine and to find out the efficiency | | |
| | | (i) Aim of the exp. Theory of Kaplan turbine and working principle | | |
| | | (ii) Details of turbine parts, machine handling and procedure. | | |
| 4th(2p), Gr-2 | | Performance test on Kaplan turbine and to find out the efficiency | | |
| | | (i) Aim of the exp. Theory of Kaplan turbine and working principle | | |
| | | (ii) Details of turbine parts, machine handling and procedure. | | |
| 3rd | | 1st(2p), Gr-1 | Performance test on Kaplan turbine and to find out the efficiency | |
| | | | (i) Test for efficiency, Calculation, performance curve. | |
| | 2nd(2p), Gr-2 | Performance test on Kaplan turbine and to find out the efficiency | | |
| | | (i) Test for efficiency, Calculation, performance curve. | | |
| | 3rd(2p), Gr-1 | Performance test on Kaplan turbine and to find out the efficiency | | |
| | | (i) Record check and Viva. | | |
| | 4th(2p), Gr-2 | Performance test on Kaplan turbine and to find out the efficiency | | |
| | | (i) Record check and Viva. | | |
| 4th | 1st(2p), Gr-1 | Performance test on Francis turbine and to find out the efficiency | | |
| | | (i) Aim of the exp. Theory of Francis turbine and working principle | | |
| | | (ii) Details of turbine parts, machine handling and procedure. | | |
| | 2nd(2p), Gr-2 | Performance test on Francis turbine and to find out the efficiency | | |
| | | (i) Aim of the exp. Theory of Francis turbine and working principle | | |
| | | (ii) Details of turbine parts, machine handling and procedure. | | |
| | 3rd(2p), Gr-1 | Performance test on Francis turbine and to find out the efficiency | | |
| | | (i) Test for efficiency, Calculation, performance curve. | | |
| | 4th(2p), Gr-2 | Performance test on Francis turbine and to find out the efficiency | | |
| | | (i) Test for efficiency, Calculation, performance curve. | | |
| | 5th | 1st(2p), Gr-1 | Performance test on Francis turbine and to find out the efficiency | |
| | | | (i) Record check and Viva. | |
| 2nd(2p), Gr-2 | | Performance test on Francis turbine and to find out the efficiency | | |
| | | (i) Record check and Viva. | | |
| 3rd(2p), Gr-1 | | Performance test on centrifugal pump and find out the characteristic curves. | | |
| | | (i) Aim of the exp. Theory of centrifugal pump and characteristic curve. (ii) Details of pump parts, machine handling and procedure to take reading. | | |

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| | 4th(2p), Gr-2 | Performance test on centrifugal pump and find out the characteristic curves. (i) Aim of the exp. Theory of centrifugal pump and characteristic curve. (ii) Details of pump parts, machine handling and procedure to take reading. |
| 6th | 1st(2p), Gr-1 | Performance test on centrifugal pump and find out the characteristic curves. (i) Test for efficiency, Calculation, characteristics curve. |
| | 2nd(2p), Gr-2 | Performance test on centrifugal pump and find out the characteristic curves. (i) Test for efficiency, Calculation, characteristics curve. |
| | 3rd(2p), Gr-1 | Direct operation of single & double acting pneumatic cylinder. i) Aim of the experiment. ii) Video animations showing how valve works. |
| | 4th(2p), Gr-2 | Direct operation of single & double acting pneumatic cylinder. i) Aim of the experiment. ii) Video animations showing how valve works. |
| 7th | 1st(2p), Gr-1 | Direct operation of single & double acting pneumatic cylinder. i) Operating single and double acting pneumatic cylinders in pneumatic trainer. ii) Circuit connection through valves. |
| | 2nd(2p), Gr-2 | Direct operation of single & double acting pneumatic cylinder. i) Operating single and double acting pneumatic cylinders in pneumatic trainer. ii) Circuit connection through valves. |
| | 3rd(2p), Gr-1 | Direct operation of single & double acting pneumatic cylinder. Record check and viva. |
| | 4th(2p), Gr-2 | Direct operation of single & double acting pneumatic cylinder. Record check and viva. |
| 8th | 1st(2p), Gr-1 | Operating double acting pneumatic cylinder with quick exhaust valve i) Aim of the experiment. ii) Video animation showing how pneumatic cylinder works. |
| | 2nd(2p), Gr-2 | Operating double acting pneumatic cylinder with quick exhaust valve i) Aim of the experiment. ii) Video animation showing how pneumatic cylinder works. |
| | 3rd(2p), Gr-1 | Operating double acting pneumatic cylinder with quick exhaust valve i) Operating double acting pneumatic cylinders with quick exhaust valve in pneumatic trainer. |
| | 4th(2p), Gr-2 | Operating double acting pneumatic cylinder with quick exhaust valve i) Operating double acting pneumatic cylinders with quick exhaust valve in pneumatic trainer. ii) Circuit connection through valves. |
| 9th | 1st(2p), Gr-1 | Operating double acting pneumatic cylinder with quick exhaust valve i) record check and viva. |
| | 2nd(2p), Gr-2 | Operating double acting pneumatic cylinder with quick exhaust valve i) record check and viva. |
| | 3rd(2p), Gr-1 | Speed control double acting pneumatic cylinder using metering in and metering out circuits. i) Aim of the experiment. ii) Video animation showing metering in and metering out circuits. ii) Operating cylinders through metering in and metering out circuits. |
| | 4th(2p), Gr-2 | Speed control double acting pneumatic cylinder using metering in and metering out circuits. i) Aim of the experiment. ii) Video animation showing metering in and metering out circuits. ii) Operating cylinders through metering in and metering out circuits. |
| 10th | 1st(2p), Gr-1 | Speed control double acting pneumatic cylinder using metering in and metering out circuits. i) Circuit connection through metering in and metering out circuits. |
| | 2nd(2p), Gr-2 | Speed control double acting pneumatic cylinder using metering in and metering out circuits. i) Circuit connection through metering in and metering out circuits. |

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| 10th | 3rd(2p), Gr-1 | Speed control double acting pneumatic cylinder using metering in and metering out circuits. i) Record check and viva. |
| | 4th(2p), Gr-2 | Speed control double acting pneumatic cylinder using metering in and metering out circuits. i) Record check and viva. |
| 11th | 1st(2p), Gr-1 | Direct operation of single and double acting hydraulic cylinder. i) Operating single & double acting hydraulic cylinders in hydraulic trainer. ii) Circuit connection through various valves. |
| | 2nd(2p), Gr-2 | Direct operation of single and double acting hydraulic cylinder. i) Operating single & double acting hydraulic cylinders in hydraulic trainer. ii) Circuit connection through various valves. |
| | 3rd(2p), Gr-1 | Direct operation of single and double acting hydraulic cylinder. i) record check and viva. |
| | 4th(2p), Gr-2 | Direct operation of single and double acting hydraulic cylinder. i) record check and viva. |
| 12th | 1st(2p), Gr-1 | Direct operation of hydraulic motor. i) Operating hydraulic motor in hydraulic trainer. ii) Circuit connection through various valves. |
| | 2nd(2p), Gr-2 | Direct operation of hydraulic motor. i) Operating hydraulic motor in hydraulic trainer. ii) Circuit connection through various valves. |
| | 3rd(2p), Gr-1 | Direct operation of hydraulic motor. i) record check and viva. |
| | 4th(2p), Gr-2 | Direct operation of hydraulic motor. i) record check and viva. |
| 13th | 1st(2p), Gr-1 | Speed control double acting hydraulic cylinder using metering in and metering out circuits. i) Aim of the experiment. ii) Video animation showing metering in and metering out circuits. |
| | 2nd(2p), Gr-2 | Speed control double acting hydraulic cylinder using metering in and metering out circuits. i) Aim of the experiment. ii) Video animation showing metering in and metering out circuits. |
| | 3rd(2p), Gr-1 | Speed control double acting hydraulic cylinder using metering in and metering out circuits. i) Operating cylinders through metering in and metering out circuits. ii) Circuit connection through metering in and metering out circuits. |
| | 4th(2p), Gr-2 | Speed control double acting hydraulic cylinder using metering in and metering out circuits. i) Operating cylinders through metering in and metering out circuits. ii) Circuit connection through metering in and metering out circuits. |
| 14th | 1st(2p), Gr-1 | Speed control double acting hydraulic cylinder using metering in and metering out circuits. i) record check and viva. |
| | 2nd(2p), Gr-2 | Speed control double acting hydraulic cylinder using metering in and metering out circuits. i) record check and viva. |
| | 3rd(2p), Gr-1 | Doubt clearing , Remedial and leftout practicals |
| | 4th(2p), Gr-2 | Doubt clearing , Remedial and leftout practicals |
| 15th | 1st(2p), Gr-1 | Doubt clearing , Remedial and leftout practicals |
| | 2nd(2p), Gr-2 | Doubt clearing , Remedial and leftout practicals |
| | 3rd(2p), Gr-1 | Viva on over all practicals |
| | 4th(2p), Gr-2 | Viva on over all practicals |

Signature of the faculty