<table>
<tr><td>Level</td><td colspan="6">Level - 05</td></tr>
<tr><td>Course Synopsis Course Code</td><td colspan="6">CYU5300</td></tr>
<tr><td>Course Title</td><td colspan="6">Organometallic chemistry</td></tr>
<tr><td>Credit value</td><td colspan="6">03</td></tr>
<tr><td>Core/Optional</td><td colspan="6">Optional</td></tr>
<tr><td>Prerequisites</td><td colspan="6">Pass CYU4300</td></tr>
<tr><td rowspan="2">Hourly breakdown</td><td colspan="2">Theory</td><td>Practical hours</td><td>Independent Learning</td><td>Assessments</td><td>Total hrs</td></tr>
<tr><td>24 Sessions x 02 hrs = 48 hrs</td><td>3 DS x 04 hrs =

12 hrs</td><td>N/A</td><td>24 Sessions x 02 hrs + 10hrs online + 30 hrs recommended reading= 88 hrs</td><td>2 CA x 01 hrs = 02 hrs</td><td>150 hrs</td></tr>
<tr><td>Course Aim/s.</td><td colspan="6">To provide the importance of transition metals and their complexes in biological systems and chemical transforms.</td></tr>
<tr><td>PLOs addressed by course</td><td colspan="6">PLO1: Knowledge: Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the BSc degree.
PLO5: Creativity and Problem Solving: Identify problems and argue out and analyze such problems using qualitative and/or quantitative practical approaches in scientific methodology to provide valid conclusions</td></tr>
<tr><td>Course Learning Outcomes (CLO)</td><td colspan="6">CLO 1:To have the ability of explaining bonding patterns in organometallic complexes. (PLO 01)
CLO 2:To gain the ability of understanding the properties and the synthetic routes of organometallic complexes
(PLO 01, 05)
CLO 3:To obtain the knowledge on predicting products of the reactions discussed in the sessions. (PLO 01)
CLO 4:To acquire a good understanding on the requirements and conditions necessary for the reactions of the organometallic complexes. (PLO 01, 05)
CLO 5:To gain a good knowledge on the catalytic mechanisms of the reactions associated with the organometallic complexes. (PLO 05)</td></tr>
<tr><td>Content

(Main topics, sub topics)</td><td colspan="6">Nomenclature, relationship between geometry and the number of valence electrons, monohapto ligands, polyhapto ligands, types of reaction of orgnometallic compounds, metal carbonyls, alkyl metal complexes, metal hydrides, dihydrogen complexes, catalysts & hydrogenation of olefins, isomerization, hydrocyanation, hydrosilation&hydroboraion of olefins, carbonylation reactions, metathesis &polymerisation of olefins, palladium catalysed reactions.</td></tr>
<tr><td>Teaching Learning methods (TL)</td><td colspan="6">Self-learning:
• Instructional material (IL)
• Online activities (OL)
Non-compulsory contact sessions:
• Day school (DS)
Assessments: MCQs (MCQ), structured essay (SEQ)</td></tr>
<tr><td></td><td colspan="3">Overall Continuous Assessment Mark (OCAM): 40%</td><td colspan="3">Final Assessment: 60%</td></tr>
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Assessment strategy	Continuous Assessment (CA); (60% Best NBT + 40% Other NBT)% (02 hrs)	Final Evaluation Theory: 100% (02 hrs)
Recommended Readings:	**1.** Crabtree R.H., (1994), The Organometallic Chemistry of the Transition Metals. 2nd Ed. **2.** Bochmann M., (1994), Organometallics I **3.** Bochmann M., (1994), Organometallics II **4.** Shriver D. F., Atkins P. W. and Langford C. H., (1994), Inorganic Chemistry **5.** Cotton F. A., Wilkinson G. and Gaus P. L., (1995), Basic Inorganic Chemistry. 3rd Ed.	