Course Category: Program Elective

Course Content

UNIT I MANUFACTURE OF FUELS, LUBRICANTS AND COOLANTS
Structure of petroleum, refining process, fuels, thermal cracking, catalytic cracking, polymerization, alkylation, isomerisation, blending, products of refining process. Manufacture of lubricating oil base stocks, manufacture of finished automotive lubricants, ultra low-sulphur diesel, measurement of sulphur content, Coolants Manufacturing.

UNIT II THEORY OF LUBRICATION AND COOLING
Fundamentals of Friction and wear, Introduction to Engine friction, total engine friction, effect of engine variables on friction, hydrodynamic lubrication, elasto hydrodynamic lubrication, boundary lubrication, bearing lubrication, functions of the lubrication system, introduction to design of a lubricating system, Theory of cooling.

UNIT III LUBRICANTS
Specific requirements for automotive lubricants, oxidation deterioration and degradation of lubricants, additives and additive mechanism, synthetic lubricants, classification of lubricating oils, properties of lubricating oils, tests on lubricants. Grease, classification, properties, test used in grease, solid lubricants

UNIT IV PROPERTIES AND TESTING OF FUELS
Thermo-chemistry of fuels, properties and testing of fuels, relative density, calorific value, distillation, vapour pressure, flash and fire point, spontaneous ignition temperature, self ignition temperature, viscosity, cloud and pour point, flammability, ignitability, diesel index, API gravity, aniline point.

UNIT V COMBUSTION & FUEL RATING

Total: 45 Periods

Text Books

References
Wsm M108S Manual Online: Lubricants, Fuel And Coolant. Place 1 Fuel tank Engine block radiator 2 Coolant Recovery tank 3 Washer
liquid 4 Engine crankcase (with filter) 5 Transmission case Brake system 6 (Reservoir and lines) 7 Front differential case oil 8 Front axle
gear case oil *...* Never use automotive brake oil. KUBOTA UDT or KUBOTA SUPER. UDT fluid* or SAE80, 90 gear oil. 1,062
automotive fuels and lubricants products are offered for sale by suppliers on Alibaba.com, of which diesel fuel accounts for 1%, other
auto engine parts accounts for 1%. A wide variety of automotive fuels and lubricants options are available to you. There are 246
suppliers who sells automotive fuels and lubricants on Alibaba.com, mainly located in Asia. The top countries of suppliers are United
Arab Emirates, China, and Malaysia, from which the percentage of automotive fuels and lubricants supply is 1%, 90%, and 1%
respectively. Related Search BASF's Fuel and Lubricant Solutions is a market leader for sustainable high-performance driveline
lubricants in selected transportation markets. With our leading progressive technologies for EMGARD® transmission and gear
lubricants, we establish industry standards for high performance and sustainable lubricants through joint customer developments
providing maximum value to all market participants. 30 times around the world. The advantage for the automotive industry and
consumers: BASF Transmission and Axle Lubricants enable warranties up to 750,000 miles with oil changes at 500,000 miles.
EMGARD® Transmission Lubricants. New lubrication technologies provide lubricant when and where it is needed. Heat
Management.
Agrinol specializes in the production of such lubricating materials as lubricants, oils, lubricating and cooling liquids (LCL) and steel drums. The introduction of new technologies and the improvement of the already existing ones by modernizing the manufacturing takes place in modern production lines, which provides along with high product quality, competitive price packaging. The range of packaging meets state standards, specifications and UN international rules for transport of dangerous goods. The reference book contains brief information about the purpose, fields of use and normative quality indices of the lubricants produced by the Agrinol. The reference book can be used as a guide to choose and utilize the association’s production.