

LEARNING MANAGEMENT SYSTEM (LMS)

DEPARTMENT OF MICROBIOLOGY

SEM-I : INTRODUCTORY MICROBIOLOGY:

UNIT:1	TOPICS	E-CONTENT
INTRODUCTION	Microbiology: Definition and scope	https://in.docworkspace.com/d/sIOOO0OZJsqzdngY https://youtu.be/aOhvkOEpbR8 Notes: https://in.docworkspace.com/d/sILSO0OZJ-fjingY
	Contributions of scope of microbiology.	http://ndl.iitkgp.ac.in/document/OEYw eXpIRmlkYURkM3JkbUdtKy9UVERER1B jM1ZaZGtZZ2tZQTNaWU56dmlHc25Jb GhTd1p3SVdodytvb1ppUVBUczJ1ellwU Vo3aWFJSVRtSUZuQmc9PQ
	Microscopy	Intoduction to microscopy: http://ndl.iitkgp.ac.in/document/dmxP NnJUMWRoU05UQk50MHVIRIQ5SUR0 RlpnMXNtUndWbnE3VE54YUo1OD0 Transmission microscopy: http://ndl.iitkgp.ac.in/document/eUJ5 RFk4S3pISG1McXpCN2JPTk1QNkxYM0 Mvemd0TmdrbDVZNFcvd2dZTEZXc3I3S 3oyWGIVeHZOMldkMGdwZg Fluorescence microscopy: http://ndl.iitkgp.ac.in/document/eUJ5 RFk4S3pISG1McXpCN2JPTk1QemtITXE 3d3daZ1Q4THIBU0JIVllpRVV3NWpTOG ticmdDUENUeXEyeWlxTA Dark field microscopy: http://ndl.iitkgp.ac.in/document/QXBq

		<p>K1czOUpyM3FlamVjTmREMWFEQIZOL1g0YW1OSVEvczFLQ1NaNFZFTy9NWmpRT0IFNTNIT3I0dml3VfV2NQ</p> <p>Scanning electrom microscopy: http://ndl.iitkgp.ac.in/document/YkxIRXFvZXJrTDBkVzVVZi9ESjl6NmF1UXVTOGtSYVJOYWx00DFBWkdvNVNITW0vWjhpVIZhclIKSIVIT1haNg</p> <p>Light microscopy: https://dl.acm.org/doi/10.1145/1179352.1141976</p>
	<p>Staining methods</p>	<p>http://ndl.iitkgp.ac.in/document/bTdv d2NVVU8vcS83VGNJeXhCVmM5WDhEeHpVc01nNWhFZDNiaFhCeUFuTFpKaR WaHBnMVI3TWRIY1dTVUY2bg</p>
<p>UNIT-2 Structure of bacteria, viruses and pure culture technique concept</p>		<p>Bacteria: https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/7.3/primary/lesson/prokaryote-structure-bio/</p> <p>Viruses: http://ndl.iitkgp.ac.in/document/NW9aZUt2R2VST0JkS0J1SDQ3N3BCOUFLUWluUUpsai9GWEZleVQ0YUhz0</p> <p>HIV: http://ndl.iitkgp.ac.in/document/bWE1aGp5enNHZzh1MlhwrVoxT0dmRkdGMnMzMUZrQTZna01ZTIY5c3ltSldCSU1oMGpKdFA2QkZHSDdWZVR1ZA</p> <p>Bacteriophages: http://ndl.iitkgp.ac.in/document/TzNIQmFaaUc4dGYyMTZRbFlremJQTjZuRHZMa2g4OGhyT0dKbURYc2pzcVNSSm9tZ</p>

		<p>1B1SVVOOTIUcklRMlpIUw</p> <p>Notes: https://in.docworkspace.com/d/sIEiOOZJqPningY</p>
<p>Unit-3 Microbial nutrition and metabolism</p>		<p>Microbial nutrition: http://ndl.iitkgp.ac.in/document/UGpKM1lOeE1CSkNBUHhtSWxaOGJQcFZPSk5TMHI2QnFQNGpZbHNSaFJBc0MxMjhrVTNaMTRtVXdqNVh0MWNBQTRMTVd0ZXRCeUNEUFEzeFpjMC81cUE9PQ</p> <p>Metabolic pathways: http://ndl.iitkgp.ac.in/document/UGpKM1lOeE1CSkNBUHhtSWxaOGJQcFZPSk5TMHI2QnFQNGpZbHNSaFJBdU8ySkZLRWJBdXJUEHVBZjAyKORkakyVmZ1TkxLTnhvcm5MSXNHZ3ZJVVE9PQ</p> <p>Notes: https://in.docworkspace.com/d/sIEeO0OZJ3fningY</p>
<p>Unit-4 Sterilization and microbial growth</p>		<p>http://ndl.iitkgp.ac.in/document/OEYweXpIRmlkYURkM3JkbUdtKy9UUmg4SWxaWFF3VWIWYmo4THdwTHNubIE3NnVKK0dMejNxQkp0eXV1WFkyYmJnblhLTEJpNFVpWFZIRW0wKzRFWGC9PQ</p> <p>Notes: https://in.docworkspace.com/d/sINCO0OZJi_ringY</p>

SEM-II : Microbial diversity:

UNIT-1 Microbial nutrition and growth:		http://ndl.iitkgp.ac.in/document/OEYweXpIRmlkYURkM3JkbUdtKy9UYVRXenhFbINBbIQ2UHIBVmlvSVNKT0xleUpmVkZEOGRaM1R2TURVOVdhZ0NjQ0prcWxyYnpaYTV6dk5EYlhwU3c9PQ Notes for all units of sem-2 https://in.docworkspace.com/d/sIJmO0OZJwPringY
Unit-2 Prokaryotic microbial diversity		http://ndl.iitkgp.ac.in/document/c25OeVJkSkdsa3cyUGpVN2xwU1RQTKVIWTBOZEdIY3pHTGRuWnNXeGhjWT0
Unit-3 Eukaryotic microbial diversity		http://ndl.iitkgp.ac.in/document/MTFyb1V4eDBFcmTmZzliUXZiUEc5dWNSU2k3Y0c4MTMMyL2szWjdYV2VRTT0
Unit-4 Microbial ecosystems		http://ndl.iitkgp.ac.in/document/eUJ5RFk4S3plSG1McXpCN2JPTk1QeS9qRG8xeGhsMkw3QmlwbTU0dWFBdnFV OXJHM3FvVldGKzdOOWtOTU4zTA

	<p>http://ndl.iitkgp.ac.in/document/eUJ5RFk4S3pISG1McXpCN2JPTk1QeS9qRG8xeGhsMkw3QmlwbTU0dWFBdWJyc1ZXWDhJaVdRKzVQdHlxMndCTA</p> <p>http://ndl.iitkgp.ac.in/document/eUJ5RFk4S3pISG1McXpCN2JPTk1QeS9qRG8xeGhsMkw3QmlwbTU0dWFBdlpjdTViV2U1NFpETE5oMmh2L0FhVA</p>
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SEM-III: Food and Environmental Microbiology

Unit-1: Fermented food		<p>http://ndl.iitkgp.ac.in/document/ZTRXeUdIY0Y2dIVUZi9vMEJKWEImZ3N2QnNMNHhZUXAwbGJHZW9hMGszOD0</p> <p>https://www.hindawi.com/journals/bmri/2019/8039138/</p> <p>http://ndl.iitkgp.ac.in/document/OEYweXpIRmlkYURkM3JkbUdtKy9UY1pKUTI4ZIJEKzFNOFFQck9panYvdldNei9wZk9KRk05eW90Yk1EcFkyWEZHU2pMN2hpYIMwcUpFSUJMQmIYMXc9PQ</p> <p>Bacterial toxins: https://in.docworkspace.com/d/sIJm00OZJwPringY</p>
Unit-2: Microbial food spoilage		<p>http://ndl.iitkgp.ac.in/document/UIFIVzh3M2dYdjE5ZU9YeGRIK3RCSDNOUXFUNXpzOTBYODdyV292NngzMmZwbHJZcWtQRWtHSXpEdURtaFdRUVoRk1FaK0h6T2lCanZwTXZKc0Z4K2c9PQ</p> <p>Ppt: https://in.docworkspace.com/d/sILu00OZJ8_fingY</p>
Unit-3: Air and water microbiology		<p>http://ndl.iitkgp.ac.in/document/cVpQaHNXaWhCRDIRQXixM2lQRkFQMXpvRlpJQzRQMExFMVBiT2lLUjdQND0</p>

Unit-4: Soil microbiology	http://ndl.iitkgp.ac.in/document/Z2RWUHoyS0JXTUdZczNJeE9zVU9OeS9scW0zMzVZbHFGMVNlL0NTL1k2cz0 http://www.eagri.org/eagri50/AMBE101/pdf/lec15.pdf
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SEM-IV: Medical Microbiology and immunology:

Unit-1 Medical bacteriology	http://ndl.iitkgp.ac.in/document/Z2RWUHoyS0JXTUdZczNJeE9zVU9ONGNycHRRdlVsMnNzchFoQlpqZy9Tcz0 http://ndl.iitkgp.ac.in/document/dHZaZnQ0ZFFmT2M3c2l5SXE5UkRFc3dLcHBpdmRYNlluRUY1U1BxVnAvYz0
Unit-2 Medical virology and parasitology	http://ndl.iitkgp.ac.in/document/Z2RWUHoyS0JXTUdZczNJeE9zVU9ONmh5Rjl1VFBtazFWMSs3UjV3MUhaTT0 Medical virology: http://ndl.iitkgp.ac.in/document/MDQ1UXRwVIBDOW5XZEMrem0rMWlvRThnTjNJNVFhVUErUVQ0djZ0ZEMzeXlRRTN6OWZoRW9NZ040M3NORkNhZA Medical parasitology: http://ndl.iitkgp.ac.in/document/Z2V6enpHYW04Nm5NSDF4RHp5VUM3UzgxT0lUY29nSzFqK3VKOEsraxJsTmdXN3N6WEY2YkpOVG5FWk5PRituOQ
Unit-3 Introduction to immunology	http://ndl.iitkgp.ac.in/document/ZTdKZVh2WjhIRWUyQXA1OU5pMXhHSUEzY2xpc2l2WU5mWIR3ZlI5WFBXSTO
Unit-4	Kuby text book

Immunological disorders and ag-ab reactions		Ananthanarayana and paniker text book.
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SEM-5 : Molecular biology and microbial genetics

Unit-1 Microbial genetics		<p>http://ndl.iitkgp.ac.in/document/Z2RWUHoyS0JXTUdZczNJeE9zVU9OeEV6Z053Njl2aU9JNzRkNytHcFZGbz0</p> <p>http://ndl.iitkgp.ac.in/document/MDI5cHdNUUInd0lnZHNoQXlvOG5IR3ZaejZYOVU5Ty9hLzlvY29EcFJPWT0</p> <p>Notes: https://in.docworkspace.com/d/sIDm00OZJs_jingY</p>
Unit-2 Mutations and genetic recombinations		<p>http://ndl.iitkgp.ac.in/document/U0xGbmTjZ3BxL3NYU0JJdi9vZjh0REZ6Y2tsZVV2MXIrT2dxSStuSWJMeDk3UDdSM1dkbkJCUmF6U09SSi9LVVMxNFcxMjI4VnVNQ04yeERBZjQ2Q1E9PQ</p> <p>http://ndl.iitkgp.ac.in/document/bWE1aGp5enNHZzh1MlhwrVoxT0dmSnZTaHhKU3Y1YXdNR003VUFMNEI4K3NwL2ZPYklwT0ZESUhrMTIWeEhhbg</p>

<p>Unit-3 Gene expression</p>		<p>http://ndl.iitkgp.ac.in/document/bWE1aGp5enNHZzh1MIhwRVoxT0dmSDIvak0wNS9YVVVHdytMS0tLbWhWOXduVjhHend0Qi93V0F4UWJxNmdEeg</p> <p>Notes: https://in.docworkspace.com/d/sINu00OZJo_fingY</p>
<p>Unit-4 Recombinant DNA Technology</p>		<p>https://www.khanacademy.org/test-prep/mcat/biological-sciences-practice/x04f6bc56:mcat-bio-biochem-foundation-1-passages/e/dna-technology--passage-1</p> <p>Notes: https://in.docworkspace.com/d/sIHm00OZJ0vbingY</p> <p>http://ndl.iitkgp.ac.in/document/OEYweXpIRmlkYURkM3JkbUdtKy9UVFZXZ0RyS1Irb21nenN1d1ZJbIZIWUhKSWIRWEdZYkRKLzAzN2c0UmFnVHljdnwVTVSNU1sUE5TMDJPU1RYUXc9PQ</p>

SEM-6 : Industrial microbiology

Unit-1 Microorganisms and selection		http://ndl.iitkgp.ac.in/document/V1k0b2xhSG9KV0I3R0RmR25SYjg4djhrSzVIS0xSaGhtT2RLKzhRY0tybz0 http://ndl.iitkgp.ac.in/document/Z2V6enpHYW04Nm5NSDF4RHp5VUM3VmpBWXD5NXhMS2pIRjFDUGVUN09JV0pXK0E4QkJFeDFjY3o5T3BLUFhXTg
Unit-2 Fermentation		http://ndl.iitkgp.ac.in/document/NDJ0OFIHMIBvbml1K1RzcEUxa04rUTFZZFh1UVRDU2hVZE9HWDM0ZUZ5RnQzaGYyc1UxTTNBdHpPRDd6U0w2SII5YUYzYm92OXF6bGdmK0NWTVBrL0E9PQ
Unit-3 Types of fermentation		http://ndl.iitkgp.ac.in/document/U0ITWDIFT1BZMUttTUJzSDhYdExNUIFUTVQzN3d2WW04UHRhTmJ4TEpCTT0
Unit-4 Microbial products		Text book: Molecular biology and microbial genetics by Dr.A. Madhuri

SEM-6 : Applied microbiology

Unit-1 Microbial products for small scale entrepreneurs		http://ndl.iitkgp.ac.in/document/NDJ0OFIHMIBvbml1K1RzcEUxa04rY0Q1VGVjdIVCbkUrVVAxclczSGpxZXZKZmlwbVdmRnJgRnFZVWFkNI dSNzIzYnl4ZjZtYWWM3TStnLzhDQ1I tWmc9PQ http://ndl.iitkgp.ac.in/document/bS8vQWM5U2EyeVJkZnlhOUNKcD BheUpFK1dxUHZ5Zm8xWnBaWEJ VdkZMOD0 http://ndl.iitkgp.ac.in/document/eXExVkcwcFR4QXBNL3NrUEIXWD VqWHJKRE9wV1N4N3RTem1JQ1Z jbS8yeEZWNEw2cExVSzY2RUdZa Wd6ZHgvTkkxS2NwNjluVWpla3h vemUrQ1haMIE9PQ
Unit-2 Metabolic engineering for microbial products		http://ndl.iitkgp.ac.in/document/ZkpDTmJ3RDFKbG9LcmFURmZKM XJwSjhUNzdNUIV4RHVVTzFqNUJq QWd0WT0
Unit-3 Microbial diagnosis and health		http://ndl.iitkgp.ac.in/document/OFJCNlgyTDVVb3NGWIE5bUZWW DIIQWNLUkRIYIZYcHk2a3g2S2FNR kovbz0