Manufacturing Center
Service Rates
### PROPOSED SERVICE RATE FOR CMR

#### Table 1. TTU CMR equipment usage rates (revise 4-10-2019)

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Fed or Non-Fed Equipment</th>
<th>Item</th>
<th>Cost ($)</th>
<th>Hourly cost ($) (with staff assistance)</th>
<th>Hourly cost ($) (Rates are on self-use basis, operation by staff will incur an additional charge for staff assistance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEM</td>
<td>Fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$48.35</td>
<td>$48.35</td>
<td>$90-$135</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Service contract (per year)</td>
<td>$23,000.00</td>
<td>$46.00</td>
<td>$100-$120</td>
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<td>Consumables</td>
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<td></td>
<td></td>
<td>Depreciation</td>
<td>$95.55</td>
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<td></td>
<td></td>
<td>Total</td>
<td>$40.13</td>
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<tr>
<td></td>
<td></td>
<td>Total cost</td>
<td>$135.68</td>
<td></td>
<td>$90-$135</td>
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<tr>
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<td></td>
<td>CMR New Rate</td>
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<td>$100-$120</td>
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<tr>
<td>XRD</td>
<td>Fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$52.21</td>
<td>$52.21</td>
<td>$24</td>
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<tr>
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<td>Safety inspection</td>
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<td>$112.00</td>
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<tr>
<td>Specimen prep (mounting &amp; polishing)</td>
<td>Non-fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$48.35</td>
<td>$48.35</td>
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<td>Consumables</td>
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<td>$112.00</td>
</tr>
<tr>
<td>Optical microscope</td>
<td>Non-fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$48.35</td>
<td>$48.35</td>
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<td>Consumables</td>
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<td>Total</td>
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<td>$112.00</td>
</tr>
<tr>
<td>Microhardness</td>
<td>Non-fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$48.35</td>
<td>$48.35</td>
<td>$24</td>
</tr>
<tr>
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<td></td>
<td>Consumables</td>
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<td></td>
<td>Depreciation</td>
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<td></td>
<td>Total</td>
<td>$110.34</td>
<td></td>
<td>$112.00</td>
</tr>
<tr>
<td>Sputter Coater</td>
<td>Non-fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$48.35</td>
<td>$48.35</td>
<td>$24</td>
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<tr>
<td></td>
<td></td>
<td>Consumables</td>
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</tr>
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<td>Depreciation</td>
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<td>Total</td>
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<td>CMR New Rate</td>
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<tr>
<td>Zygogram Optical Profiometer</td>
<td>Non-fed</td>
<td>Operator hourly rate (salary + benefits)</td>
<td>$48.35</td>
<td>$48.35</td>
<td>$24</td>
</tr>
<tr>
<td></td>
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<td>Consumables</td>
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<td></td>
<td>Depreciation</td>
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<td>Total</td>
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<td>Total cost</td>
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<td>$72.50</td>
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<td>CMR New Rate</td>
<td>$72.50</td>
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</table>

#### Table 2. Estimate of depreciation rate for non-fed equipment

Depreciation = (New equipment cost - Salvage value of the equipment) / Lifespan

<table>
<thead>
<tr>
<th>Equipment</th>
<th>New equipment cost ($)</th>
<th>Salvage value ($)</th>
<th>Lifespan (yr)</th>
<th>Depreciation ($/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen prep</td>
<td>Saw</td>
<td>$9,165.00</td>
<td>$200.00</td>
<td>0.000</td>
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<tr>
<td></td>
<td>Mounting</td>
<td>$110,419.00</td>
<td>$300.00</td>
<td>0.012</td>
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<tr>
<td></td>
<td>Grinder/polisher</td>
<td>$12,569.31</td>
<td>$500.00</td>
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<td>Total</td>
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<td>Microscope</td>
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<tr>
<td></td>
<td>Software</td>
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<td></td>
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<tr>
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<td>Tester</td>
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<td>$0.43</td>
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<td>Total</td>
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<td>Zygogram Optical Profiometer</td>
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<tr>
<td>Consumable Type</td>
<td>Pack Size</td>
<td>Per/Mount</td>
<td>Mounts/Pack</td>
<td>$/Pack</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>Mounting Media (1.25&quot; Sample)</td>
<td>1800 g</td>
<td>22.5 g</td>
<td>80</td>
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<td>320 Grit</td>
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<td>100</td>
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<td>9 um MetaDI Supreme Diamond</td>
<td>8 oz</td>
<td>0.1 oz</td>
<td>80</td>
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<td>TriDent Polishing Pad</td>
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<td>10</td>
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<tr>
<td>3 um MetaDI Supreme Diamond</td>
<td>8 oz</td>
<td>0.1 oz</td>
<td>80</td>
<td>$90.00</td>
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<td>.05 MasterPrep Alumina</td>
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<td>release agent</td>
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<td>EpoxyCure 2, Epoxy Hardener</td>
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<td>0.141 oz</td>
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<td>EpoxyCure 2, Epoxy Resin</td>
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<td><strong>SEM</strong></td>
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<tr>
<td>Copper tape</td>
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<td>Copper Nickle Tape</td>
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<td>$17.00</td>
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<td>labor / equipment / computer / software</td>
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