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**TRIBOLOGY: Friction, Wear, and Lubrication**

A Summer Professional Program

27 June - 1 July 2022

**Lecture Schedule**

**Monday, 27 June**

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| **Lecture Time** | **Topic** | **Lecturer** |
|  8:30 - 9:30 AM | **1.** Course Overview  | Dr. Nannaji Saka |
|  9:30 -10:00  | *Coffee Break* |  |
| 10:00 -11:00  | **2.** Introduction to Tribology  | Prof. Nam P. Suh |
| 11:00 -12:00 Noon | **3**. Surface Topography & Surface Properties  | Dr. Nannaji Saka |
| 12:00 -1:30 PM  | ***Lunch Break*** |  |
|  1:30 - 2:30  | **4.** Sliding Friction: Mechanisms & Models | Dr. Nannaji Saka |
|  2:30 - 3:30  | **5.** Tribological Testing I: Theory | Dr. Nicholas Randall |
|  3:30 - 4:00 | *Coffee Break* |  |
|  4:00 - 5:00 | **6.** Tribological Testing II: Demonstrations | Dr. Nicholas Randall |
|  5:30 PM | ***Welcome Reception*** |  |

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**Lecture Schedule**

**Tuesday, 28 June**

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| **Lecture Time** | **Topic** | **Lecturer** |
|  8:30 - 9:30 AM | **7.** Friction of Undulating Surfaces | Dr. Nannaji Saka |
|  9:30 -10:00 | *Coffee Break* |  |
| 10:00 -11:00  | **8.** Sliding Wear  | Dr. Said Jahanmir |
| 11:00 -12:00 Noon | **9.** Abrasive and Erosive Wear | Dr. Said Jahanmir |
| 12:00 - 1:30 PM | ***Lunch Break*** |  |
|  1:30 - 2:30 | **10.** Wear of Ceramics and Brittle  Materials | Dr. Said Jahanmir |
|  2:30 -3:30 | **11.** Problem Solving I: Friction | Dr. Said Jahanmir |
|  3:30 - 4:00 | *Coffee Break* |  |
|  4:00 -5:00 | **12.** Problem Solving II: Wear | Dr. Said Jahanmir |
|  5:00 - 6:00 PM | ***Social Hour*** | Students and Faculty |

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**Lecture Schedule**

**Wednesday, 29 June**

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| **Lecture Time** | **Topic** | **Lecturer** |
|  8:30 - 9:30 AM | **13.** Wear of Polymers | Dr. Nicholas Randall |
|  9:30 - 10:00 | *Coffee Break* |  |
| 10:00 -11:00 AM | **14.** Wear of Coatings | Dr. Nicholas Randall |
| 11:00 -12:00 Noon  | **15.** Surface Temperature | Dr. Nannaji Saka |
| 12:00 - 1:30 PM | ***Lunch Break*** |  |
|  1:30 - 2:30  | **16.** Wear-Mechanism Maps | Dr. Nannaji Saka |
|  2:20 - 3:30 | **17.** Problem Solving III: Wear | Dr. Said Jahanmir |
|  3:30 - 4:00 | *Coffee Break* |  |
|  4:00 - 5:00 | **18.** Problem Solving IV: Wear of Polymers and Coatings | Dr. Nicholas Randall |
|  6:30 PM | ***Program Dinner*** |  |

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**Thursday, 30 June**

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| **Lecture Time** | **Topic** | **Lecturer** |
|  8:30 - 9:30 AM  | **19.** Liquid and Solid Lubricants | Dr. Said Jahanmir |
|  9:30 - 10:00 | *Coffee Break* |  |
| 10:00 -11:00 AM | **20.** Boundary and Thin Film Lubrication | Dr. Said Jahanmir |
| 11:00 -12:00 Noon | **21.** Fluid film Lubrication | Dr. Said Jahanmir |
| 12:00 -1:30 PM | *Lunch Break* |  |
|  1:30 - 2:30  | **22.** Problem Solving V: Lubrication | Dr. Said Jahanmir |
|   2:30 - 3:30  | **23.** EHD Lubrication: Gears and Rolling Element Bearings | Dr. Vern Wedeven  |
|  3:30 - 4:00  | *Coffee Break* |  |
|  4:00 - 5:00 | 24. Problem Solving VI:  EHD Lubrication | Dr. Vern Wedeven |
|  5:00 – 6:00 PM | ***Social Hour*** | Students and Faculty |

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**Lecture Schedule**

**Friday, 1 July**

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| **Lecture Time** | **Topic** | **Lecturer** |
|  8:30 - 9:30 AM | **25**. Biotribology | Dr. Said Jahanmir |
|  9:30 - 10:00 | ***Coffee Break*** |  |
|  10:00 - 11:00  | 2**6**. Nanotribology | Dr. Nicholas Randall  |
| 11:00 -12:00 Noon | **27**. Prospect on Tribology:  A Historical Perspective | Prof. Nam P. Suh |
| 12:30 PM  | ***Farewell Lunch*** |  |