

Ahmedabad University

Course Catalogue 2020-2021

Ahmedabad University Course Catalogue

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Ahmedabad University

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Ahmedabad University

Ahmedabad University is a private, non-profit university dedicated to rigorous academic pursuit through interdisciplinary learning with a focus on building enquiry as a value. Established in 2009, we provide a liberal education, preparing students to reflect deeply and creatively across fields to become independent thinkers and compassionate leaders. This unique learning process is mediated by projects, fieldwork and a belief that a strong theoretical grounding leads to a robust practice. As a research university, we are building an environment where students and professors explore by reflecting, challenging views and assumptions of each other through data and rigorous discussions, and collaborating to develop insights.

Academic Calendar

Academic Calendar 2020-21 for Returning Students	
<i>Orientation Week</i>	July 26-August 1, 2020
<i>Monsoon Semester</i>	
First Day of Classes	August 4, 2020
Mid Semester Examination Period	September 19-27, 2020
Diwali Break/ Quiet Reading Period	November 14-22, 2020
End Semester Examination Period	November 23-December 2, 2020
Semester Break	December 7, 2020-January 3, 2021
Course Grade Announcement	December 17, 2020
<i>Independent Study Period</i>	
	December 7-24, 2020

<i>Winter Semester</i>	
First Day of Classes	January 4, 2021
Mid Semester Examination Period	February 20-25, 2021
Quiet Reading Period	April 19-23, 2021
End Semester Examination Period	April 24-May 5, 2021
Course Grade Announcement	May 20, 2021
<i>Summer Term</i>	
First Day of Classes	May 24, 2021
Mid Term Examination	Week 4, during class hours
End Term Examination Period	July 12-16, 2021
Course Grade Announcement	July 26, 2021
<i>Summer Break and Internship Period</i>	
	May 10-July 25, 2021

- The schedule for Bi-Semester courses is Included in the Academic Calendar for Incoming Students below.

Academic Calendar 2020-21 for Incoming Students of Undergraduate (except BTech), Integrated Masters and Master of Management Studies Programmes

Orientation	July-August, 2020
Monsoon Semester	
First Day of Classes	August 24, 2020
Foundation Programme Begins	August 24, 2020; August 31, 2020
Mid Semester Examination Period	October 12-18, 2020
Bi-Semester Courses Begin	September 28, 2020
Diwali Break	November 14-16, 2020
Mid Bi-Semester/ End Semester Examination Period	November 28-December 6, 2020
Semester Break	December 7, 2020-January 3, 2021
Course Grade Announcement	December 21, 2020
Independent Study Period	
	December 7-24, 2020

Winter Semester	
First Day of Classes	January 4, 2021
Quiet Reading Period for Bi-Semester Courses	February 15-19
Mid Semester/End Bi-Semester Examination Period	February 20- 25, 2021
Foundation Programme Begins	March 1, 2021; March 8, 2021
Quiet Reading Period	April 19-23, 2021
End Semester Examination Period	April 24-May 5, 2021
Course Grade Announcement	May 20, 2021
Summer Term	
First Day of Classes	May 24, 2021
Mid Term Examination	Week 4, during class hours
End Term Examination Period	July 12-16, 2021
Course Grade Announcement	July 26, 2021
Summer Break and Internship Period	
	May 10-July 25, 2021

- Classes for Incoming Bachelor of Technology Students (2020) has commenced from 12th October 2020.

Programme Offices

Amrut Mody School of Management

Undergraduate Programmes

Ahmedabad University
HL Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Bachelor of Business Administration (Honours)
Professor Siddhartha Saxena
Email: siddhartha.saxena@ahduni.edu.in

Bachelor of Commerce (Honours)
Professor Poonam Dugar
Email: poonam.dugar@ahduni.edu.in

Integrated Master of Business Administration
Professor Amrita Bihani
Email: amrita.bihani@ahduni.edu.in

Graduate Programmes

Master of Business Administration
Ahmedabad University
GICT Building, Central Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Professor Sudhir Pandey
Email: sudhir.pandey@ahduni.edu.in

Master of Management Studies - Heritage Management
Ahmedabad University
Asmita Bhavan, Central Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Professor Aditya Kanth
Email: aditya.kanth@ahduni.edu.in

School of Arts and Sciences

Ahmedabad University
School of Arts and Sciences Building, Central Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Bachelor of Science (Honours)
Professor Sanjay Singh
Email: sanjay.singh@ahduni.edu.in

Bachelor of Arts (Honours)
Professor Aparajith Ramnath
Email: aparajith.ramnath@ahduni.edu.in

Integrated Master of Science in Life Sciences
Professor Sanjay Singh
Email: sanjay.singh@ahduni.edu.in

Master of Arts in Economics
Ahmedabad University
GICT Building, Central Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Professor Amol Agarwal
Email: amol.agarwal@ahduni.edu.in

School of Computer Studies

Integrated Master of Computer Applications
Ahmedabad University
AG Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Professor Shefali Naik
Email: shefali.naik@ahduni.edu.in

School of Engineering and Applied Science

Ahmedabad University
GICT Building, Central Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

Programme Chair

Bachelor of Technology
Professor Nitin Banker
Email: nitin.banker@ahduni.edu.in

Master of Technology in Computer Science and Engineering
Professor Anurag Lakhlani
Email: anurag.lakhlani@ahduni.edu.in

Venture Studio

Ahmedabad University
A G Campus
Navrangpura, Ahmedabad 380009
Gujarat, India

University Office

Ahmedabad University
Commerce Six Roads
Navrangpura, Ahmedabad 380009
Gujarat, India

Explanation of Course Codes

The system of university course codes uses a combination of three letters and three digits for each course. Letters indicate the course area and the digits indicate the level of the course and the serial number of the course in that area.

For example, in course code COM101- Effective Reading and Comprehension Skills, COM refers to the Communication area and 101 indicates that it is an undergraduate level course and its serial number is 1. Similarly, the course with the course code CSC101 is a Computer Science course at the undergraduate level with serial number 1. The course numbering system is further explained below.

Undergraduate Courses: 100-400 level courses

- 100—199 Entry level courses
- 200—299 Intermediate level courses
- 300—399 Advanced level courses with prerequisites
- 400—499 Specialisation, advanced or dissertation courses

Graduate Courses: 500-800 level courses

- 500—599 Entry level Master's courses
- 600—699 Specialisation, advanced or dissertation Master's courses
- 700—799 Entry level Doctoral courses
- 800—899 Specialisation, advanced or dissertation Doctoral courses

Seminar Courses: 900-999 level courses

** Entry level and Intermediate level courses may or may not have prerequisites.*

University Course Registration

All students must register for courses online using the Ahmedabad University Resource Information System (AURIS) during the course registration period every semester. Credentials to log in to the system are communicated to all students on their University email addresses, at the time of admission. The course registration system allows students the flexibility to take courses of their choice across the University. However the final allotment of courses will be done based on the availability of courses, class size limits and fulfilment of prerequisites. Students can search for courses of their choice and choose the available time slots from the system. To maintain full time student status at the University, students need to register for at least 12 credits. The upper limit of number of courses may vary from programme to programme based on the curriculum structure.

The course registration process consists of four phases: Expression of Interest, Pre-Registration, Final Registration and Add/Drop Period.

Expression of Interest (EOI)

In this first stage of the registration process, students are required to express their desire to opt for courses from among the pool of courses available to them. This is done specifically with three objectives: one, to let students know the courses that are likely to be offered during the upcoming semester; two, to ascertain how many students are desirous of various courses, which helps the Programme Offices in planning for courses for the upcoming semester; and three, to give students who participate in the EOI an opportunity to register for those courses ahead of the other students who do not participate in the EOI.

Pre-Registration

Students need to pre-register every semester to indicate their interest in courses of their choice in the following semester. Generally, registration for the Monsoon Semester/Bi-Semester starts in the first week of June and for the Winter Semester starts in the second week of November of each academic year.

Final Registration

Students must pay the fees with all dues before the final registration starts or by the due date mentioned by the University. Courses chosen during the pre-registration phase will be reserved till the fees payment due date. If fees are not paid by the due date, courses will be removed from a student's selection and the student will need to re-register for the courses. Students who have applied for financial aid will be communicated the financial aid decision separately before the course registration starts. Final registration for the Monsoon Semester/Bi-Semester starts in the last week of June, for the Winter Semester it starts in the first week of December, and for the Summer Term it starts in the last week of March of each academic year.

Add/Drop Period

Students are encouraged to attend sessions in the courses of their interest during the first week of the semester even if they may not have registered for such a course. During this one week, they can register for such courses of their interest if there are seats. The Add/Drop period also gives flexibility to students to drop a course. Students can drop a course for a period of up to four weeks. Once the period is over students cannot drop any course they have registered for. However if a student wishes to do so due to exceptional circumstances, she may only do so with the approval of the Programme Chair, Associate Dean or Dean of the School to which she belongs. The request may be approved or rejected based on the circumstances and explanation given by the student.

The procedure for course registration is explained below.

- 1 Students need to log in to www.auris.ahduni.edu.in with credentials given to them.
- 2 Students must then click on the course registration tab.
- 3 Course registration will not open unless the student has paid the fees and other dues. In case they have paid the fees and are unable to register, they need to contact their Programme Office. The Programme Office will verify the payment status and facilitate the registration.
- 4 Students can see the available courses from all Schools.
- 5 Students can search for any course at any School. Through the course search facility, a student can search for courses by course code, course name, professor name, keywords of the course description, etc.
- 6 Once the student finds the course of her choice, she can see the details of the course along with available time slots.
- 7 The student can add a course with a preferred time slot. The system will check the time clash with his/her previously added courses and if no clash is found the course will be added to her course selection panel. The system will also check the maximum and minimum credit range allowed to the student.
- 8 Students can choose three courses beyond their maximum credit load as preference.
- 9 Before final confirmation, the student can add/drop any courses to and from her course selection panel.
- 10 Student can repeat this process any number of times as long as the course registration system remains open.
- 11 After the course registration system is closed, the last course choice submission will be considered as the final selection of the student and courses will be allotted based on that selection.
- 12 Add/Drop Period: Each student will be given a choice to add/drop courses during the Add/Drop Period, in case they wish to make any changes in their registration.

**** In case of any difficulty during or after the course registration period student can contact their respective Programme Offices.***

Timetable (School-wise)

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Abbreviations: Monday = M, Tuesday = T, Wednesday = W, Thursday = Th, Friday = F, Saturday = S, Sunday = Su

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
1	COM100 Elements of Academic Reading and Writing	3	None	1	Chirag Trivedi	M, W	08:00 am - 09:30 am
				4	Preeti Maneck	T, Th	05:30 pm - 07:00 pm
				5	Preeti Maneck	M, F	05:30 pm - 07:00 pm
2	COM100L Language Lab		None	1	Urvashi Gopwani	M	08:00 am - 09:30 am
				2	Urvashi Gopwani	T	08:00 am - 09:30 am
				3	Urvashi Gopwani	Th	05:30 pm - 07:00 pm
				4	Urvashi Gopwani	F	05:30 pm - 07:00 pm
3	COM101 Effective Reading and Comprehension Skills	3	COM100 Elements of Writing	4	Preeti Maneck	T, Th	08:00 am - 09:30 am
				5	Jalaj Singh	M, F	05:30 pm - 07:00 pm
				7	Ashley Garrigan, Pratishtha Pandya	M, F	08:00 am - 09:30 am
				10	Chirag Trivedi	T, Th	05:30 pm - 07:00 pm
				11		M, F	08:00 am - 09:30 am
				12	Pratishtha Pandya	T, Th	08:00 am - 09:30 am
4	COM102 Advanced Writing	3	COM101 Effective Reading and Comprehension Skills	1	Tana Trivedi	M, F	08:00 am - 09:30 am
				2	Purabi Bhattacharya	T, Th	08:00 am - 09:30 am
				4	Shilpa Bhat	T, Th	05:30 pm - 07:00 pm
				5	Shilpa Bhat	T, Th	08:00 am - 09:30 am
5	COM115 Gender Sensitization	3	None	1	Chirag Trivedi	T, Th	04:00 pm - 05:30 pm
6	COM201 Effective Workplace Communication	1.5	COM101 Effective Reading and Comprehension Skills	1	Sudhir Pandey	T, Th	05:30 pm - 07:00 pm
7	COM210 Science Journalism for Impact	3	None	1	Tana Trivedi	M, F	04:00 pm - 05:30 pm
8	COM501 Corporate Communication	1.5	None	1	Sudhir Pandey	T	01:00 pm - 02:30 pm
9	COM506 Culture and Communication	1.5	None	1	Chirag Trivedi	Th	02:30 pm - 04:00 pm
10	COM507 Communication Lab I	0.75	None	1	Sudhir Pandey	W	01:00 pm - 02:30 pm
11	COM701 Research Writing	3	None	1	A. P. Ashwin Kumar	M, F	02:30 pm - 04:00 pm

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
12	EFB101 Introduction to Entrepreneurship	1.5	None	2	Darshna Padia	S T, S	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
13	EFB202 Establishing and Growing Ventures	3	None	1 2	Sanket Shah Sanket Shah	M, W M, W	09:30 am - 11:00 am 11:00 am - 12:30 pm
14	EFB203 Business Designing and Planning	3	EFB101 Introduction to Entrepreneurship	1 2	Kruti Patel Kruti Patel	T, Th T, Th	09:30 am - 11:00 am 11:00 am - 12:30 pm
15	EFB205 Structuring Venture Capital & Entrepreneurial Transactions	3	None	1	Vandana Chak	T, Th	05:30 pm - 07:00 pm
16	EFB499 UG Dissertation	3	None	1	Amrita Bihani	S	08:00 am - 09:30 am
17	EFB502 Design Thinking	1.5	None	1	Aditya Bharadwaj	T, Th	08:00 am - 09:30 am
18	EFB508 Intellectual Property Rights	1.5	None	1	Krishna Mehta	W, F	01:00 pm - 02:30 pm
19	EFB511 Family Business Management and Policies	1.5	None	1	Abhijit Kothari	M, F	05:30 pm - 07:00 pm
20	EFB512 Succession Planning and Professionalization	1.5	None	1	Abrar Ali Saiyed, Abhijit Kothari	M, F	05:30 pm - 07:00 pm
21	EFB608 Intellectual Property Management	1.5	EFB508 Intellectual Property Rights	1	Krishna Mehta	W, F	01:00 pm - 02:30 pm
22	ENV502 Sustainability and Society	3	None	1	Samir Shah	T, Th	09:30 am - 11:00 am
23	ENV702 Climate Change and Cities	3	ENV701 Energy and Environment Policy OR ENV601 Environment Sustainability & Climate Change	1	Minal Pathak	T T	01:00 pm - 02:30 pm 04:00 pm - 05:30 pm
24	EPP100 Microeconomics	3	None	1 2 3 4 5 6 7 8	Rahul Singh Sonal Yadav Puneet Arora Ishita Tripathi Sonal Yadav Pallavi Vyas Puneet Arora Ishita Tripathi	M, F M, W T, Th T, Th W, F W, F T, Th T, Th	02:30 pm - 04:00 pm 11:00 am - 12:30 pm 09:30 am - 11:00 am 01:00 pm - 02:30 pm 09:30 am - 11:00 am 09:30 am - 11:00 am 02:30 pm - 04:00 pm 11:00 am - 12:30 pm

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
25	EPP110 Macroeconomics	3	None	1	Supratim Das Gupta	F	05:30 pm - 07:00 pm
				2	Himani Baxi	M, W	11:00 am - 12:30 pm
				3	Himani Baxi	M, F	02:30 pm - 04:00 pm
				4	Himani Baxi	T, Th	01:00 pm - 02:30 pm
4	Sonal Yadav	T, Th	09:30 am - 11:00 am				
26	EPP210 Money, Banking and Public Finance	3	EPP100 Microeconomics EPP110 Macroeconomics	1	Amol Agrawal	T, Th	05:30 pm - 07:00 pm
27	EPP211 Macroeconomics for Sustainable Planet	2	None	1	To Be Announced	F	06:30 pm - 08:00 pm
28	EPP221 Econometrics: Methods and Application	2	None	1	To Be Announced	S	07:00 pm - 08:30 pm
29	EPP280 Indian Economy: Performance and Policies	3	EPP100 Microeconomics EPP110 Macroeconomics	1	Himani Baxi	T, Th	08:00 am - 09:30 am
30	EPP340 Economics of Human Resources	3	EPP100 Microeconomics EPP110 Macroeconomics	1	Sonal Yadav	T, Th	08:00 am - 09:30 am
31	EPP341 Development Economics	3	EPP100 Microeconomics	1	Jeemol Unni	T, Th	02:30 pm - 04:00 pm
32	EPP500 Microeconomics	1.5	None	1	Rahul Singh	M, F	11:00 am - 12:30 pm
33	EPP510 Macroeconomics	1.5	EPP500 Microeconomics	1	Rahul Singh	M, F	11:00 am - 12:30 pm
34	EPP511 Intermediate Macroeconomics	3	EPP110 Macroeconomics	1	Amol Agrawal	M, W	01:00 pm - 02:30 pm
35	EPP543 Development Economics	3	None	1	Jeemol Unni	M, F	04:00 pm - 05:30 pm
36	EPP699 Dissertation	3	None	1	Amol Agrawal	S	08:00 am - 09:30 am
37	FAC104 Tally ERP 9.0	2	FAC111 Corporate Accounting - I OR FAC114 Financial Accounting	1	Rena Gohel	M, F	08:00 am - 09:30 am
38	FAC112 Corporate Accounting	3	FAC111 Corporate Accounting - I OR FAC114 Financial Accounting	1	Vibha Tripathi	M, W	11:00 am - 12:30 pm
				2	Vibha Tripathi	T, Th	09:30 am - 11:00 am
39	FAC114 Financial Accounting	3	None	1	Binny Rawat	T, Th	02:30 pm - 04:00 pm
				2	Heli Shah	S W, F	09:30 am - 11:00 am 11:00 am - 12:30 pm

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
				3	Poonam Dugar	T, Th	09:30 am - 11:00 am
				4	Poonam Dugar	W, F	11:00 am - 12:30 pm
				5	Binny Rawat	M, F	02:30 pm - 04:00 pm
				6	Binny Rawat	T, Th	11:00 am - 12:30 pm
				7	Binny Rawat	M, F	09:30 am - 11:00 am
40	FAC115 Cost Accounting - II	3	FAC113 Cost Accounting - I	1	Vaibhav Kadia	T, Th	09:30 am - 11:00 am
41	FAC121 Direct Taxes	3	None	1	Poonam Dugar	M, W	09:30 am - 11:00 am
				2	Mona Vora	T, Th	08:00 am - 09:30 am
42	FAC123 Contemporary and Specialised Auditing	3	None	1	Heli Shah	M, W, F	08:00 am - 09:30 am
43	FAC124 Fundamentals of GST	1.5	None	1	Krutesh Patel	T, Th	09:30 am - 11:00 am
				2	Krutesh Patel	T, Th	09:30 am - 11:00 am
44	FAC132 Financial Management - II	3	FAC131 Financial Management - I	1	Mona Vora	M, W	08:00 am - 09:30 am
45	FAC133 Financial Management	3	FAC114 Financial Accounting	1	Karishma Dalal	M, W	11:00 am - 12:30 pm
				2	Saumil Shah	M, W, F	09:30 am - 11:00 am
				3	Saumil Shah	T, Th	01:00 pm - 02:30 pm
				4	Karishma Dalal	T, Th	11:00 am - 12:30 pm
46	FAC214 Management Accounting	3	FAC113 Cost Accounting - I	1	Abhishek Shah	M, W	09:30 am - 11:00 am
				2	Abhishek Shah	M, W	11:00 am - 12:30 pm
				3	Abhishek Shah	T, Th	09:30 am - 11:00 am
47	FAC221 Tax Planning for Non Corporate Entities	3	FAC121 Direct Taxes	1	Heli Shah	T, Th	09:30 am - 11:00 am
48	FAC222 Corporate Tax Planning	3	FAC121 Direct Taxes	1	Krutesh Patel	T, Th	08:00 am - 09:30 am
49	FAC241 Banking	3	FAC131 Financial Management - I	1	Hetal Jhaveri	M, W	09:30 am - 11:00 am
				2	Hetal Jhaveri	T, Th	01:00 pm - 02:30 pm
50	FAC244 Financial Markets	3	FAC131 Financial Management - I	1	Saumil Shah	M, W, F	01:00 pm - 02:30 pm
				2	Saumil Shah	T, Th	11:00 am - 12:30 pm
51	FAC331 Corporate Finance	3	FAC131 Financial Management - I	1	Karishma Dalal	T, Th	01:00 pm - 02:30 pm
			FAC132 Financial Management - II	2	Karishma Dalal	M, W	01:00 pm - 02:30 pm

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
				3	Hetal Jhaveri	T, Th	02:30 pm - 04:00 pm
52	FAC332 Security Analysis and Portfolio Management	3	FAC131 Financial Management - I	1 2	Hemil Shah Hemil Shah	M, F, S M, F, S	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
53	FAC499 UG Dissertation	3	None	1	Amrita Bihani	S	08:00 am - 09:30 am
54	FAC512 Financial Accounting	1.5	None	1	Vibha Tripathi	T, Th	11:00 am - 12:30 pm
55	FAC513 Managerial Accounting	1.5	FAC512 Financial Accounting	1	Neha Desai	T, Th	11:00 am - 12:30 pm
56	FAC534 Advanced Corporate Finance	3	None	1	Kamal Ghosh Ray	M, F	11:00 am - 12:30 pm
57	FAC535 Financial Market Analysis	2	None	1	To Be Announced	SU	06:30 pm - 08:00 pm
58	FAC541 Financial Markets and Institutions	3	None	1	Hetal Jhaveri	M, F	02:30 pm - 04:00 pm
59	FAC633 Security Analysis and Portfolio Management	3	FAC132 Financial Management - II FAC533 Financial Management - II	1	Vinodh Madhavan	T, Th	09:30 am - 11:00 am
60	FAC636 Financial Econometrics	3	FAC533 Financial Management - II OR ECO540 Econometrics	1	Vinodh Madhavan	M, F	09:30 am - 11:00 am
61	HRT212 Heritage: Concepts and Practices	3	None	1	Vijay Ramchandani	W, F	08:00 am - 09:30 am
62	HRT511 Heritage and Conservation Discourses	3	None	1	Neel Chapagain	M, W, F	09:30 am - 11:00 am
63	HRT512 Conservation Principles and Processes	1.5	None	1	Aditya Prakash Kanth	M, F	11:00 am - 12:30 pm
64	HRT531 Heritage Documentation	3	None	1	Aditya Prakash Kanth	T, Th, F	04:00 pm - 05:30 pm
65	HRT532 Anthropological and Sociological Inquiries on Heritage	1.5	None	1	Leya Mathew	T, Th	09:30 am - 11:00 am
66	HRT542 Heritage Laws and Governance	1.5	None	1	Jaydev Nansey, Aditya Prakash Kanth	M, W, F	01:00 pm - 02:30 pm
67	HRT601 Pre - Thesis	3	HRTG511 Heritage Discourses HRTG531 Heritage Documentation Listing and Database	1	Neel Chapagain	M, W	11:00 am - 12:30 pm
68	INS511 Perspective on Market Research Sector	1	None	1	Ravi Miglani	F	08:00 am - 09:30 am

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
69	INS512 Perspective on Real Estate Sector	1		1	Satish Mehta, Parag Patel	S	09:30 am - 11:00 am
70	INT572 Semester-long Internship	12		1	Amrita Bihani	S	07:00 pm - 08:30 pm
71	MAT142 Introductory Calculus	3	None	1	Bhaktida Trivedi	Th T, Th	07:00 pm - 08:30 pm 11:00 am - 12:30 pm
				2	Dinesh Barot	Th W, F	07:00 pm - 08:30 pm 11:00 am - 12:30 pm
				3	Bhaktida Trivedi	Th M, W	07:00 pm - 08:30 pm 09:30 am - 11:00 am
				4	Bhaktida Trivedi	Th M, W	07:00 pm - 08:30 pm 11:00 am - 12:30 pm
				5	Alok Shukla	T, Th	09:30 am - 11:00 am
				6	Bhaktida Trivedi	M, W	01:00 pm - 02:30 pm
				7	Dinesh Barot	T, Th	01:00 pm - 02:30 pm
72	MAT211 Maths for Management	3	MAT142 Introductory Calculus	1	Bhaktida Trivedi	Th T, Th	07:00 pm - 08:30 pm 09:30 am - 11:00 am
				3	Aravind Panicker	Th W, F	07:00 pm - 08:30 pm 01:00 pm - 02:30 pm
73	MGT105 History of Indian Business	3	None	1	Tana Trivedi	T, Th	04:00 pm - 05:30 pm
74	MGT111 Identity and Behaviour	3	None	1	Swati Ghulyani	M, W, F	11:00 am - 12:30 pm
				2	Samvet Kuril	M, W, F	01:00 pm - 02:30 pm
				3	Swati Ghulyani	T, Th	09:30 am - 11:00 am
				4	Jatin Christie	M, F	01:00 pm - 02:30 pm
				5	Vedant Dev	M, F	02:30 pm - 04:00 pm
				6	Jatin Christie	T, Th	01:00 pm - 02:30 pm
				7	Vedant Dev	T, Th	02:30 pm - 04:00 pm
				8	Amrita Bihani	W, F	01:00 pm - 02:30 pm
75	MGT112 Organisation Processes	3	MGT111 Identity and Behaviour	2	Amrita Bihani	T, Th	11:00 am - 12:30 pm
				3	Swati Ghulyani	M, W, F	09:30 am - 11:00 am
				4	Siddhartha Saxena	M, W	01:00 pm - 02:30 pm

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
76	MGT136 Indian Legal System	1.5	None	1	Nimit Thaker	W	08:00 am - 09:30 am
						M, W	01:00 pm - 02:30 pm
				2	Krishna Mehta	T, Th	01:00 pm - 02:30 pm
				3	Nimit Thaker	T, Th	02:30 pm - 04:00 pm
				4	Krishna Mehta	T, Th	04:00 pm - 05:30 pm
5	Krishna Mehta	W, F	08:00 am - 09:30 am				
77	MGT165 Business and Organizational Ethics	1.5	None	1	Nimit Thaker	M, W	01:00 pm - 02:30 pm
				2	Darshna Padia	T, Th	01:00 pm - 02:30 pm
				3	Nimit Thaker	T, Th	02:30 pm - 04:00 pm
78	MGT221 Strategic Human Resource Management	3	MGT121 Human Resource Management	1	Amrita Bihani	M, F	02:30 pm - 04:00 pm
				2	Siddhartha Saxena	T, Th	01:00 pm - 02:30 pm
79	MGT225 Leading High Performing Teams	2		1	To Be Announced	SU	08:00 am - 09:30 am
80	MGT232 Business Laws and Secretarial Practice	3	MGT136 Elements of Law	1	Krishna Mehta	T, Th	08:00 am - 09:30 am
81	MGT233 Trade and Labour Laws	3	MGT136 Elements of Law	1	Shikha Bhagat	M, W	08:00 am - 09:30 am
82	MGT333 Competitive Strategy	1.5	FAC131 Financial Management - I MKT101 Marketing Management - I	1	Kunal Mankodi	T, Th	01:00 pm - 02:30 pm
				2	Zalak Shah	W, F	11:00 am - 12:30 pm
				3	Kunal Mankodi	T, Th	01:00 pm - 02:30 pm
83	MGT499 UG Dissertation	3	None	1	Amrita Bihani	S	08:00 am - 09:30 am
84	MGT504 Behavioural Lab I	0.75	None	1	Siddhartha Saxena	T	04:00 pm - 05:30 pm
85	MGT505 Problem Solving for Social Change	1	None	1	Sudhir Pandey	M	02:30 pm - 04:00 pm
				2	Sudhir Pandey	F	02:30 pm - 04:00 pm
86	MGT511 Organisational Behaviour	1.5	None	1	Jatin Christie	M, F F	02:30 pm - 04:00 pm 08:00 am - 09:30 am
87	MGT513 Leadership	1.5	MGT511 Organisational Behaviour OR MGT112 Organisation Processes	1	Jatin Christie	S T, Th	09:30 am - 11:00 am 02:30 pm - 04:00 pm
				2	Jatin Christie	T, Th	02:30 pm - 04:00 pm
88	MGT521 Human Resource Management	1.5	None	1	Ekta Sharma	M, W	09:30 am - 11:00 am

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
89	MGT522 Strategic Human Resource Management	2	MGT521 Human Resource Management OR MGT121 Human Resource Management	1	Ekta Sharma	S S S T, Th, S	02:30 pm - 04:00 pm 08:00 am - 09:30 am 09:30 am - 11:00 am 11:00 am - 12:30 pm
90	MGT523 Organizational Development	2	MGT511 Organisational Behaviour MGT521 Human Resource Management OR MGT121 Human Resource Management MGT112 Organisation Processes	1	Jatin Christie	M, F	05:30 pm - 07:00 pm
91	MGT524 Dark Side of Organisation	1.5	MGT121 Human Resource Management	1	Siddhartha Saxena	T, Th	05:30 pm - 07:00 pm
92	MGT532 Labour Laws	2	MGT521 Human Resource Management	1	Tanvi Mankodi	M, F	07:00 pm - 08:30 pm
93	MGT534 Corporate Governance	1.5	None	1	Vandana Chak	M, F	04:00 pm - 05:30 pm
94	MGT541 Business Strategy	3	None	1	Kunal Mankodi	T, Th	04:00 pm - 05:30 pm
95	MGT543 Corporate Strategy : Formulation & Implementation	1.5	MGT333 Competitive Strategy OR MGT541 Competitive Strategy	1	Kunal Mankodi	M, F	04:00 pm - 05:30 pm
96	MGT552 Fundamentals of Human Resource Management	1.5	MGT551 Fundamentals of Management for Heritage Managers	1	Ekta Sharma	M, W	09:30 am - 11:00 am
97	MGT562 Business Ethics	1.5	None	1	Nimit Thaker	M, F	04:00 pm - 05:30 pm
98	MGT621 Selection and Testing	1.5	MGT521 Human Resource Management OR MGT121 Human Resource Management	1	Ekta Sharma	S T, Th, S	08:00 am - 09:30 am 09:30 am - 11:00 am
99	MGT626 Sustainable Human Resource Management	1.5	MGT121 Human Resource Management	1	Ekta Sharma	M, F	11:00 am - 12:30 pm
100	MGT628 People analytics	2	None	1	Siddhartha Saxena	T, Th	05:30 pm - 07:00 pm
101	MGT642 Strategies for Firms in Emerging Markets	1.5	MGT333 Competitive Strategy OR MGT541 Business Strategy OR MGT541 Competitive Strategy	1	Kunal Mankodi	T, Th	05:30 pm - 07:00 pm
102	MKT102 Marketing Management - II	3	MKT101 Marketing Management - I	1	Darshna Padia	T, Th	08:00 am - 09:30 am

Timetable - Monsoon Semester 2020

Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
103	MKT103 Marketing Management	3	None	1	Mahendra Singh Rao	M, F	11:00 am - 12:30 pm
				2	Mahendra Singh Rao	M, F	09:30 am - 11:00 am
				3	Zalak Shah	T, Th	02:30 pm - 04:00 pm
				4	Paragi Shah	T, Th	01:00 pm - 02:30 pm
				5	Paragi Shah	W, F	01:00 pm - 02:30 pm
104	MKT312 Essentials of Marketing Research	3	MKT101 Marketing Management - I MKT102 Marketing Management - II	1	Sujo Thomas	M, F	01:00 pm - 02:30 pm
				2	Sujo Thomas	T, Th	05:30 pm - 07:00 pm
105	MKT324 Retail Management	3	MKT101 Marketing Management - I	1	Sujo Thomas	T, Th	09:30 am - 11:00 am
				2	Sujo Thomas	M, F	04:00 pm - 05:30 pm
106	MKT341 Marketing Strategy for Consumer Behaviour	3	MKT101 Marketing Management - I	1	Zalak Shah	T, Th	04:00 pm - 05:30 pm
107	MKT352 Advertising: Crafting Contagious Content	3	None	1	Darshna Padia	M, F	05:30 pm - 07:00 pm
108	MKT499 UG Dissertation	3	None	1	Amrita Bihani	S	08:00 am - 09:30 am
109	MKT504 Understanding Markets and Consumers	1.5	None	1	Paragi Shah	M, F	04:00 pm - 05:30 pm
				2	Paragi Shah	T, Th	02:30 pm - 04:00 pm
110	MKT611 Marketing Research	3	TODS501 Probability and Statistics OR TODS201 Statistics for Decision Making TODS102 Business Statistics	1	Jinal Parikh	T, Th	01:00 pm - 02:30 pm
				2	Jinal Parikh	M, W	01:00 pm - 02:30 pm
111	MKT621 Services Marketing	3	MKT101 Marketing Management - I MKT102 Marketing Management - II OR MKT504 Understanding Markets and Consumers	1	Bijal Mehta	T, Th	09:30 am - 11:00 am
112	MKT631 Sales and Distribution Management	3	MKT501 Marketing Management EPP501 Intermediate Microeconomics OR EPP100 Microeconomics MKT101 Marketing Management - I	1	Aravind Panicker	M, F	04:00 pm - 05:30 pm
113	MKT632 Rural Marketing - An Indian Perspective	3	MKT101 Marketing Management - I MKT102 Marketing Management - II OR MKT103 Marketing Management				

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Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
			OR MKT504 Understanding Markets and Consumers	1	Darshna Padia	M, F	02:30 pm - 04:00 pm
114	MKT642 Interdisciplinary Approach To Consumer Understanding	3	None	1	Ravi Miglani	M, W	08:00 am - 09:30 am
115	MKT653 Digital Marketing	3	MKT101 Marketing Management - I MKT102 Marketing Management - II OR MKT504 Understanding Markets and Consumers MKT505 Marketing Plan and Implementation	1 2 3	Bijal Mehta Bijal Mehta Bijal Mehta	M, W T, Th W, F	01:00 pm - 02:30 pm 01:00 pm - 02:30 pm 09:30 am - 11:00 am
116	MUS101 Inside Indian Music	3	None	1	Prachi Dublay	M, F	04:00 pm - 05:30 pm
117	MUS103 Culturing the Voice	3	None	1	Prachi Dublay	T, Th	08:00 am - 09:30 am
118	RES601 Quantitative Research Methods	1.5	None	1	Bhargav Adhvaryu	T, Th	02:30 pm - 04:00 pm
119	RES602 Qualitative Research Methods	3	None	1	Swati Ghulyani, Bijal Mehta	T, Th	11:00 am - 12:30 pm
120	STA100 Probability	1.5	MAT142 Introductory Calculus OR MAT100 Calculus and Differential Equations	1	Jinal Parikh	F T, Th	05:30 pm - 07:00 pm 04:00 pm - 05:30 pm
121	STA101 Introductory Statistics	3	CSD100 Introductory Level Data Science CSD101 Intermediate Level Data Science	1 2 3 4	Vivek Bhatt Neha Gadhvi Vivek Bhatt Vinay Vachharajani	M, F T, Th M, F T, Th	02:30 pm - 04:00 pm 02:30 pm - 04:00 pm 04:00 pm - 05:30 pm 11:00 am - 12:30 pm
122	TOD206 Industrial Statistics	3	None	1	Dinesh Barot	M, F	04:00 pm - 05:30 pm
123	TOD211 Quantitative Methods for Business	3	None	1	Neha Gadhvi	T, Th	04:00 pm - 05:30 pm
124	TOD221 Operations Management	3	EPP100 Microeconomics TODS101 Basic Statistics and Mathematics TODS102 Business Statistics	1 2	Aravind Panicker Aravind Panicker	M, W T, Th	11:00 am - 12:30 pm 02:30 pm - 04:00 pm
125	TOD501 Introductory Statistics	1.5	None	1 2	Bhargav Adhvaryu Vivek Bhatt	T, Th T, Th	02:30 pm - 04:00 pm 02:30 pm - 04:00 pm

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Amrut Mody School of Management

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
126	TOD503 Simulation Modeling	3	None	1	Vivek Bhatt	T, Th	01:00 pm - 02:30 pm
127	TOD504 Mathematical Methods for Economics	3	TODS207 Business Mathematics	1	Supratim Das Gupta	S M, W	01:00 pm - 02:30 pm 09:30 am - 11:00 am
128	TOD511 Decision Science	3	None	1	Vinay Vachharajani	M, F, S	01:00 pm - 02:30 pm
129	TOD521 Production and Operations Management	3	None	1	Aneesh Chinubhai	M, W	08:00 am - 09:30 am
130	TOD522 Supply Chain and Logistics Management	1.5	EPP100 Microeconomics EPP500 Microeconomics TODS501 Probability and Statistics TODS101 Basic Statistics and Mathematics TODS102 Business Statistics	1	Aravind Panicker	M, W	09:30 am - 11:00 am
131	TOD523 Services Operations Management	1.5	None	1	P Ganesh	T, Th	07:00 pm - 08:30 pm
132	TOD526 Project Management	2	None	1	Padmin Buch	T, Th	08:00 am - 09:30 am
133	TOD531 Introduction to Analytics	1.5	None	1 2 3	Kamal Gupta Roy Kamal Gupta Roy Kamal Gupta Roy	M Th F T M, W	05:30 pm - 07:00 pm 09:30 am - 11:00 am 05:30 pm - 07:00 pm 09:30 am - 11:00 am 09:30 am - 11:00 am
134	UWSS102 City as Text	3	COM101 Effective Reading and Comprehension Skills	1	Sudhir Pandey	T, Th	04:00 pm - 05:30 pm

Timetable - Monsoon Semester 2020

School of Arts and Sciences

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
135	BCS102 Biochemistry I	3	None	1	Balaji Prakash, Sanjay Singh	T, F	11:00 am - 12:30 pm
136	BIO 250 Brain and Behaviour	3	None	1	Rama Ratnam	M, W	01:00 pm - 02:30 pm
137	BIO101 Introductory Biology	3	None	1	Manish Datt, Rama Ratnam	T, Th	11:00 am - 12:30 pm
138	BIO140 Ethics in Life Sciences	3	None	1	Ratna Ghosal, Apaar Kumar, Joseph Van Weelden	T, Th	01:00 pm - 02:30 pm
139	BIO200 Human Physiology	3	BIO102 Basic Biology II	1	Souvik Sen Gupta	SU, S	08:00 am - 09:30 am
140	BIO-203 Biochemistry and Genetics Practicals	3	None	1 2	Dinesh Konka Dinesh Konka	W Th	09:30 am - 12:30 pm 09:30 am - 12:30 pm
141	BIO220 Cell Biology	3	None	1	Noopur Thakur	T, Th	02:30 pm - 04:00 pm
142	BIO300 Animal Biotechnology	3	BIO102 Basic Biology II	1	Souvik Sen Gupta	W, F	09:30 am - 11:00 am
143	BIO301 Cell Biology and Bioinformatics	6	ISB202 Basics of Bioinformatics	1 2	Dinesh Konka Dinesh Konka	M W W T, Th	09:30 am - 12:30 pm 01:00 pm - 02:30 pm 11:00 am - 12:30 pm 09:30 am - 12:30 pm
144	BIO310 Genetics	3	BIO102 Basic Biology II	1	Krishna Bs Swamy	M, F	02:30 pm - 04:00 pm
145	BIO500 Recombinant DNA Technology	3	BIO203 Molecular Biology	2	Ashutosh Kumar	M, F	04:00 pm - 05:30 pm
146	BIO501 Advanced Molecular Biology Practical	9	BCS102 Biochemistry I BCS201 Biochemistry II BIO203 Molecular Biology	1 1	Dinesh Konka To Be Announced , Dinesh Konka	W, F W, F W, F	08:00 am - 09:30 am 11:00 am - 12:30 pm 09:30 am - 11:00 am
147	BIO540 Nano-biotechnology	3	BCS201 Biochemistry II	1	Sanjay Singh	M, F	04:00 pm - 05:30 pm
148	BIO543 Developmental Biology	3	BIO205 Cell Biology	1	Vivek Tanavde	T, Th	11:00 am - 12:30 pm
149	BIO544 Cancer Biology	3	BIO205 Cell Biology BCS201 Biochemistry II BIO203 Molecular Biology	1	Vivek Tanavde	M, W	11:00 am - 12:30 pm
150	BIO546 Human Protozoan Parasites	3	BIO202 Immunology				

Timetable - Monsoon Semester 2020

School of Arts and Sciences

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
165	HST285 Power in Movement: Expressing the History of Social Movements in India	3	None	1	Aparajita Basu	T, Th	04:00 pm - 05:30 pm
166	JAP-101 Japanese for beginners	3	None	1	Dipti Chitale	Th, F	01:00 pm - 02:30 pm
167	MAT 110 Introductory College Mathematics	3	None	1	Ashwin Pande	M, F	02:30 pm - 04:00 pm
168	MAT 146 Intermediate Calculus	3	MAT142 Introductory Calculus	1	Ashwin Pande	M, F	01:00 pm - 02:30 pm
169	MAT 256 Differential Equations	3	None	1	Sutapa Mukherji	T, Th	09:30 am - 11:00 am
170	PER101 Introduction to Persian I	3	None	1	Salmabanu Shaikh	T, Th	04:00 pm - 05:30 pm
171	PHI 100 Introduction to Western Philosophy	3	None	1	Apaar Kumar	T, Th	09:30 am - 11:00 am
172	PHI 120 Introduction to Ethical Theory: Virtues, Vices and Values	3	None	1	Joseph Van Weelden	M, F	02:30 pm - 04:00 pm
173	PHL101 Introduction to Humanistic Inquiry	3	None	1	Samuel Wright	M, W	11:00 am - 12:30 pm
174	PHL125 An Elementary Introduction to the Philosophical Traditions of India	3	None	1	Shishir Saxena	M, W	11:00 am - 12:30 pm
175	PHL134 Urdu Prose and Poetry	3	None	1	Salmabanu Shaikh	M, W	01:00 pm - 02:30 pm
176	PHL136 Learning Sanskrit Through Sanskrit Literature: Elementary	3	None	1	Shishir Saxena	T, Th	11:00 am - 12:30 pm
177	PHY 111 Classical Mechanics - I	3	None	1	Sutapa Mukherji	M, W, F	09:30 am - 11:00 am
178	PHY112 Electromagnetic Theory	3	None	2	Anjan Ananda Sen	F T, Th	11:00 am - 12:30 pm 05:30 pm - 07:00 pm
179	PHY121 Laboratory Physics - I	3	None	1	To Be Announced	M, Th M, Th	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
180	PHY122 Laboratory Physics: Electromagnetism	3	None	1	Aditya Vaishya	T, F T, F	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
181	PHY230 Introductory Astronomy	3	None	1	Aditya Vaishya	W, F	09:30 am - 11:00 am
182	PHY797 Research Project	3	None	1	Sutapa Mukherji	SU, S	08:00 am - 09:30 am

Timetable - Monsoon Semester 2020

School of Arts and Sciences

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
183	PSY 101 Introduction to Psychology	3	None	1 2	Divita Singh To Be Announced	Th, F Th, F	11:00 am - 12:30 pm 11:00 am - 12:30 pm
184	PSY 210 Cognitive Psychology	3	PSY101 Introduction to Psychology	1	Divita Singh	M W	04:00 pm - 05:30 pm 09:30 am - 11:00 am
185	PSY151 Research Methods in Psychology	3	None	1	To Be Announced	M, W	11:00 am - 12:30 pm
186	SPS102 Identity, Inequality and Difference	3	None	1	Leya Mathew	T, Th	01:00 pm - 02:30 pm
187	SPS103 Politics in Independent India	3	None	1	Sarthak Bagchi	M, W	01:00 pm - 02:30 pm
188	SPS201 Research Methods in Social and Political Sciences	3	None	1	Maryann Chacko	T, Th	02:30 pm - 04:00 pm
189	SPS202 Family, Community, Nation	3	None	1	Maya Ratnam	M, W	11:00 am - 12:30 pm
190	SPS250 Introduction to International Relations	3	None	1	Keita Omi	T, Th	04:00 pm - 05:30 pm
191	SPS251 Ecology and Society	3	None	1	Maya Ratnam	T, Th	05:30 pm - 07:00 pm
192	SPS257 Anthropology of Texts and Literature	3	COM102 Advanced Writing	1	Saumya Malviya	T, Th	01:00 pm - 02:30 pm

Timetable - Monsoon Semester 2020

School of Computer Studies

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
193	CIT605 Database Administration	5	COSC205 Advanced Database Management System	1	Shefali Naik	M, T, W, Th, F	11:00 am - 12:30 pm
194	MOB622 Mobile Application Development using iPhone	5	COSC203 Object Oriented Concepts and Programming MOBI605 Wireless Communication and Mobile Technology	1	Mansi Joshi	M, T, W, Th, F	08:00 am - 09:30 am
195	PRJ608 Minor Project	10	None	1		M	05:30 pm - 07:00 pm

Timetable - Monsoon Semester 2020
School of Engineering and Applied Science

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
196	BTP402 B.Tech Project Part - 1 (BTP - 1)	3	None	1	Vinay Vachharajani	SU, S	08:00 am - 09:30 am
197	CHE200 Power Plants and Mechanical Operations	4	SCS130 Applied Physics	1	Harshad Shah	T, Th	05:30 pm - 07:00 pm
198	CHE201 Fluid Mechanics	3	MAT100 Calculus and Differential Equations	1	Akhand Rai	M, W	09:30 am - 11:00 am
				2	Akhand Rai	M, W	07:00 pm - 08:30 pm
199	CHE211 Material and Energy Balance	3	None	1	Harshad Shah, Snigdha Khuntia	T, Th	02:30 pm - 04:00 pm
200	CHE300 Mass Transfer Operations - II	3	CHE260 Stoichiometry and Process Calculations CHE204 Mass Transfer Operations - I CHE221 Thermodynamics - II	1	Sridhar Dalai	T, Th	01:00 pm - 02:30 pm
201	CHE301 Heat Transfer	3	CHE201 Fluid Mechanics MAT100 Calculus and Differential Equations	1	Arijit Ganguli	T, Th	09:30 am - 11:00 am
				2	Arijit Ganguli	T, Th	05:30 pm - 07:00 pm
202	CHE302 Chemical Engineering Lab - II	1.5	CHE300 Mass Transfer Operations - II CHE310 Chemical Reaction Engineering CHE204 Mass Transfer Operations - I	1	To Be Announced	F F	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
203	CHE303 Transport Phenomena	3	CHE201 Fluid Mechanics CHE300 Mass Transfer Operations - II CHE301 Heat Transfer CHE204 Mass Transfer Operations - I	1	Arijit Ganguli	M, W	11:00 am - 12:30 pm
204	CHE304 Heat Transfer Lab	1.5	CHE220 Thermodynamics - I CHE201 Fluid Mechanics	1	Sasmita Patnaik	T T	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
				2	Sasmita Patnaik	Th Th	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
				3	Sasmita Patnaik	M M	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
205	CHE310 Chemical Reaction Engineering	3	CHE221 Thermodynamics - II	1	Deepak Kunzru	M, W	09:30 am - 11:00 am
206	CHE350 Process Safety and Management	3	None	1	Anil Trivedi	T, Th	11:00 am - 12:30 pm
207	CHE401 Pollution Control	3	None	1	Harshad Shah	W F	01:00 pm - 02:30 pm 09:30 am - 11:00 am

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School of Engineering and Applied Science

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
208	CHE410 Catalysis and Catalytic Processes	3	None	1	Aditi Singhal	M Th	01:00 pm - 02:30 pm 04:00 pm - 05:30 pm
209	CHE440 Process Design and Economics	3	CHE170 Introduction to Materials Science and Engineering CHE300 Mass Transfer Operations - II CHE203 Heat Transfer CHE204 Mass Transfer Operations - I CHE340 Process Equipment and Design	1	Harshad Shah	M, W	09:30 am - 11:00 am
210	CHE441 Process Simulation	3	CHE220 Thermodynamics - I CHE300 Mass Transfer Operations - II CHE301 Heat Transfer CHE310 Chemical Reaction Engineering CHE204 Mass Transfer Operations - I CHE221 Thermodynamics - II	1	Dharamashi Rabari, Sridhar Dalai	S S T T	09:30 am - 11:00 am 11:00 am - 12:30 pm 02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
211	CHY101 Organic Chemistry	3	None	1	Dharmesh Varade	T, Th	11:00 am - 12:30 pm
212	CSC200 Design and Analysis of Algorithms and Data Structures	4	MAT102 Discrete Mathematics OR CSC100 Introduction to Computer Programming	1	Sapan Mankad	M M M, W	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm 08:00 am - 09:30 am
213	CSC201 Computer Organisation	3	ECE209 Digital Design	1		T, Th	05:30 pm - 07:00 pm
214	CSC202 Computer Organisation Lab	1.5	ECE209 Digital Design EVD111 Digital Design Lab	1		S S	09:30 am - 11:00 am 11:00 am - 12:30 pm
215	CSD100 Introduction to Data Science	3	None	1 2	Dinesh Barot, Angira Patel Dinesh Barot, Angira Patel	M, F T, Th	05:30 pm - 07:00 pm 08:00 am - 09:30 am
216	CSD101 Fundamentals of Data Science	3	None	1 2 3 4	Vivek Bhatt, Jaideepsinh Raulji Vivek Bhatt, Jaideepsinh Raulji Vinay Vachharajani, Angira Patel Neha Gadhvi, Kunjal Gajjar	M, F T, Th M, F M, F	08:00 am - 09:30 am 08:00 am - 09:30 am 08:00 am - 09:30 am 05:30 pm - 07:00 pm

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School of Engineering and Applied Science

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
				5	Vinay Vachharajani, Kunjai Gajjar	T, Th	05:30 pm - 07:00 pm
				6	Neha Gadhvi, Shefali Naik	T, Th	05:30 pm - 07:00 pm
217	CSD102 Data Science	3	None	4	Jinal Parikh, Shefali Naik	M, F	05:30 pm - 07:00 pm
218	CSE205 Data Structures	4	CSE100 Fundamentals of Computer Programming CSE101 Object Oriented Programming Lab MAT101 Discrete Mathematics OR MAT101 Discrete Mathematics CSC100 Introduction to Computer Programming	1	Barbara Morawska	M, F Th	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
				2	Barbara Morawska	T, Th T	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
219	CSE310 Advanced Data Structures and Algorithms	3	None	1	Srikrishnan Divakaran	T, Th	11:00 am - 12:30 pm
220	CSE330 Computer Networks	3	CSC100 Introduction to Computer Programming	1	Shashi Prabh	T, Th	09:30 am - 11:00 am
221	CSE331 Computer Networks Lab	1.5	CSC100 Introduction to Computer Programming	1	Jitendra Bhatia	W W	08:00 am - 09:30 am 09:30 am - 11:00 am
				2	Jitendra Bhatia	F F	02:30 pm - 04:00 pm 08:00 am - 09:30 am
				3	Jitendra Bhatia	S S	05:30 pm - 07:00 pm 07:00 pm - 08:30 pm
222	CSE340 Operating Systems	3	EVD210 Computer Organisation	1	Mansukh Savaliya	M, S	08:00 am - 09:30 am
223	CSE341 Operating Systems Lab	1.5	EVD211 Computer Organisation Lab	1	Mansukh Savaliya	T T	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
				2	Mansukh Savaliya	Th Th	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
224	CSE516 Probabilistic Graphical Models	3	MAT202 Probability and Random Processes	1	Dhaval Patel	M F	05:30 pm - 07:00 pm 09:30 am - 11:00 am
225	CSE518 Artificial Intelligence	3	CSC210 Data Structures and Algorithms MAT101 Discrete Mathematics MAT202 Probability and Random				

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School of Engineering and Applied Science

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
			Processes	1	Mehul Raval	M, W	09:30 am - 11:00 am
226	CSE520 Data Analytics and Visualisation	3	CSC250 Database Management Systems CSC100 Introduction to Computer Programming	1	Amit Ganatra	S S	09:30 am - 11:00 am 11:00 am - 12:30 pm
227	CSE540 Cloud Computing	3	CSC330 Computer Networks CSC340 Operating Systems COS201 Data Structures and Algorithms CSC102 Object Oriented Programming	1	Sanjay Chaudhary	T, Th	11:00 am - 12:30 pm
228	CSE560 Models of Computation	3	CSC100 Introduction to Computer Programming MAT101 Discrete Mathematics	1	Ck Bhensdadia	M S	08:00 am - 09:30 am 01:00 pm - 02:30 pm
229	ECE209 Digital Design	4	None	1 2	Pratik Trivedi Pratik Trivedi	T T, Th Th W, F	02:30 pm - 04:00 pm 11:00 am - 12:30 pm 02:30 pm - 04:00 pm 11:00 am - 12:30 pm
230	ECE210 Signals and Systems	3	None	1 2	Ashok Ranade Ashok Ranade	M F M, W	11:00 am - 12:30 pm 09:30 am - 11:00 am 08:00 am - 09:30 am
231	ECE310 Wireless Communications	3	CSP210 Analogue and Digital Communications CSP211 Analogue and Digital Communications Lab MAT200 Linear Algebra MAT202 Probability and Random Processes	1	Dhaval Patel	M, W	11:00 am - 12:30 pm
232	ECE311 Wireless Communications Lab	1.5	MAT200 Linear Algebra CSP210 Analogue and Digital Communications CSP211 Analogue and Digital Communications Lab MAT202 Probability and Random Processes	1 2	Dhaval Patel Dhaval Patel	F F M M	02:30 pm - 04:00 pm 04:00 pm - 05:30 pm 02:30 pm - 04:00 pm 04:00 pm - 05:30 pm
233	ECE500 Information and Coding Theory	3	None	1	Ashok Ranade	T, Th	09:30 am - 11:00 am
234	ENR203 Material Science and Engineering	2		1	Deepak Verma	T, Th	09:30 am - 11:00 am

Timetable - Monsoon Semester 2020
School of Engineering and Applied Science

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
235	ENR204 Mechanics of Rigid Bodies	2		1	Deepak Verma	T, Th	09:30 am - 11:00 am
236	ENR205 Thermodynamics - I	2	None	1	Dharamashi Rabari	T, Th	01:00 pm - 02:30 pm
				2	Dharamashi Rabari	T, Th	05:30 pm - 07:00 pm
237	ENR303 Introduction to Composites	3		1	Sham Gurav	M, F	05:30 pm - 07:00 pm
238	EVD310 VLSI Design	3	EVD210 Computer Organisation EVD220 Embedded System Design	1	Anurag Lakhani	T, Th	01:00 pm - 02:30 pm
239	EVD511 High Performance Computing	3	EVD210 Computer Organisation EVD211 Computer Organisation Lab	1	Anurag Lakhani	W, F	08:00 am - 09:30 am
240	EVD520 Internet of Things	3	EVD220 Embedded System Design EVD221 Embedded System Design Lab	1	Anurag Lakhani	M, W	11:00 am - 12:30 pm
241	HRT221 Conservation and Preservation Science	3	None	1	Aditya Prakash Kanth	T, Th	01:00 pm - 02:30 pm
242	MAT100 Multivariate Calculus	3	None	1	To Be Announced	T, Th	11:00 am - 12:30 pm
243	MAT203 Differential Equations and Linear Algebra	3	None	1	Narayan Padmanabhan	M, W	11:00 am - 12:30 pm
244	MAT204 Linear Algebra	3	MAT100 Calculus and Differential Equations	1	Gaurav Goswami	F	08:00 am - 09:30 am
						S	11:00 am - 12:30 pm
245	MDT420 Industrial Automation	3	MAT100 Calculus and Differential Equations MAT200 Linear Algebra SCS130 Applied Physics	1	Jaina Mehta	T, Th	04:00 pm - 05:30 pm
246	MEC210 Strength of Materials	3	None	1	Deepak Verma	M, W	05:30 pm - 07:00 pm
247	MEC320 Thermal Engineering	3	CHE220 Thermodynamics - I	1	Nitin Banker	M, W	11:00 am - 12:30 pm
248	MEC322 Fluid Machines	4	CHE201 Fluid Mechanics	1	Varadharajan Iyer	M, W, F	09:30 am - 11:00 am
249	MEC330 Computer Aided Design and Manufacturing	3	MEC210 Strength of Materials MDT120 Engineering Graphics MEC230 Design of Machine Elements	1	Varadharajan Iyer	T, Th	11:00 am - 12:30 pm
250	MEC331 Computer Aided Design and Manufacturing Lab	1.5	CSC100 Introduction to Computer Programming MDT120 Engineering Graphics	1	Ujjaval Modi	Th	01:00 pm - 02:30 pm
				2	Ujjaval Modi	Th	02:30 pm - 04:00 pm
						T	01:00 pm - 02:30 pm
						T	02:30 pm - 04:00 pm

Timetable - Monsoon Semester 2020
School of Engineering and Applied Science

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
251	MEC344 Advanced Machining Methods (Unconventional Machining)	3	CHE170 Introduction to Materials Science and Engineering MEC240 Manufacturing Processes	1	Varadharajan Iyer	M, F	01:00 pm - 02:30 pm
252	MEC442 Automobile Engineering	3	MEC320 Thermal Engineering MEC230 Design of Machine Elements	1	Akhand Rai	T, Th	11:00 am - 12:30 pm
253	MEC443 Manufacturing with non-metals	3	MEC410 Material Science and Metallurgy	1	Shashi Prakash	T, Th	09:30 am - 11:00 am
254	MEC450 Dynamics of Machines	3	MEC210 Strength of Materials MEC230 Design of Machine Elements	1	Shashi Prakash	M, W	09:30 am - 11:00 am
255	MEC451 Dynamics of Machines Lab	1.5	MEC210 Strength of Materials	1	Shashi Prakash	T T	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
				2	Shashi Prakash	Th Th	01:00 pm - 02:30 pm 02:30 pm - 04:00 pm
256	PHY711 Introduction to General Relativity	3	None	1	Gaurav Goswami	M, T	04:00 pm - 05:30 pm

Timetable - Monsoon Semester 2020

Undergraduate College

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
257	FDP101 Democracy and Justice	3	None	1	Ritesh Shukla, Gaurav Goswami, Krishna Mehta, Mitaxi Mehta, Nimit Thaker, Pratishtha Pandya	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				2	A. P. Ashwin Kumar, Bhargav Adhvaryu, Maryann Chacko, Noopur Thakur, Vandana Chak, Joseph Van Weelden	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				3	Gaurav Goswami, Krishna Mehta, Mitaxi Mehta, Nimit Thaker, Pratishtha Pandya, Ritesh Shukla	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				4	Noopur Thakur, A. P. Ashwin Kumar, Bhargav Adhvaryu, Joseph Van Weelden, Maryann Chacko, Vandana Chak	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
258	FDP102 Environment and Climate Change	3	None	1	Kunal Mankodi, Ashwin Pande, Deepak Verma, Krishna Bs Swamy, Murari Jha, Tana Trivedi	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				2	Subhash Rajpurohit, Aditya Prakash Kanth, Amrita Bihani, Binny Rawat, Dharmesh Varade, Jaideepsinh Raulji, Sudhir Pandey	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				3	Ashwin Pande, Deepak Verma, Krishna Bs Swamy, Kunal Mankodi, Murari Jha, Tana Trivedi	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm

Timetable - Monsoon Semester 2020

Undergraduate College

Sr.No.	Course	Credits	Prerequisites	Section	Instructors	Days	Time
				4	Dharmesh Varade, Aditya Prakash Kanth, Amrita Bihani, Binny Rawat, Jaideepsinh Raulji, Subhash Rajpurohit, Sudhir Pandey	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
259	FDP104 Water	3	None	1	Chirag Trivedi, Aditi Deo, Ashutosh Kumar, Siddhartha Saxena, Snigdha Khuntia, Vivek Bhatt	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				2	Sanjay Singh, Himani Baxi, Jatin Christie, Maryam Kaveshgar, Saptam Patel, Zalak Shah	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				3	Vivek Bhatt, Aditi Singhal, Aditi Deo, Ashutosh Kumar, Chirag Trivedi, Siddhartha Saxena	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm
				4	Zalak Shah, Himani Baxi, Jatin Christie, Maryam Kaveshgar, Sanjay Singh, Saptam Patel	M, T, W, Th, F M, T, W, Th, F	02:00 pm - 04:30 pm 09:45 am - 12:30 pm

Course Descriptions

Course Descriptions (Monsoon Semester 2020)

The following are the descriptions of the courses offered by each School and Undergraduate College.

Amrut Mody School of Management

COM100 - Elements of Academic Reading and Writing

Credits: 3

This is an elementary reading and writing course in a series of core communication courses offered by the University to aid students' linguistic development. The course is designed to help students read critically and write effectively and to develop in them an awareness of grammar and writing style which will enable them to self-edit their writing. This course will also prepare students for the advanced communication courses offered by the University.

COM101 - Effective Reading and Comprehension Skills

Credits: 3

COM101 is the intermediate level of the university's communication courses designed to promote linguistic and academic development. This is a reading and comprehension course to train students to develop general competence and advanced analytical strategies in reading. This course prepares students to communicate in English at the level required for success in their core courses and beyond graduation.

COM102 - Advanced Writing

Credits: 3

This is an advanced writing course to train students in writing for academic and formal contexts. The modules of the course are designed to result in predefined writing outcomes with separate modules to address the writing requirements of the different Schools.

COM115 - Gender Sensitization

Credits: 3

Gender is often understood as a synonym for 'women' and thus unfortunately doesn't include men or lesbians, gays, transgenders or intersex. Beyond awareness, the course intends to tickle the psyche and conditioning of the participants so as to make them agents of behaviour change - to contribute towards steering society that is more gender- equal and equitable. The course encompasses explorations around the very nature of gender, gender stereotypes, a gendered society and thus, eventually establish a 'felt' need for sensitization. Through a non-didactic approach, the course appeals to the rationale of participants rather than making an emotional plea for creating a more sensitive society.

COM201 - Effective Workplace Communication

Credits: 1.5

Organizations are seen as communicative structures where communication constitutes routine job activities. In this sense, organisations are not merely seen as a place where communication happens, but it exists because employees communicate and create the sense in the existing structure. Also, the idea of the workplace has moved beyond the simple "office space" to "living social networks" that combine work, home and play. Moreover, organisations use their website and social media to communicate with internal and external stakeholders. Viewed, thus, in this context, the course looks at the constitutive view of communication and intends to familiarise students with workplace communications as practised in the corporate world. The course is interdisciplinary and involves the combination of concepts (communication, sociology and computer-mediated technology) into one project.

COM210 - Science Journalism for Impact

Credits: 3

This is a journalism course focused on reporting and writing about climate change and health, for newspapers,

radio, magazines, online sites and social media. Since the journalism industry has become multimedia in nature, students will learn ways to write and use technology to produce powerful print, online and broadcast journalism. The class does not assume any background in journalism. Science and technology have enabled strides toward better health and lifestyles, but daunting threats to the climate, environment and well-being demand more research and public attention. Although scientists influence policy and public perceptions, the news media are the primary way the public learns about complexities and understand successes and failures. By striving for excellence in writing and reporting about climate and health, students will join the public discourse on some of the most crucial issues of the day, help educate the public, and contribute ideas to improving the planet.

COM501 - Corporate Communication

Credits: 1.5

The mature students of MBA are expected to have basic knowledge in corporate communication. However, communication is one of those basic skills, which require constant improvement to suit the changing business environment. To provide the context for the corporate simulation, students have to join "AMCC Ltd" (a virtual company created for the course). From the first day of the course, students are expected to perform various, relevant on-the-job tasks for AMCC Ltd. The course intends to provide the basic skills of communication such as listening, feedback, email writing, proposal writing, interpersonal sensitivity and presentations in a corporate culture context.

COM506 - Culture and Communication

Credits: 1.5

Every environment whether it is social, political, or economical has its own culture. When this environment meets the geographical boundaries of different cities,

regions, countries, etc. a set of culture and its identity is developed. This course looks at the close relationship between culture and the role of communication in imparting it, the points of conflict between the culture and the globalized world, the role of culture in the world of business, etc. with a special focus on India's situation in it.

COM507 - Communication Lab I

Credits: 0.75

You have always tried to be an excellent communicator, and perhaps you communicate reasonably well. But, most often, you are perceived as ineffective and not-so-confident. And then you wonder what it means to be an effective communicator in today's context. Communication Lab will help you to become an effective communicator in the business world. A successful professional in the present context believes in creating change by communicating thoughts effectively. This lab aims to transform you from a good communicator to an effective one. You will also find personal solutions to your unique problems which suit your strengths and approaches. Over the two years of your MBA degree, you will learn various strategies to enhance your speaking abilities. Through hands-on activities in the Communication Lab, you will realise who you are as a person and what is the value of your words and body language. Our activities include group work, role-plays, individual speech, and body language analysis. The emphasis of the Communication Lab is on helping you reflect on your styles and strategies rather than adopting others' traits.

COM701 - Research Writing

Credits: 3

This is a course to train young and early career researchers in the art of research writing. It takes students through the different aspects of academic writing, beginning from abstracts, reviews, research proposals and writing for a popular audience. It also trains students in presentation and oral skills, to equip them to showcase, explain, and argue about their research to a diverse audience, both lay and specialist.

EFB101 - Introduction to Entrepreneurship

Credits: 1.5

This is an undergraduate level course intended to create awareness about basic entrepreneurial skills. It is for an audience that plans to be involved in new-venture creation or take the existing venture further, be it a small business, family business or a turnaround. The focus will be on the formulation and implementation issues that relate to conceptualizing and developing ventures. It is meant to expose the audience to the world of entrepreneurship and trigger entrepreneurial interest. In this way the course will try to achieve twin purposes: generating entrepreneurial interest and to motivate participants to become informed entrepreneurs.

EFB203 - Business Designing and Planning

Credits: 3

This course is about the early stage entrepreneurial journey, from idea to launch. While many students can think of business ideas, they need to assess if the idea is for them and understand how to take action on their ideas. Students go through the business design process of idea generation, elevator pitch, market research, business model, prototyping, market testing, financial analysis and preparation of business plan. Both, technical and methodological aspects of entrepreneurship are covered in this course. Most importantly, with the experience of the process, students will develop key skills of taking initiative, thinking creatively, overcoming fear, handling uncertainty, making decisions, solving problems and working in teams.

EFB205 - Structuring Venture Capital & Entrepreneurial Transactions

Credits: 3

This course will focus on how best to understand legal structures and agreements that serve entrepreneur and investor objectives in venture capital, private equity financing and entrepreneurial transactions. The course will cover essential aspects of founder-shareholder agreements, structures of control and participation and legal framework to negotiate, price and structure capital terms. The course will give you an understanding of

corporate asset protection, confidentiality terms, due-diligence and disclosure requirement, and fundamentals of valuing early stage ventures. The experiential learning component of the course will involve learning the startup process through the lens of investing in social enterprise.

EFB502 - Design Thinking

Credits: 1.5

Design and design thinking are aimed at one primary goal above everything else – improvement of the quality of life. Design is a set of activities and processes to bring about this improvement and beneficial change on their own. Design Thinking is a set of activities and processes to let design happen on its own. It is aimed at making designerly behaviour a very core mindset and bodyset. Design Thinking in the modern context is recognised as a core business activity which is capable of enhancing all activities around it, making them better and more human and consequently profitable as well. Over the years, it has developed as a very robust and ever-evolving combination of design, science, human behaviour and business principles. At the centre of this is the target user for whom systems are built to understand them, empathise with them define their problems and help them solve these problems through strategically targeted design interventions. Ultimately, all business is about the people who invest in it through one or the other level of consumer behaviour. Design Thinking is aimed at giving business thinkers, a very deeply strategic advantage in the market. The proposed course is an introduction to Design Thinking which is delivered through a set of 14 sessions, discussions, and structured assignments that help internalise these basic concepts. Several minor assignments and a major project serve as a vehicle for participative action that is central to the understanding of Design Thinking as applied to imaginative business models while understanding four key aspects – context, intent, recipients of the design and the system involved.

EFB508 - Intellectual Property Rights

Credits: 1.5

Intellectual Property Right is an important part of

organization strategy for organizations ranging from commercial companies to non-profits like education and research institutions. It is also important for individuals who create any original work, be it in scientific, literary or cultural domain. The course will familiarize students on all types of intellectual properties and the legal provisions related to them including registration, protection and legal remedies against infringement. The course will also provide insight on the competitive and strategic advantages of enterprises by using Intellectual Property Rights

EFB511 - Family Business Management and Policies

Credits: 1.5

The predominance of Family Businesses in India is too obvious to bear re-iteration. Although internationally, Family Businesses have received attention from scholars, this area is still in its early days as far as India-specific research is concerned. This course focuses on various issues in Family Business Management, particularly in the Indian context. Beginning with a broad overview of the Socio-historical context of business in India, it goes on to discuss characteristics of family businesses and their peculiarities. The issues discussed in the course are – special characteristics of Family Businesses, the role of professionals in family business, family & business governance, areas of conflict between generations and succession planning.

EFB512 - Succession Planning and Professionalization

Credits: 1.5

The course is directed towards students who will enter into the management of family businesses, either their own family's or someone else's, and students who will do business with family firms, consult to them, mergers and acquisitions, etc. The focus is on small and mid-size firms. It is assumed that the students opting for this course will have some familiarity with the basic issues in Family Business Management. The course deals in some detail with the two most significant areas of concern in Family Business Management (for practitioners and academicians alike) i.e. Professionalising of Family Business and Succession Planning in Family Business.

EFB608 - Intellectual Property Management

Credits: 1.5

This is an advanced course where learners will apply the principles of Intellectual Property Rights and know how to manage various Intellectual Property Rights. The course aims to look at both – creator/innovator/inventor's perspective and the organizational perspective as to how and why to manage the Intellectual Property Rights Portfolio. This course always aims to inform learners about the transmission of the IPR to third parties by way of License or Assignment. Enforcement of IP is also important for any organization which is also part of this course. Thus, this course deals with the IP Management and IP Enforcement Mechanisms

ENV502 - Sustainability and Society

Credits: 3

This course will focus on sustainability and its impact on society. It will begin with a discussion on the various sustainability goals set by the United Nations Environment Program (UNEP), issues relating to climate change, measurement of the goals objectively, and the current challenges facing the world due to lack of sustainability practices globally. The concept of stakeholder impacts as distinguished from shareholders impact for responsible corporations will be examined. Natural capital impacts, which include green-house gas (GHG) emissions, air and water pollution, water use, waste management will be discussed at an introductory level. The costs of action and the costs of inaction on various activities will be evaluated. We would then do a sectoral analysis of energy (consumption, production, renewable energy, electric vehicles), agriculture (sustainable practices, environmental impacts, post-harvest practices, natural farming), water resources and management (scarcity issues, quality issues, purification techniques, usage by various sections of society), waste management (disposition, waste-to-energy, Bio-CNG from waste, plastics), incorporating current practices and innovations. The overall impact on climate change globally and the role an individual and a corporation can play will be examined in some detail. During the course, we would invite speakers who would be experts in their field. We would also do a

case study of 2 companies involved in water and environment issues. While the course would involve lectures, assignments and projects, the objective would be to review Sustainability from a holistic perspective and create a sense of awareness of various issues related to Sustainability from an individual and a societal perspective with the use of many examples of companies involved in solving problems worth solving. The focus will be more on practical examples and less on policy. Given the breadth of the topics, the attempt is to provide an introductory understanding on a broad range of issues, with an opportunity to dive deeper into topics of specific interest for students, outside of the class curriculum (for interested students). Several start-ups solving interesting problems in this space through innovation will be discussed.

The structure of the course will involve lectures, case studies, assignments and a group project.

ENV702 - Climate Change and Cities

Credits: 3

The relationship between cities and climate change mitigation and adaptation is now well established. By 2050 close to 70% of the world population will be living in urban areas across the world. The future increases in the size of the world's urban population are expected to be highly concentrated in just a few countries. Together, India, China and Nigeria will account for 35% of the projected growth of the world's urban population between 2018 and 2050. By 2050, it is projected that India will have added 416 million urban dwellers. As locations of transformative adaptation and deep decarbonisation, cities are key actors in meeting the goals of the Paris agreement and to the implementation of the 2030 Agenda of Sustainable Development. This course addresses concepts at the intersection of climate change and cities especially understanding the key transformations that will enable mitigation and adaptation of climate change at the local level to achieve the 2030 agenda. Through readings and discussions, the course examines factors of greatest concern in reducing emissions and adapting cities to climate change including urban planning and physical systems i.e. energy, infrastructure (water, waste, & sanitation), land-use, transportation, buildings, food systems; political and

social systems (behaviour, environmental justice). And finally study a few case studies to see how cities are mobilizing to face climate change and integrate core considerations into urban planning (governance, innovations, policy, finance).

EPP100 - Microeconomics

Credits: 3

Microeconomics is an introductory undergraduate course aimed at teaching the fundamentals of microeconomics by introducing the students to concepts like supply and demand analysis, elasticity, theory of consumer choice, producer theory, market structure, competition, welfare and public goods. Students will also be introduced to the use of microeconomic applications to real world issues. This course is a core subject across the University undergraduate programs. It is an introductory course aimed at preparing students for understanding advanced economics as well as other related subjects of business and social sciences.

EPP110 - Macroeconomics

Credits: 3

Macroeconomics describes how the economy as a whole functions and policies are formulated. The purpose of the course is to acquaint students with the basic concepts and theories of macroeconomics and orient them towards linkages between various economic indicators.

EPP210 - Money, Banking and Public Finance

Credits: 3

This course offers a systematic analysis of monetary theories and the fiscal system. The course familiarizes students with the functions and operations of money and banking system, their interaction with other macro-economic variables and Indian monetary policy. It covers the functions of central bank and commercial bank and evaluate the performance of banking sector. The course explains fundamentals of public finance, why and how market fails, role of public goods, taxation and expenditure theories. The course will analyze the trend and pattern of India's fiscal policy. Some critical issues of monetary and fiscal policy will be discussed.

EPP280 - Indian Economy: Performance and Policies

Credits: 3

The course introduces students to critical aspects of India's economic performance across all the sectors and over a period of time. It discusses the economic and sectoral growth trajectory of India in the context of various policy announcements. The course shall bring in critical analysis of policies such as economic reforms announcement of 1991, agriculture policies, industrial policies, policy for service sector and trade, policies related to population, employment and poverty etc. The course will also bring the debate around the economic reform package announced during Covid 19. The course shall access the Indian economy data sets for the discussion.

EPP340 - Economics of Human Resources

Credits: 3

This course gives an insight of Education and Health sector of the economy along with the understanding of Labour Market. Apparently, the problems of education and health sector in the context of Indian scenario are the same and both have greater linkage with labour market outcome. These sectors play an integral role in the growth and development of the economy. Through this course, students are made aware about the functioning and policy framework of these sectors of the economy.

EPP341 - Development Economics

Credits: 3

This course aims at developing an in depth understanding of the development and growth discourses that have emerged in the latter part of the 20th century. Bringing together various components and perspectives to development the course weaves in the contemporary policy discourse. The course exposes the students to the discourses in Development Economics.

EPP500 - Microeconomics

Credits: 1.5

This course provides an overview of microeconomic principles and introduces students to economic tools and

analytic approaches used in microeconomics that are important in formulating managerial decisions. This course is a core subject for AMSOM's MBA program.

EPP510 - Macroeconomics

Credits: 1.5

The macroeconomics course examines the aggregate variables of economic systems and understands linkages between them. The course focuses on the behavior and interrelationship between four markets. In brief this course provides and insight of the major economic issues and problems of an economy.

EPP511 - Intermediate Macroeconomics

Credits: 3

The Great Depression of 1930s led to development of the subject macroeconomics, whereas the Global Financial Crisis of 2008 poses several questions on the subject. It is challenging to teach macroeconomics given how textbooks differ from the policy world. For example, textbooks mainly cover positive interest rates whereas interest rates have been negative across several developed economies, something which most macroeconomics textbooks do not even discuss. Likewise, it is taught that high budget deficits lead to higher interest rates but it is seen that developed economies have record low interest rates despite record budget deficits. Another major problem is that traditional macroeconomics pays very little attention to economy's linkage with financial markets. This course tries to bridge these gaps.

EPP543 - Development Economics

Credits: 3

This course aims at developing an in depth understanding of the development and growth discourses that have emerged in the latter part of the 20th century. Bringing together various components and perspectives to development the course weaves in the contemporary policy discourse. The course exposes the students to the discourses in Development Economics.

FAC104 - Tally ERP 9.0

Credits: 2

Tally ERP 9.0 is an elementary level hands on practical training course which equips the students with necessary skills to operate a computerized accounting package. This course covers important features of financial accounting such as voucher entries of various accounting transactions to finalization of accounts, preparing Profit & Loss Account and Balance-sheet as per Schedule – VI, introduce to them basics of inventory management, Budgets and some of the widely used basic Taxation features such as TDS and recently introduced Goods and Service Tax.

FAC112 - Corporate Accounting

Credits: 3

This course in Corporate Accounting, which deals with complex accounting transactions for business operations. The focus of the course is the accounting procedures used to prepare two mandatory financial statements: Income Statement and Balance Sheet as per Companies Act 2013 and rationale behind preparation of Revenue Accounts of General Insurance Companies as per IRDA Act besides the financial statements. The course builds up a strong foundation for the other core accounting courses based on the pure accounting concepts. It is one of the pre requisites of Advanced Corporate Accounting courses as it includes the formats and Notes to Accounts as per schedule III of the companies. It also encompasses the AS-13 Investment Accounting. The practical aspects of current and noncurrent investments with options of variable and fixed scrips will enhance students' understanding of financial investments choices of the companies. It encompasses the valuation of important components of companies' balance sheet; goodwill and shares. This course introduces students to the corporate accounting and the external financial reporting environment. The focus throughout the course is on the preparation of financial statements for public listed & Insurance companies and valuation of important items like Investments, Goodwill and shares.

FAC114 - Financial Accounting

Credits: 3

This course is an introduction to the basic concepts and standards underlying the financial accounting systems. It aims to build upon the important accounting concepts and principles including revenue recognition, inventory, depreciation, and understanding the accounting equation. The course focuses initially on how to record economic events in the accounting records (i.e., bookkeeping and accrual accounting) and how to prepare and interpret the primary financial statements that summarize a firm's economic transactions (i.e., the balance sheet, the income statement, and the statement of cash flows). The course adopts a decision-maker perspective of accounting by emphasizing the relation between accounting data and the underlying economic events that generated them thereby enabling the students to read, understand and analyse financial statements through ratio analysis. The course also explores the areas of financial shenanigans wherein the students will be able to learn how companies use financial statements to disguise economic reality.

FAC115 - Cost Accounting - II

Credits: 3

This course is an extension of Cost Accounting - I wherein the students have developed the foundation to Cost Accounting as a subject, its basic concepts, elements of cost and issues related to them. Cost Accounting - II is an introduction to Cost Accounting as a management tool where emphasis will be placed upon various methods of costing. Different industries follow different methods to establish the cost of their product/services. This varies by the nature of each business. Students will study different methods of costing for Products (undergoing Processes in manufacturing or working on Job order basis) and for Services (like Construction work, Hotel Industry, Hospitals, Transport, IT companies etc) and its application in practice.

FAC121 - Direct Taxes

Credits: 3

Direct taxes have gained significant importance in the Indian economy as it constitutes a major source of revenue to the Government. The course aims to provide an understanding on the Taxation System in India in general and Direct Taxes in specific. The course is

designed to help the students acquaint themselves with the basic knowledge and practical application of the principles and provisions Income-tax Act, 1961. It introduces fundamental concepts under the Act like Previous Year, Assessment Year, Income, Person, Assessee and Residential Status. It includes understanding the Basis of Charge under various Heads of Income- Salary, House property, Capital Gains and Income From Other Sources under the Act and Computation of Total Income of an individual under the provisions of the Act. The course is largely designed to develop a foundation for the students about the importance of studying Income Tax by developing their awareness about the personal income tax aspects of an individual.

FAC123 - Contemporary and Specialised Auditing

Credits: 3

Basic Concepts of Audit and Audit Preparation, Auditing and Assurance Standard issued by ICAI, Internal Control Procedures, Vouching and Verification of financial reports, Audit under The Companies Act, 2013, Audit under GST Act, Audit under CIS Environment, Forensic Audit, Peer Review and Specialised Audit

FAC124 - Fundamentals of GST

Credits: 1.5

GST is one of the biggest policy reforms in post-independent India. It is set to change the method of doing business in India. The GST is set to redefine the political, economic, and commercial policies of India. The course aims to give the insight of GST to the students. The course provides an eliminatory understanding of the law and how it is going to affect the lives of the common man. It also discusses how GST leads to the formalization of Business in India. GST also has an important role in curbing parallel economy in our country. A special focus is made on the impact of GST on SME Sectors, who constitute the backbone of our economy. The impact of GST plays a very important role in decision making. The production, marketing, and financial decision-making process has changed considerably post GST. The Course attempts to brief students about the various aspects of GST which has to

be considered during decision making. The course will also highlight how GST has played a role in reducing red-tapism and corruption in India. It highlights the benefit of GST for improving the ease of doing business in India.

FAC132 - Financial Management - II

Credits: 3

Financial decision making can be divided into three broad categories: (i) Investment Decisions, (ii) Financing Decisions and (iii) Dividend decision. This course is offered with a view to enhance the preliminary conceptual understanding of some of the fundamental tools and techniques used in financial decision making. The subject material is concerned with the theories and practice of investment and financing decisions of a firm. It provides a basis for subsequent integrative management subjects.

FAC133 - Financial Management

Credits: 3

This is an introductory course in finance. It provides an overview of some of the basic principles and theoretical framework leading to sound financial management decisions. The course provides an introduction to the application of finance in one's life and also the financial manager's role in achieving the optimal financial position of the firm. The course aims to provide students with a basic understanding of some of the tools and techniques used in financial decision making. It introduces the students to the utility of finance, its importance and relationships with other fields. It introduces the key concepts of Time Value Of Money and then goes on to illustrate the application of those concepts to various decisions of savings, investment, determining growth rates, determining present and future values, etc., which help us take more efficient savings and investment decisions. The course introduces students to the various techniques of Capital Budgeting for enabling sound decision-making for undertaking long-gestation capital projects. The course introduces the students to the various sources of long-term capital used for financing the firm and attempts to sensitize the students to the strategic and cost considerations to be considered while planning to

raise funds from a particular source. The course also introduces the concepts of cost of capital both for specific sources like bonds, preference shares, and equity and the overall cost of capital. The course introduces the students to the concepts of working capital and how to estimate needs of working capital.

FAC214 - Management Accounting

Credits: 3

This is an advanced level course which equips the students with necessary skills in Management Accounting. This course covers important techniques of cost accounting like Standard Costing, Cost-volume-profit Analysis, Budgeting and Activity Based Costing. It includes the rationale for variances due to difference in standard and actual output. It encompasses decision-making based on the above mentioned techniques. It includes important aspects like cash management through preparation of cash budgets. It covers implications of applying Activity Based Costing against Traditional Costing method. With these skills, the students will be able to understand and provide valuable, relevant and important cost and management information to the management, which helps them in the planning, controlling and decision-making.

FAC221 - Tax Planning for Non Corporate Entities

Credits: 3

The Course covers provisions of Income Tax Act, 1961 under the different heads of income. It provides knowledge about tax computations of various Non-Corporate assessees. It also includes various aspects to plan tax liability of Individual, HUF, Firm, Co-operative Society and Trusts.

FAC222 - Corporate Tax Planning

Credits: 3

The course is designed to introduce the concept of Tax Planning and understand its importance through the judicious application of the various provisions of the Income Tax Act, 1961. The students will be taught various provisions of the income tax law to plan tax liability of Corporate Entities. Further, they will be

taught consequences of tax avoidance and tax evasion. The students will learn the determination of total income for companies with hints for tax planning under the respective provisions of the Income Tax Act. It also includes special provisions of Tax Planning for non-residents. It also gives insight on latest judicial pronouncements on Taxation Laws. It will discuss tax planning aspects for major business decisions like amalgamation, demerger, etc.

FAC241 - Banking

Credits: 3

Banking is considered as the lifeline of any modern economy. It is the core financial service, and plays a vital role in the success / failure of an economy. A large number of changes have happened globally as well as in Indian economy that have forced banks to change the ways they do their business. Since the course participants do not have any formal background of financial services and especially banking, the course aims to provide them with a learning opportunity to build foundation level understanding of the financial system and specifically the banking sector.

FAC244 - Financial Markets

Credits: 3

This is a specialisation course which builds upon the financial knowledge that students obtained in earlier courses on Financial Management. It aims to provide the students an introduction to various financial markets like: capital, money and foreign exchange, which the student may be required to access as an individual or as part of an organisation. It introduces the students to the utility of these markets, the products available in these markets for investing and the role of the various market participants.

FAC331 - Corporate Finance

Credits: 3

This course introduces students to the basic concepts and methods that financial managers use to make effective investing and financing decisions, and explore the ways in which value is created and measured. The course lays emphasis on specific finance concepts vis-a-vis the risk

and return relation, capital budgeting decision-analysis tools, dividend policy, and provides an overview of leasing.

FAC332 - Security Analysis and Portfolio Management

Credits: 3

This course gives Practical knowledge and real life experience of Security Analysis & Portfolio management. It is the mixture of Conceptual Theory & Practical Problems. The idea of the course is to question the Rational thinking man model and look at business from a multidisciplinary way.

FAC512 - Financial Accounting

Credits: 1.5

Financial accounting is the language of business. It is the means by which an enterprise's financial situation is reported and communicated. The course focuses on the integration of accounting framework and business analysis in the forecasts of financial statements, which means applying accounting framework in analyzing business activities and the predictions of full sets of financial statements. The course deals with understanding the framework of the Financial Statements of the Companies and its Analysis. The course will enhance students' knowledge from recording entries to actual reporting. The course focuses on the fact that how key business transactions are accounted for, and how these transactions appear in the financial statements. The course will help the students to better understand the meaning of financial statement information and how to use financial statement data for analysis. The course forges a unique path in financial statement analysis through Commonsize statement Analysis and ratio analysis technique. The students shall understand the real life reporting of manufacturing and service companies through a project on Annual report of Nifty fifty companies

FAC513 - Managerial Accounting

Credits: 1.5

This course aims to equip the students to perform managerial roles with the help of accounting information

in order to manage an organization. It is designed to enable students to extract, use and modify the costs information for the purpose of managerial decisions. It will help them to understand various types of cost terminology, cost behavior and cost systems as a part of managerial accounting. It would help them to understand preparation of cost statement for product and service manufacturing organisations. The course emphasizes on the use of Managerial Accounting in planning, decision-making and control. To emphasize the planning aspects, types of budgets and the relevance of their preparation will be covered. Technique of activity based costing will be introduced to understand it as a tool for strategic planning and operations control. To develop the foundation for managerial decision making, concepts of cost-volume-profit analysis and its impact on the functioning of an organization, and short-term and long-term decisions will be explained. Cost control techniques through standard costing and variance analysis have also been incorporated to enable the students to understand the importance of cost control and its implications on decision making. The course is thus largely designed to enhance the students learning in management accounting to enable them apply it in real life situations.

FAC534 - Advanced Corporate Finance

Credits: 3

The objective of this course is to help students develop further understanding of theories of Corporate Finance and their use for solving financial problems. The approach taken is that of financial strategy. The major topics covered include wealth creation and the enhancement of shareholder value, corporate valuation, corporate capital investments, capital structure and corporate payout policy, leasing and hire purchase decisions and analysis of risk in capital investment decisions. Identification and Analysis of Real Options in investment decisions is also dealt with.

FAC541 - Financial Markets and Institutions

Credits: 3

Financial markets and financial institutions facilitate the flow of funds from suppliers of funds to the demander of

the funds. The course provides a conceptual framework that can be used to understand why markets exist. The focus here is on money market and the capital market in terms of the securities traded and intermediaries involved. Financial services constitute an important segment of the financial system. The developments in the realm of financial services sector of an economy have a profound effect on its banking and financial system. Indeed, presence of a strong financial services sector is considered an essential adjunct for the development of an economy.

FAC633 - Security Analysis and Portfolio Management

Credits: 3

This course offers an introduction to the study of investments in a portfolio context. In doing so, it exposes students to the breadth of investment alternatives and portfolio construction to meet certain investment objectives. Different individuals or institutions will have differing investment objectives. The course will start with a discussion of the ways in which objectives vary, and the resulting portfolio implications. After a brief review of the various markets and their structures we will turn to one of the cornerstones of modern finance - "Modern Portfolio Theory". This is an emphasis on the importance of constructing optimal portfolios, in which diversification is used to achieve a target objective. It holds that capital should be allocated among the major asset groups in order to arrive at a balance of risk and return that matches the circumstances and objectives of the investor. Only after this allocation does individual security selection come into play. We will then go to a review of asset pricing theory, with a brief stop at equity valuation, and bond mathematics. In doing so, students would be exposed to different methods of valuation namely DCF, Relative Valuation and Economic Value Added in the context of deriving the intrinsic value of a share. This is followed by an overview of equity and bond portfolio management strategies and a review of prevailing portfolio performance measures. The course concludes with the question of performance evaluation - how do we measure success as compared to the original objectives? While a predominant proportion of the course contents fall within the contours of "Efficient Market

Hypothesis (EMH)", the course also acclimatizes students on the trajectory of discourse on market efficiency – EMH to Behavioral Finance to Adaptive Market Hypothesis (AMH).

FAC636 - Financial Econometrics

Credits: 3

The purpose of this course is to acclimatize students to time series modelling and its various applications in financial markets. Competency in Time Series Modelling (Analysis) is a prerequisite for students aspiring to take up Investment Banking Roles such as Quantitative Researcher that supports in-house trading platforms. Further, students who aspire to work for Rating Agencies such as CRISIL would also find this course immensely helpful.

HRT212 - Heritage: Concepts and Practices

Credits: 3

This course will introduce heritage concepts and different fields of heritage practices. Through lectures, field trips, discussion, and multiple assignments, students will be exposed various case scenarios and encouraged to explore the notion of heritage as well as to delve into the conceptual process of managing such heritage.

HRT511 - Heritage and Conservation Discourses

Credits: 3

Heritage is a broad subject that draws from various disciplinary discourses including anthropology, architecture, art, culture, development, ecology, environment, forestry, geography, history, natural resources, traditional arts and crafts, urban design and planning, wildlife and so on. However, a general perception of heritage usually borrows from the historic and physical or structural examples of heritage only. Moreover, it is widely perceived that the objective of heritage conservation and management is to 'preserve' heritage in its purity or in historic form, and that heritage is always about pride and monumental. Conservation, on the other hand, is a technical process of ensuring the longevity of a tangible heritage by ensuring that the values and significance are retained while providing a

continuity of existence of the particular heritage. However, in everyday professional practice the terminologies of heritage and conservation have been used interchangeably. In doing so, the idea of conservation usually has been the 'taken for granted' assumption than the broader implications of heritage management (the discourse of conservation today has also recognized end emphasized on the need of 'management' in terms of site management, visitors management etc.) These conventional notions of heritage and conservation need to be revisited prior to delving into the broader concepts of heritage management. Similarly, the prevalent focus on built or monumental heritage needs to be broadened to grasp the full potential of heritage management as a field of practice. It's widespread relevance is due to the fact that the notion of heritage revolves around environment, everyday life, historic processes, and human development as well as ecological sustainability, among others. Hence, it is necessary to have awareness and some knowledge of heritage discourses prior to going deeper into the issues and processes of heritage management. This course is a foundational course designed to challenge the pre-conceived notion of heritage (if there are) among the Masters level students about the over-arching theme of heritage and corresponding practice areas. Exposing the students to diverse areas of heritage management is an essential process in the first semester to provide an overview of the domain of heritage management. Based on this, they will learn the different paths one can take in their career, and also to recognize the interrelationship of different areas to each other. From management perspective, it is very important to keep in mind the larger picture while one may actually be working within one or two areas of heritage. This course becomes the first level of course that will be the stepping stone for the second semester's full courses on heritage management.

HRT512 - Conservation Principles and Processes

Credits: 1.5

This course will introduce key concepts and processes of conservation science. This will be expanding on to the heritage discourses but focusing mostly on the material science aspects within heritage management.

HRT531 - Heritage Documentation

Credits: 3

This course provides an overview and approaches of documentation of various heritage resources, preparing inventories and archiving – starting from architectural and objects documentation to intangible cultural heritage resources documentation, and subsequently moves towards a systematic inventories and database of heritage elements and assets.

HRT532 - Anthropological and Sociological Inquiries on Heritage

Credits: 1.5

This course is designed to introduce students to the social anthropological/sociological approaches to heritage. Drawing upon seminal empirical and theoretical works, this course delineates the disciplinary understanding of tangible and intangible aspects of heritage. It also equips the students to use techniques of anthropology to explore embedded community dimensions of heritage. For the most part, the course is organized as a fieldwork course and requires students to make presentations involving discussion and evaluation of methodological strategies and skills adopted in specific field studies/situations.

HRT542 - Heritage Laws and Governance

Credits: 1.5

Heritage managers should be aware of the overall policy framework under which various heritage conservation and management projects/programmes can be executed, as well as the laws that regulates the ownership, rights and responsibilities of heritage conservation and protection. The knowledge of relevant policy and laws will also enable heritage activists and practitioners to initiate different movements that may trigger effective heritage management systems in the country. The course will provide an overview of governance and laws to understand where the laws and policies on heritage come from. Building upon basic understanding of governance, the course will then explore the laws and policy on heritage in India. The course will familiarise the students to the fundamentals of how the heritage laws are conceptualized and enacted. In addition to the

regular lectures and discussion, the course will also feature a few cases that lead to heritage management initiatives following law-suits being filed within the existing policy and laws. The course will equip future heritage professionals with a good in-sight and strategic understanding of the heritage related laws and policy.

HRT601 - Pre - Thesis

Credits: 3

This is a guided studies course to prepare students for undertaking thesis work in the winter break and winter semester. The course will be run in a seminar format in which basics of thesis research and writing will be introduced, and students will be guided to develop their thesis proposal and preparatory research on the same through the semester.

INS511 - Perspective on Market Research Sector

Credits: 1

This elective course on the market research industry is intended to provide the participants an overview of this industry: its size, structure, growth, key players, segmentation, trends, challenges, and opportunities. The market research industry delivers forward-looking information and insights to help companies take effective marketing strategy decisions. Market research impacts all aspects of a client's business, across all industry sectors. Hence, an understanding of the market research industry will prepare future users and participants of the industry understand what drives this industry, what the constraints are, how the industry is evolving and how to maximise value when selling or using market research.

MAT142 - Introductory Calculus

Credits: 3

This course is one of the core requirements for the Bachelor's programmes in Economics and Business. Students of Bachelor's programmes of other disciplines may take it to fulfill the GER. Calculus is an important mathematical discipline that deals with change and motion. It is extremely useful not only in physics, and engineering, but also in many other diverse areas including, biological sciences, business and economics.

This course is a comprehensive introduction to the elementary concepts of calculus namely, Limits, Derivatives and Integrals with some of their applications, including related rates, linearization and differentials, optimization and numerical algorithms like Newton's method. The applications are drawn from many fields and include related rates, linearization and differentials, optimization and numerical algorithms like Newton's method. The course is aimed at first-year undergraduate students of any field. A familiarity with high-school mathematics up to 10th grade is assumed.

MAT211 - Maths for Management

Credits: 3

This course enables the students to develop a conceptual understanding of mathematical techniques currently used in various fields of business and management. The topics covered include linear equations in linear algebra, matrix algebra, determinants, vector spaces, Eigen values and Eigen vectors, applications of differential and integral calculus and other relevant mathematical concepts as applied to business, economics, management and other related fields in general and various functional areas of management in specific.

MGT105 - History of Indian Business

Credits: 3

An orientation and curiosity of studying Indian and global business history. Business history has an important role to play in developing and clarifying our understanding of the evolution of business – be it industries, individual companies, business families and groups amidst the social and economic environment in which it sustains. While quantitative methodologies and the need for big data drive research in Management studies, this course demonstrates how far business history is a truly global field, even while studying it from a national framework. To draw in-depth, fine-grained comparisons across different regions of the country, examining strategies of firms, states, and business associations, students stand to gain new perspectives into their own businesses while participating in current debates in adjacent fields such as political economy and global businesses. This course on the history of Indian

Business is multidisciplinary in its nature, where history and business are conjointly examined as important tools for understanding human nature and its past endeavors, throwing light on the present and future in many ways for the young managers/entrepreneurs. By following a project based learning pedagogy, this course attempts at enabling students to understand history as contemporary, everyday lived experience.

MGT111 - Identity and Behaviour

Credits: 3

This course begins with a discussion on how individual and group identities are created and maintained and in turn how it affects behavior. Several classical and neo-classical theories from the disciplines of psychology and social psychology would be discussed. The understanding of these concepts and theories would facilitate the understanding of groups and organisations in future courses. It would equip the students to develop people skills and enable them to deal with issues such as improving productivity, job satisfaction, motivation, learning etc. in organisations. The course would promote self-awareness and interpersonal awareness and students' ability to work in groups and in organizational settings. The course would focus on concepts which facilitate the understanding of the 'Self' and 'Identity' followed by its implication on human behaviour.

MGT112 - Organisation Processes

Credits: 3

This course is a spin-off to the Identity and Behaviour course taught in previous semesters. People working in organizations get affected not just by who they are, but also by who they are working with and aspects like their teams, leaders, organizational culture, change and communication. The course shifts away from the individual level to the group, and organizational levels of behavior drawing on concepts and practices from the field of Organizational Behavior (OB). This course provides a basic understanding of your own and others' behavior, particularly in teams. It enhances your ability to communicate and work effectively with others. Organization requires effective management of people and a clear understanding of human behavior and social

processes. Managers need to have a good understanding both of themselves and of those whom they will lead. The prior knowledge of individuals' perceptions, attitudes, and behavior will enable you to choose appropriate leadership styles and managerial practices to increase organization effectiveness and positive human outcomes.

MGT136 - Indian Legal System

Credits: 1.5

Day-to-day living and Business operations have to be carried out within the legal framework of a country. This premise requires a student to attain working knowledge about the legal systems and some laws which impact the everyday life. The course aims at meeting this requirement. The course begins with introduction to the Indian Legal System, proceeds to discuss the important Rights of every Indian and finally explains selected commercial laws. The topics discussed throughout the course aim to ensure personal and professional well being of the students from the legal context. Students should expect to deal with quite a few court cases over the semester and in some cases present them in writing.

MGT165 - Business and Organizational Ethics

Credits: 1.5

Modern businesses are not evaluated only on the basis of returns they generate for their investors, but also through the impact the business makes on its stakeholders. This course is designed with the understanding that an ethical business increases its endurance and there by creates long term returns for its stakeholders. On one hand the course aims to understand the evolutionary theories of Ethics on the other it raises the ethical issues faced in day-to-day management. The purpose of the course is to equip the learner to face the ethical dilemma in everyday managerial situations and overcome them with fair and just techniques. Thus the course discusses practices and processes through which management students can build a business for the long run. In order to achieve this objective, the course is delivered with greater emphasis on cases and hands-on activities.

MGT221 - Strategic Human Resource Management

Credits: 3

Given globalization, the growing integration of the world economy in to one marketplace, corporations are subject to unprecedented levels of competition. The critical source of competitive advantage for these corporations is not their physical assets, but their people. It is people, not companies, who innovate, create new products, make decisions, develop and implement business plans, penetrate new markets, and serve clients and customers. While developing effective business strategy is important to organizational success, the capacity to implement any given business strategy is completely dependent on a corporation's people. The Strategic Human Resource Management module provides students with a critical understanding of the theories, principles, historical trends, current issues and practices relevant to human resource management strategy in organisations. This will support the development of subject specific and key transferable skills necessary for employment in roles which require the effective management of both human and knowledge capital within the organisation, therefore extending beyond purely human resource management roles. By exploring the shifting of roles from process manager or administrator to strategic business advisor and partner, students will understand the unique strategic positioning of contemporary human resource management and the subsequent demands placed on resources working in this area

MGT232 - Business Laws and Secretarial Practice

Credits: 3

This is an advanced level course which is a comprehensive study of the laws related to various corporate entities. This course will enable the students to further pursue profession related to CA, CS or Legal Practitioner. This course is equipped to develop a sound understanding of the theoretical and practical aspects of Partnership, Partnership with Limited Liability, Companies Act, and the Insolvency Code. The course also emphasizes on developing an ability to understand, interpret and draft various deeds and documents relevant to the Partnership and Companies Act. It will also develop in the students' sound knowledge by transactions using the Bills of Exchange, Cheque, Promissory Notes, and various other technologically advanced ways of

handling monetary transactions in this digital age. As novice graduates, the students will gain broad insights into legal aspects in various forms of business.

MGT233 - Trade and Labour Laws

Credits: 3

India has made considerable economic progress since its independence. Thus, the Indian Government has also initiated legislative reforms in the area of economic laws. The course in its first phase sets out the economic laws affecting the organized domestic set up of businesses in India via IDRA, Trade and Competition Act, PMLA etc. The second phase proceeds ahead with the laws concerning unorganized domestic market through Shop and Establishment Act & finally phasing out with a brief learning of the legal aspects of the world economy via foreign trade policy and FEMA. Along side the course focuses on the laws regulating employment covering various important legislation relating to Industries and Factories and other wage payment laws.

MGT333 - Competitive Strategy

Credits: 1.5

Organizations from inception are driven by organizational level objectives also known as strategic goals of the organization. Strategies are designed to achieve these strategic goals and this planning is a prerogative only of the top-level managers. They have the knowledge of the business environment, both internal and external and are able to connect the activities of the various functions of the business to achieve organizational goals. This course aims to create an understanding of how organizational level goals are decided and how competitive strategies are formulated after conducting situational analysis.

MGT504 - Behavioural Lab I

Credits: 0.75

Life is shaped by how one builds a personal brand and seeks happiness. However, modules of most business schools miss out lessons on building personal brands or pursuits of happiness. Therefore, to address this recurrent need; the MBA programme of Ahmedabad University

will run a 2-year-long Behavioural Lab that will make students experience the self-team-society dynamics and the resulting happiness. This lab will use different pedagogical tools which are supposed to coach every participant about how to become a positive, well-equipped, and balanced leader.

MGT505 - Problem Solving for Social Change

Credits: 1

The corporate sector is supposed to play the role of a change agent in the civil society at the local and the global levels. In fact, the organised business sectors are seen as problem-solving institutions of social change. The Companies Act 2013 specifically demands greater participation of the business sector to solve social and environmental problems. However, the business community all over the world is struggling with a crucial question. Why do so many social problems continue to remain present, despite the mandatory participation of the corporate world? This situation calls for individuals who are not only aware of the issues but also solve them. The Problem-solving for Social Change intends to fill this gap by teaching skills, theories and strategies necessary for preparing management students. The course will cover topics such as problem-solving philanthropy and roles of non-profit organisations in solving social problems, outcome-oriented philanthropy, impact investing, CEO-activism. The course will encourage students to think whether giving to the poor is morally essential or optional. Students will work in groups to apply these concepts and tools to analyse local problems of their choice and interest.

MGT511 - Organisational Behaviour

Credits: 1.5

Today's organizations are vibrant, dynamic and more organic than what they have traditionally been. They are more like socio-technical systems wherein the focus is not only on the outputs but also on various social, behavioural and people aspects of how these outputs are achieved. The study of human behaviour at work is very important today since human behaviour influences and shape the outlook, processes, structure, culture, interactions and outcomes of these organizations at

individual, groups and inter-group levels. The course on OB will provide a platform to understand various theoretical and practical aspects of human behaviour at work. The course will enable students to understand and manage various organizational processes like conflict management, decision making, inter-personal relationships, power & politics, motivation, group dynamics and team building. The course will use cases, simulations, practical examples to provide an experiential learning platform to all students.

MGT513 - Leadership

Credits: 1.5

leader. It would aim to develop various leadership skills among the participants for tomorrow's challenges. The main aim of this course will be to make students understand the situations in which one is able to exhibit different leadership skills. The course would provide an experiential learning platform to the students of a) Understanding the practice of leadership in business and other context; and b) the leadership skills and readiness they have to become an effective leader. The course would provide feedback to the students on their leadership activities through self-assessment as well as feedback from peers and instructor.

MGT521 - Human Resource Management

Credits: 1.5

With the rapidly changing technological, socio-economic and politico – legal environment and the trend towards globalization of business and industry, effective management of human resources has become a very challenging job. The fact cannot be denied that human element is at the centre stage in all economic activities. No organization can think of viability of operations and effectiveness without the efficient utilization of Human Resources. This requires the present day managers to be deeply concerned with the performance of human resource management functions. The Subject therefore is purely designed to focus on various theoretical and practical aspects of Human Resource Management. The course covers Introductory topic on Human Resource Management, Human Resource Planning, Job Analysis, Staffing of employees, Performance Management &

Performance Appraisal, Compensation topics, Legal & Industrial relations, Strategic Human Resource Management, Change Management & OD, Human Resource Development, Future of Human Resource Management & related HR topics

MGT522 - Strategic Human Resource Management

Credits: 2

Human resource competency stock of a company is one of the most valued, non-tradable assets which could be used for creating a sustainable competitive advantage. This course examines the role of HRM in business viability and relative performance. It considers the potential of HRM to enhance organizational flexibility and help build human capital for overall organizational effectiveness. It examines HRM in dynamic and complex contexts and discusses practical ways of improving strategic HR planning in firms.

MGT523 - Organizational Development

Credits: 2

today's businesses are operating, it has become imperative for them to bring in continuous and desirable changes in their products, services, operations and many times even their culture and vision. Businesses are vying to find newer and better ways to manage their resources in the present dynamic environment. Organization Development is a handy tool that enables organizations to bring in desirable planned change. This course aims to bring out comprehensively the basic principles of OD theory and practice, its history, and how one can use several interventions at several unit levels (individual, group, inter-group and organization) to facilitate the process of planned change in an organization. The course also aims to develop new learning and skills in the areas of observation, problem solving and decision making among the students.

MGT524 - Dark Side of Organisation

Credits: 1.5

Organisations were created to achieve targets by people working towards a single goal, but in reality it is tough to achieve. Human behavior leads to multiple negative

outcomes at organizational units of individuals, teams and groups. The way people may behave in organizations may not be always beneficial. Dark side behaviors typically lead to negative outcomes. Those who engage in these negative behaviors generally are aware that their actions can cause harm to others, their employer, and/or to them; hence, the instigator usually has intent. It is essential for tomorrow's managers to understand what are these behaviors how some times they may lead to functional outcomes, sometimes it may lead to negative outcomes as well. It is essential that we understand these behaviors, as well as control, prevent, mitigate, or ameliorate their occurrences. I. Aim of the course is to understand what might be source of such behaviors in organizations and is it possible to mitigate such behaviors in organizational units.

MGT532 - Labour Laws

Credits: 2

Given globalization, the growing integration of the world economy into one marketplace, corporations are subject to unprecedented levels of competition. The critical source of competitive advantage for these corporations is not their physical assets, but their people. It is people, not companies, who innovate, create new products, make decisions, develop and implement business plans, penetrate new markets, and serve clients and customers. Workplace issues have become one of the fastest-growing areas of state and federal law. Employment-related lawsuits filed in courts have tripled in volume in the past decade, and now account for a tenth of all civil cases. Many state courts have experienced a similar burgeoning of their employment law caseloads. This course examines this diverse, rewarding, and rapidly evolving area of legal side of employment by considering the diverse array of laws and institutions that regulate the employment relationship. The substantive focus of the course is on laws that affect employees in unionized and non-unionized settings, such as protections against dismissal without cause, wage and hour restrictions, workplace privacy, covenants not to compete, and mandatory arbitration of employment disputes and how it stand up in global scenario as well. IREL tries to focus on the statutory, judicial, and administrative law governing the collective organization of workers and the

interaction between such collective organizations and employers. The course will introduce students to the basics of traditional labor law and will explore how labor law is evolving in response both to innovative forms of labor management relations and to changes in the composition of the world labor force. The class will focus on status of privately negotiated processes for organizing and recognizing unions, state and local approaches to labor law innovation, and new forms of workplace organization. We will also explore the intersection of labor and immigration law, union participation in the political process, and emerging forms of worker organizing that rely not on the National Labor Relations Act but on other statutory regimes

MGT534 - Corporate Governance

Credits: 1.5

Key Words: Business Organization, Shareholder Rights, Fiduciary Duties of Board of Directors and Management, Stakeholders, Risk Management, Governance, Insider Trading, Sustainability, Comparative and Foreign Law. This course explores the role of legal controls on business organizations with emphasis on the control of managers in publicly held companies. The course will cover basic fiduciary law, shareholder voting, conflict of interest rules, the allocation of power between managers and shareholders, director's responsibilities, defensivetactics, takeover bid and proxy contests, corporate combinations, control shifts, insider trading, corporate fraud, corporate social responsibility, and securities regulation. The issues that may be considered include the difference between the governance problems of public companies with or without a controlling shareholder, sales of control blocks, corporate freezeouts, executive pay, self dealing transactions, director independence, and dual-class companies. Course examines certain relevant laws in core foreign law jurisdictions. Course covers aspects of law of torts on product liability. The law of agency, partnership, and privately held corporations, to highlight the special nature of private companies in comparison with the publicly held corporation. The emphasis throughout is on the functional analysis of legal rules of governance as a set of constraints on corporate actors. Students will learn to use the law to manage risk, deploy resources and

maximize value by analyzing cases, statutes, pleadings, documents and contracts.

MGT541 - Business Strategy

Credits: 3

This course captures the various pillars of strategic decision making in any business. Firms have choices to make if they are to survive and prosper. Those which are strategic include: how to create value, the selection of goals, the choice of products and services to offer; the design and configuration of policies determining how the firm positions itself to compete in product-markets (i.e., competitive strategy); the choice of an appropriate level of scope and diversity; the different options in terms of directions and methods of growth - including competition. The course also covers the role and impact of technology on modern-day businesses, viz. how technology impacts organizations and how tech-based businesses strategize. Later, we will learn about opportunity identification with a Blue Ocean Strategy approach, before moving onto the last module of the course which focuses on strategy implementation.

MGT543 - Corporate Strategy : Formulation & Implementation

Credits: 1.5

This course deals with developing an understanding of ways in which organizations manage multiple lines of businesses. The aim is to understand the nuances of managing diverse businesses and how such organizations develop and deploy technology based resources. Strategic choices related to directions and methods of growth are identified through concepts and frameworks that are rooted in the theory of strategy and management, which have proved valuable in practice. The course ends with what managers often describe as their greatest challenge - implementing strategy and how a leader should attempt seamless corporate strategy implementation. Through a seamless integration of technology, the course focuses on the thinking, skills and actions required by management for the development, communication and implementation of strategic organizational choices towards organizational success.

MGT552 - Fundamentals of Human Resource Management

Credits: 1.5

Whether managing a facility or heritage site, working for SHGs or NGOs, Consulting for Heritage Management, or being a consultant or entrepreneur – all pursuits require effective working with and through people. This course is designed as an introduction to a few fundamental principles that can be used to understand and manage behaviour at work. These principles focus on individual behaviour (e.g. motivation), as well as group behaviour (e.g. conflict, team dynamics, decision-making and leadership). Further, it also introduces the basic process of people management in the work organization. This process includes activities such as human resource planning, recruitment and selection, performance management, and management of separations.

MGT562 - Business Ethics

Credits: 1.5

Success or failure of modern day businesses cannot be measured solely by the existence or adequacy of profits. The means of profit are as important as the profit itself. These businesses, which primarily operate for economic benefits of their owners, must also take into account the interests of other stakeholders. The course deals with ethical considerations and dilemmas that affect managerial decisions and equips the learners with methods to deal with such situations. The course is delivered in two parts; foundations of ethics and managerial dilemmas in operational areas. The first part introduces foundational concepts and theories of ethics that provide different perspectives to ethical concerns and dilemmas. The second half deals with specific ethical concerns arising in functional areas of management and ways to resolve these conflicts in managerial decision-making.

MGT621 - Selection and Testing

Credits: 1.5

It requires more than mere instincts to hire the right candidate. Yet most managers solely use their instincts

while making hiring decision. Given that poor hiring can be extremely costly on the part of the management, it is essential for managers to appreciate the intricacies involved in hiring. This course is targeted towards honing up essential managerial skills for taking right kind of recruitment and selection decision.

MGT626 - Sustainable Human Resource Management

Credits: 1.5

The course Sustainable HRM focuses on human resource functions in large companies in a globalized world from a sustainability perspective. The approach focuses on the role of HRM and leadership in contributing to corporate sustainability to achieve triple bottom-line or economic, social and environmental outcomes of sustainable development. This course is based on research and insights from diverse fields, including corporate sustainability and corporate social responsibility, strategic HRM, sustainable HRM, Green HRM, sustainable HRM measurements and reporting.

MGT628 - People analytics

Credits: 2

People analytics is a data-driven approach to managing people at work. For the first time in history, business leaders can make decisions about their people based on deep analysis of data rather than the traditional methods of personal relationships, decision making based on experience, and risk avoidance. In this brand new course, we will explore the state-of-the-art techniques used to recruit and retain great people, and demonstrate how these techniques are used at cutting-edge companies. We will learn how data and sophisticated analysis is brought to bear on people-related issues, such as recruiting, performance evaluation, leadership, hiring and promotion, job design, compensation, and collaboration.

MGT642 - Strategies for Firms in Emerging Markets

Credits: 1.5

This elective course looks at Emerging Markets and firms therein. Often firms in Emerging markets have different environmental contexts, resources and capabilities and hence different strategy development as

compared to developed market firms. The course “Strategy for Firms in Emerging Markets” is specifically designed to introduce students to these market contexts and to the relevant strategies of firms operating in emerging markets, from the lenses of small local firms, local giants, how the local firms can globalize and how firms from foreign markets can enter the emerging markets.

MKT102 - Marketing Management - II

Credits: 3

Marketing Management–II course shall build upon the fundamentals of Marketing learnt in Marketing Management-I and shall provide students with a more practical view of Marketing Management as a whole. This course in addition constructs a foundation for those students who intend to take specialization marketing courses in the coming years.

MKT103 - Marketing Management

Credits: 3

Marketing Management course aims to introduce students to the basics of marketing management discipline. This course is meant for students of all disciplines, including but not limited to arts, commerce, business, sciences, engineering who are interested in understanding marketing from academic as well as practical perspective. This course is specifically very important for those who want to do specialization in marketing management in coming years.

MKT312 - Essentials of Marketing Research

Credits: 3

This course will provide a comprehensive introduction to marketing research, and discuss key concepts, processes, and techniques, as well as their applications in marketing. This course will allow students to gain an appreciation of the breadth and depth of the subject and its significance for a business enterprise, whether a start-up or an established company. This course would be sensitive to the needs of undergraduate students with plenty of self-help for students and provide an exceptionally solid foundation to understand marketing research with a

managerial orientation.

MKT324 - Retail Management

Credits: 3

Retail Management is a specialization elective course aimed at teaching the fundamentals of retailing by introducing the students to concepts like category management, merchandising, retail supply chain management, retail formats, store loyalty as well as retail pricing and marketing. The course brings to light the changing dynamics of the retail industry with a focus on the Indian context. Students will also be exposed to the adoption of retail management across different countries especially American and European perspective.

MKT341 - Marketing Strategy for Consumer

Behaviour

Credits: 3

The modern day marketing has become consumer need centric. Marketing strategists across the globe use consumer insights for launching and modifying their product or services. This course takes into account the key factors such as consumer motivation, perception, learning and their personality. This course also provides the students with information on key marketing processes such as consumer decision making, culture's influence, consumer research and basis of market segmentation. This course and its content would help students to understand the logic behind marketing strategies which are based on the consumer/s behavior.

MKT352 - Advertising: Crafting Contagious Content

Credits: 3

This is an undergraduate level course focusing on the principles of advertising from content design, creativity and business value creation perspective. It covers advertising and media concepts, persuasion, psychology, composition, copywriting, typography, and brand communication. The course will cover advertising in India and fundamentals of form, function, and consumer behavior. Persuasion techniques such as motivation, organising messages, communicating with images, tapping into connotations, associations, and context will be covered. Throughout, the emphasis will be on

creativity in internal as well as external communication that creates value for a profit or a non-profit entity.

MKT504 - Understanding Markets and Consumers

Credits: 1.5

This course has adapted a new way of teaching learning i.e. Engagement And Application Based Learning and Education. The course encourages students to engage in the classroom through participation based on pre-readings and team projects. It provides them with advise, space and resources to discuss and apply all the marketing concepts. The students learn nuances of marketing management such as marketing environment, needs, wants and demands, understanding consumer behavior, segmentation, targeting and positioning and introduction to marketing mix. The course brings students to think critically about the marketing domain as a whole and its impact on business and society.

MKT611 - Marketing Research

Credits: 3

This course introduces the students to the field of marketing research and provides an understanding as to how it can help managers in making better marketing decisions. It aims to provide students with a background in research methods, to introduce them to the issues related to conducting marketing research, data analysis, and methods of evaluation related to marketing. Knowledge of these topics will enable students to both implement and evaluate marketing research during their professional careers.

MKT621 - Services Marketing

Credits: 3

Marketing and/or selling a product is more straightforward than marketing a service due to the difference of tangibility vs. intangibility and all elements that come attached with it. An effective campaign that is well executed and which is linked around what it can do for its customers can help sell a product but marketing a service requires a different approach. Marketing a service requires marketing the "you" the provider and your team's ability to get the service done / delivered well.

Marketing great customer service, tangibilising the intangibles offers a unique and exciting challenge which is different from giving product specifications on a brochure. When you're selling a product, it might feel like marketing comes easy. You create a campaign around what a product can do for its customers, execute it, and the product sells itself. But when you run a service-based business, selling the service requires a different approach. Instead of marketing product features, you have to market yourself and your team's ability to get the job done. Marketing a sunny disposition and a history of great customer service is a bit tougher than talking about product specifications which are earlier to depict, explain and understand.

MKT631 - Sales and Distribution Management

Credits: 3

The course is designed as a detailed investigation of the sales management process. It balances the practical and academic while providing a foundation for understanding the sales management function or building a marketing career. Issues covered include the sales process, recruiting, compensation, training and sales force design.

MKT632 - Rural Marketing - An Indian Perspective

Credits: 3

This course is based on the view that rural marketing is a two-way process. Firstly, it covers nuances of rural markets: the processes involved; how are they similar to, or different from, urban markets. The course covers the scope of rural market in India, prevailing environment, and the behaviour of rural consumers. It covers rural marketing research, rural market segmentation and targeting. It details the product strategy, pricing considerations, typicality and the nature of rural distribution system, communication strategies, and services marketing applicable in rural markets. Secondly, rural marketing is not only about urban companies expanding to rural areas; or MNCs pitching to rural consumers. It also involves rural produce – agricultural and non-agricultural – being marketed to urban India. The course looks at ways to reform and empower villages by efficiencies in agricultural distribution and marketing. The course provides a well-rounded view of

developmental aspects of rural marketing: developing marketing strategies for rural producers, emerging role of digital communication technologies in rural markets, sales force management in rural marketing, and governmental initiatives to promote more efficient marketing of rural produce to urban consumers.

MKT642 - Interdisciplinary Approach To Consumer Understanding

Credits: 3

This course will help students understand consumers at a deeper level, using interdisciplinary concepts and methods. Understanding consumer behaviour needs an interdisciplinary approach – concepts and methods from several disciplines like neuromarketing, cognitive psychology, behavioural economics, anthropology, sociology, and more. Consumers often make irrational choices. Decisions are based on emotions and unconscious motivations – not only on rational logic. Consumer choices are implicit not explicit. Consumers cannot often express their motivations in response to traditional marketing research surveys. This is because consumers either won't say why they made some choices (as the answers might not sound logical and reasonable) or they can't say (as choices were made at an unconscious level and they themselves do not know why they choose a brand). The course will draw on the works of several neuroscientists and behavioural economists like Daniel Kahneman, Richard Thaler, and Dan Ariely. We will use behavioural economics experiments ('Nudge' as Richard Thaler calls it) to see how subtle interventions influence brand choices. We will explore how ethnography – a method of immersing oneself in consumer lives (used in anthropology and sociology) – can help us get under the skin of the consumer and observe the role of products and brands in consumer life, as lived and not as claimed in surveys.

MKT653 - Digital Marketing

Credits: 3

The digital marketing course aims to cover the what, why, and how of major current digital marketing approaches including online listening and monitoring, search engine optimization, search ads, email marketing,

and participating in social media. The course is woven around three key messages viz. How to establish habits for keeping up to date on emerging digital technologies relevant to business and to marketing, how to rise to the challenge of developing strategy to guide tactics and how to identify data sources to define and track performance indicators for a firm's digital marketing activities. The course aims to familiarise participants with key aspects of digital marketing. The participant is expected to gain a beginners and working knowledge in the digital marketing domain and develop an understanding of the framework on how online marketing operates.

MUS101 - Inside Indian Music

Credits: 3

“What is Indian? What is Music?” Such questions intrigue us often. This course tries to address these questions by exploring and interrogating the existing genres of Indian Music like Tribal-Folk, Classical-Art, Popular, Devotional and Fusion Music. It focuses on key principles of music that formulate these genres and connect them to each other, the genres which eventually weave the complex and diverse fabric called 'Indian Music'. The course also tries to understand the relationship of culture and music through the dynamics of above mentioned genres.

MUS103 - Culturing the Voice

Credits: 3

This course is designed for aspiring Voice and Speech Professionals. All those who wish to use their voice professionally in their respective fields and careers will find intensive practical sessions in Voice Culture Course useful, which will include Yoga-PraNayaam, Breath Exercises and Special Training in Voice and Speech Building. Along with the Readings of English Play and Poetry Recitation, Readings in Hindi, Sanskrit and in some regional languages also will be encouraged during this course. Voice Acting is also one of the important components of this course.

RES601 - Quantitative Research Methods

Credits: 1.5

This course introduces some of the key basics of inferential statistics such as hypothesis testing, analysis of variance, and regression analysis.

RES602 - Qualitative Research Methods

Credits: 3

This course aims to introduce participants to various strands of qualitative research in organization management and heritage studies. Qualitative methodologies are about negotiating complex organizational realities on the ground. They are also about the possibility of accessing fractions of knowledge and making sense of these fractions to see how actors, their subjectivities and cultures are being assembled in everyday actions. Whether you want to interpret human behaviour (be it employee, consumer or any other actor) or you wish to investigate the impact of practices (management practices, marketing practices, cultural and political practices etc.), or you plan to make meanings out of observations and text, an understanding of qualitative research can enable you to understand these and help solve managerial and social problems. In this course, the objective is to form a conceptual knowledge structure for qualitative research and learn and get hands-on experience on various qualitative research techniques. The role of focused group interviews, observations, in-depth interviews, case-based research etc. will be discussed. Topics dealt with as part of the course will be: a) Ontological and epistemological assumptions of qualitative research b) Selecting a qualitative research method and designing qualitative research: site selection, sampling, and data collection c) Data analysis, interpretation and validation: coding procedures, triangulation, case analysis and cross-case comparison d) Computer Assisted Qualitative Data Analysis through Software (CAQDAS) e) Writing and publishing qualitative research

STA100 - Probability

Credits: 1.5

This course provides an introduction to probability. Topics covered include: Fundamental Concepts and Properties of Probability Conditional Probability; Independence; Bayes' Theorem Random

Variables; Discrete, Joint and Conditional Distributions; Expectation and its Properties

STA101 - Introductory Statistics

Credits: 3

This course provides an introduction to the concepts of Descriptive Statistics, Probability and Probability Distributions, Sampling and estimation, Hypothesis Testing, ANOVA, Correlation and Regression with specific reference to their applications to business, economics and management.

TOD206 - Industrial Statistics

Credits: 3

This course concentrates on practical skills and enables students to broaden their theoretical and practical knowledge for Multiple linear regression modeling and Statistical process control. The students are taught to understand the information critically, statistically analyze it to make decisions, and state the conclusions. In doing so, the underlying assumptions of the regression model and the limitations of the regression modeling are emphasized. This covers: Introduction and Basic terminology of Multiple linear regression analysis, Multiple linear regression Model with qualitative and quantitative variables, Estimation and Prediction Process for Multiple Regression: Multiple linear Regression Equation, Coefficient of Multiple Determination, Adjusted Coefficient of Multiple Determination, Standard error of an estimate and prediction interval of an estimate, Statistical significance of Multiple linear regression Model and its partial regression Coefficients, Confidence interval, Identification of Outliers, Multicollinearity, Auto-correlation, Line Fit plots, Residual plots, Normal Probability Plots, and step-wise Regression. This course is also concerned with maintaining and improving the quality of goods and services. It involves a broad range of statistical process control tools. This course focuses on the use of statistical thinking to control variability in manufacturing processes or service processes for creating high-quality goods and services. It also focuses on developing skills for modeling data and designing experiments that can lead to improvements in performance and reductions in

variability. This covers: Introduction and Basic terminology of Statistical process Control, Causes of Variations in Quality: Chance causes and Assignable causes, Three-Sigma Control Limits, Specification Limits & Tolerance Limits, Construction of various Variable Control Charts: Individual, Moving Range, Mean, Range, Standard deviations, Construction of various Attribute Control charts: Defects charts (Number of defects and Proportionate defects) and Rejects charts (Number of defectives and Proportionate defectives), Patterns in Control charts, Use of control charts in establishing and maintaining specifications/tolerances.

TOD211 - Quantitative Methods for Business

Credits: 3

This course discusses various quantitative methods for optimum utilization of constraint resources in various spans of human life viz. Industry, business, commerce, management, etc. The course develops some standard operations research techniques including linear programming, transportation, assignment, replacement and Network problems. At the end, one will also learn the use of Microsoft Excel 2013 to make intelligent business decisions for the optimization.

TOD501 - Introductory Statistics

Credits: 1.5

The course introduces basic statistical tools and techniques and its applications to several areas of research and practice in public policy and management. The sessions are designed for hands-on problem solving manually and then using statistical software.

TOD503 - Simulation Modeling

Credits: 3

Use of mathematical models helps in optimization and decision making for discrete or continuous stochastic processes. The course aims to enable students to identify real world problems appropriate for simulation, and to help them develop skills to conceptualize simulation models.

TOD504 - Mathematical Methods for Economics

Credits: 3

Contemporary graduate level studies in economics are incomplete without the skills to apply mathematical tools to represent and analyse economic theory as well as to interpret and find solutions to the economic problems. Before students can use these mathematical techniques at advanced level, it is essential that they are well acquainted with the concepts and tools of mathematics, ranging from two-variable single equation models to multi-variate simultaneous equation systems and set theory to optimisation techniques. This course covers such range of topics, and prepares the students for further application of mathematical models in all fields of Economics.

TOD511 - Decision Science

Credits: 3

The course aims to introduce the students to the concepts and applications of Decision Science and Operations Research. Further, the course presents the principles and techniques for solving decision-making problems in the industry using mathematical and Operations Research models using spreadsheet modeling based approach. The techniques include decision analysis, linear programming, waiting line models/queuing theory, simulation, project scheduling and network models.

TOD521 - Production and Operations Management

Credits: 3

This course will offer a broad survey of the role of the operations function along with concepts and techniques in managing operations, with particular emphasis on a number of major operations management issues that can significantly affect the competitive position of a firm in the marketplace.

TOD522 - Supply Chain and Logistics Management

Credits: 1.5

Today's firms need to be more dynamic to remain competitive. It is important to not just focus on their own competencies but also create a synchronized supply chain to ensure all value adding competencies of the suppliers are transferred to the customers. At the same time, it is

important that the supply chain is linked to the overall strategy of the firm and closely linked with achievement of the strategic goals. The course focuses on equipping participants with the basic requisite knowledge to ensure supply chain efficiency & efficacy.

TOD523 - Services Operations Management

Credits: 1.5

Services constitute major part of many economies in the world including India and its share is increasing day by day. This course is an introduction to the concepts, principles, problems, and practices of successful service operations management. Topics covered include: the role of services in the economy, strategic positioning and internet strategies, environmental strategies, new service development process, managing service expectations, front-office & back-office interface, service quality, yield management, waiting time management, and site selection.

TOD526 - Project Management

Credits: 2

In today's world, the discipline of Project Management is powerful tool that will help organizations navigate their way effectively through times of change and uncertainty. An organization with a project culture is one that knows where it is going, is focused on results and has a professional team who knows what is expected of them. Professionals & organizations working or desiring to start a new venture in diverse fields require an understanding and insight of Project Management concepts and methods. Projects are vital and often businesses and various functions start with this management operation. Initial activities within a function also start with projects, for eg. Launching a new product in the market or implementing ERP within the organisation. The products are developed at lab scale, tried at pilot scale and produced at plant scale. To handle all these activities later in their careers, management students have to learn Project Management techniques and through planning and control techniques to execute projects.

TOD531 - Introduction to Analytics

Credits: 1.5

This course introduces an approach for students to learn visualization and different ways of presenting meaningful data using Excel and 'R'. It would help them to develop skills on how to analyze, interpret data and solve industry problems. The course will be using excel and R as a base for analyzing data. This experiential approach will train students with end to end analytics process, starting from collecting data, cleaning and analyzing data, presenting data visually to interpreting it for meaningful actions. Students would learn basics of R language in the second half of the course. It would cover basic data manipulation and graphical presentation of data using packages of R. Knowledge of any programming language can be of a help to learn R.

UWSS102 - City as Text

Credits: 3

In human history, the city has existed both as an idea and a place. Also, cities often develop around very different purposes. For instance, some cities become the space for national and international political activities, and some become the hub for business and trade. Other cities are primarily seen as sites for tourism and leisure. However, apart from these images, a city is also subject to continuous change—such as political, cultural, social and religious—which affect the lifestyle of city-dwellers and the image of a city from time to time. Viewed, thus, in the above perspective, City as Text course broadens the idea of a text as a landscape which includes cultural artifacts, institutions, and street cultures, socio-political and economic discourses. This course is interdisciplinary (provides economic perspective, cultural landscape analysis, political and social analysis, and historical background) and would mainly focus on urban formal and informal spaces such as commercial, residential and public. Learning processes in this course are characterized in three main ways: •Firstly, intellectual development – understanding the specific socio-economic, cultural, and political factors that have shaped the city and the integration of theoretical and practical concepts. The urban environment enables a variety of different modes of learning, including guided student discovery and interpretation. •Secondly, technical

development - students have the opportunity to hone observation and analytical skills, and competence in information processing and research, as they are brought into direct first-hand contact with the object of their investigation. And as an arena of encounter and interaction, the urban environment facilitates processes of personal development. •Finally, with the help of digital humanities pedagogy, students will be able to study the intersection between technology and the human experience using the digital tool. This pedagogy will help students to learn the nuances of computing methods to do humanities research.

School of Arts and Sciences

BCS102 - Biochemistry I

Credits: 3

Biochemistry I, involves the study of the molecular composition of living cells, the organization of biological molecules within the cell, and the structure and function of these biological molecules. The biological macromolecules which this course focuses on are proteins, polysaccharides, and polynucleic acids (DNA and RNA), including the monomeric units of these macromolecules. We will also study the structure and function of lipids, a fourth important type of biological molecule and a major component of cell membranes. Other topics to be examined in the course include the kinetics and catalytic mechanisms of enzymes.

BIO 250 - Brain and Behaviour

Credits: 3

This course on brain and behaviour is primarily aimed at satisfying a core requirement for the psychology programme. This is the biological psychology core. It is aimed at second-year students who have no biology background beyond basic school biology. The required background will be provided as additional study material in the first two weeks of class. While psychology students are the main audience, the course serves as an introduction to neuroscience for the non-biologist and biologist alike. Thus, it is offered through the biological and life sciences programme, and will additionally serve as a campus-wide general education requirement (GER)

in biology. Brain and Behaviour explores the physiological basis for psychological processes. Broadly this is the link between brain (the biological substrate) and certain functions of the brain. The course will cover innate and motivated behaviours, including sensation, motion, reproductive behaviours, perception, emotions, cognition, learning, memory, and language. Although our focus will be the “human brain” other species, especially rodents and non-human primates, will be considered for comparison. The course will provide enough knowledge of biological mechanisms, with an emphasis on neural and endocrine function, as they apply to psychology and the mind-brain connection. Through this understanding, and through an understanding of various imbalances in physiology, genetics, and biological development, students will gain an understanding of the neural mechanisms underlying normal behaviour and some of its abnormalities.

BIO101 - Introductory Biology

Credits: 3

Biology is the basic science for studying anything about life and living organisms. Biology word is derived from the Greek word bios means life and logos means knowledge. The study of biology incorporates everything imaginable related to the life on Earth. It focuses on details regarding the entire planet or it may be very specific and study microscopic structures such as bacteria or DNA. The living world comprises of diversity of animals, plants and microbes. All organisms are well adapted to the environmental changes (pressure, temperature, humidity) and anthropogenic changes. The course provides an overview of cellular biology, genetics and development of organisms. The course will address Origin of life and Evolution, Cell Biology, Classification, Genetics and Molecular Biology.

BIO200 - Human Physiology

Credits: 3

This is an introductory undergraduate course aimed at teaching the fundamentals of human physiology by introducing the students to the different organs and organ systems of the body. Students learn the important organ systems of the body and are also fostered to correlate the

functioning of different organ systems with the anatomy as well as diseased conditions. This course is aimed at preparing the students for critical understanding of the human body and correlates their learning with the molecular biology and cell biology courses in the later semesters.

BIO-203 - Biochemistry and Genetics Practicals

Credits: 3

Biochemistry •Paper Chromatography of plants •TL Chromatography of biomolecules •Qualitative estimation of carbohydrates •Qualitative estimation of proteins and other biomolecules •Spectrophotometric estimation of Nucleic acids •Spectrophotometric estimation of proteins and biomolecules Genetics •Study of Mendelian Inheritance and gene interactions (Non-Mendelian Inheritance) using suitable examples. •Study of various stages of mitosis using cytological preparation of Onion root tips. •Study of Human Karyotypes (normal and abnormal). •Chromosome Banding •Transduction •Conjugation.

BIO220 - Cell Biology

Credits: 3

Cell Biology is a mid-level undergraduate course aimed at deciphering advance knowledge to the students about the cellular organelles. This course will introduce the different theories about the origin of life and gradually move deep towards developing holistic understanding of the biology of the cells. The students will learn about the cell membrane structure and the importance of different cellular organelles. The students will also gain current knowledge about the cell cycle and its regulation and will be imparted the current knowledge about the signal transduction pathways. This is a core course in the DBLS's iMSc program which is aimed at preparing the students for critical understanding of the biology of the cell. This course will enable the students to gain advance understanding about the different cellular processes and will build upon the foundation of the molecular biology course which they have studied in the earlier semester. Going forward, this course will also lay strong foundation for the proper understanding of certain advance level courses like developmental biology and

omic technologies in the future semesters.

BIO300 - Animal Biotechnology

Credits: 3

Laboratory requirements for animal cell culture: Sterile handling area. Sterilization of different materials used in animal cell culture, Aseptic concepts. Instrumentation and equipment for animal cell culture. Animal cell culture media and reagents, culture of mammalian cells: primary culture, adherent and suspension culture, secondary culture. Continuous cell lines, established cell line cultures, Characteristics of cells in culture: Contact inhibition, anchorage dependence, cell-cell communication etc. Common cell culture contaminants. Preservation of cell lines. Cell senescence; cell and tissue response to trophic factors. Transfection and transformation of cells. Principles and methods of hybridoma technology. Production and characterization of monoclonal antibodies and their application in animal health. Transgenics: Animal cloning basic concept, artificial insemination, super ovulation, in vitro fertilization, culture of embryos, gene knock out technology and animal models for human genetic disorders. Homologous recombination in mammalian cells. Gene transfer methods in Animals – Microinjection, viral and non-viral methods. The Cre-Lox recombination system as a tool in transgenic engineering. Three dimensional culture, organ culture, tissue engineering. Introduction to stem cells, types, identification, characterization and development of stem cells. Commercial applications of cell culture, application of cell culture technology in production of vaccines and pharmaceutical proteins. Application of transgenic animals in life science research.

BIO301 - Cell Biology and Bioinformatics

Credits: 6

Databases Molecular docking Primer designing Homology modelling Mitosis phases (from onion root tips) DNA double stranded break detection using flow cytometer Micronucleus assay Comet assay Trypan blue assay Revival, passaging, trypsinization and cryopreservation of cell lines Introduction to animal cell culture techniques

BIO310 - Genetics

Credits: 3

This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and how does it affect the different allelic interactions, as well as its applications in various fields of biological sciences like Epigenetics and Cancer biology. Upon completion, students should be able to recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles.

BIO500 - Recombinant DNA Technology

Credits: 3

This course will provide an insight to the application and interpretation of high-throughput molecular biology methods used to produce high-volume biological data using genomics, transcriptomic, proteomics, and metabolomics, which will allow to analyze the components of a living organism in their entirety and provide new insights into the complexities of organism function. The applications of these technologies will allow the thoughtful experimental design, data collection, analysis and interpretation. This course will provide theoretical bases to properties and applications of versatile DNA modifying enzymes, cloning strategies, vector types, host genotype specificities for selection and screening of recombinants and/or recombinant transformants. The knowledge gained can be applied to a range of disciplines in biology, from genetics, disease biology, biomedicine, agriculture and fisheries.

BIO501 - Advanced Molecular Biology Practical

Credits: 9

Restriction digestion of vector (gel analysis) Ligation and insert of DNA PCR amplification of gene and analysis by agarose gel electrophoresis Transformation in E.coli DH5?. Screening of recombinants. Transformation of recombinant plasmid in E.coli for protein expression SDS-PAGE of expressed protein Detection of expressed protein using Western blot RNA isolation by TRIZOL method Preparation of cDNA

Estimation of glucose using conventional methods. Estimation of total lipids by colorimetric methods. Quantitative estimation of Ninhydrin.

BIO540 - Nano-biotechnology

Credits: 3

This course has been divided into following five sections.. (1) Fundamentals of Nanoscience and Nanotechnology- Introduction, Definition and Classification and Historical Evolution of Nanotechnology. Physical, Chemical and Optical properties of Nanomaterials. Introduction to 1D, 2D and 3D nanomaterials, concept of Colloids, Nanocrystals, Nanomaterials, Nano-complexes, Gold Nanorods, Gold Nanotriangles, polymeric nanoparticles, liposomes, Micelles, Reverse Micelles, emulsions, Carbon based nanomaterials and other nanostructures and related properties. Brief description about synthesis methods, growth and stabilization. (2) Nanomaterial Characterization Techniques - UV-vis spectroscopy, X-Ray Diffraction, FTIR Spectroscopy, Transmission and Scanning Electron microscopy, Fluorescence Microscopy. (Emphasis to data analysis). (3) Biomedical Applications of Nanomaterials- Bio-inspired and biomimetic nanomaterials, Bio-nanoelectronics such as electrical manipulation of DNA on metal surfaces and DNA-gold nanoconjugates. Lab-on-chip devices and microfluidics devices. Strategies for Nanomaterial Surface modification with biomolecules. Nanomaterial-Cell interaction, protein corona. (4) Cancer Nanotechnology - Imaging with reference to cell surface receptor targeting strategies, Lipid and polymer based nanoparticles for drug delivery, passive and active targeting strategies for cancer cells/tissues, Inorganic particles for drug and gene delivery, anti-bacterial, anti-viral and anti-fungal nanomaterials and activity evaluation methods. Hyperthermia with respect to gold and magnetic nanoparticles, and Theranostics, Nanomaterials as transfection agents. (5) Safety Assessment of Nanomaterials - General methods for estimation of cytotoxicity (MTT, LDH, NRU and Trypan blue exclusion assay) and genotoxicity (COMET assay, chromosome damage assay and micro-nucleus formation) of nanomaterials. Nanomaterial stability in biologically relevant media. Generation of reactive oxygen and

nitrogen species (DCF-DA method). Methods to assess nanomaterial internalization and co-localization in cytoplasm.

BIO543 - Developmental Biology

Credits: 3

How does an entire organism develop from a single cell? This is the question that the course will try to answer. The course will cover organism development starting from the zygote, embryonic development, tissue specification & organogenesis, concept of stem cells as well as developmental genetics. This is an advanced course that builds on basic cell biology and genetics courses.

BIO544 - Cancer Biology

Credits: 3

What happens when cells lose regulatory control over growth, differentiation & function? The result is cancer. This course will cover the mechanisms of tumor formation, classification of tumors, pathways involved in tumorigenesis & the relationship between ageing & cancer. Abstract: Cancer is a disease thought to be induced by a combination of genetics, lifestyle & environment. Despite billions of dollars spent on cancer research every year we are still far from an universal cure for cancer. However as a result of this research our understanding of cancer has improved tremendously & we are able to treat many tumors quite successfully. This understanding has also led to a better understanding of normal cellular processes of growth & differentiation in many cases. This course will introduce you to basic mechanisms of tumorigenesis, expose you to some success stories in treating cancer & sensitize you to the heterogeneity of the disease we call cancer.

BIO546 - Human Protozoan Parasites

Credits: 3

Human Protozoan Parasites is a mid-level undergraduate course aimed at teaching the concepts of parasitology with reference to the human protozoan parasites having medical importance. In this course the students will learn the general biology, life cycles, modes of transmission,

epidemiology and pathogenesis of major parasites affecting global human health. The students will be briefed about the host parasite interaction in general and then they will be introduced to the biology of some human protozoan parasites. This course also has a component of research article presentation and summarization of research article in the field of parasitology which will accelerate the learning value from this course. The research papers should not be more than 5 years old and should have been published in a peer reviewed journal. This is an elective course in the iMSc Life Science program which is aimed at preparing the students for critical understanding of human protozoan parasites and their interactions with humans. This course is designed for those who have interest in microbiology and will also enable the students to associate their learning with immunology and molecular biology.

BIO553 - Animal Behaviour

Credits: 3

Do you want to understand how and why animals behave the way they do, and how we test hypotheses about behaviour scientifically? This course provides an introduction to the complexities of animal behaviour, and how it is studied. Students will explore the various behaviours animals adopt in order to meet the challenges of their daily lives. We begin with how animals learn and communicate with each other, then move on to discuss how they find food, avoid predators, choose their mates, and rear their offspring. This course is aimed at anyone looking to broaden their understanding of animal behaviour beyond nature documentaries or a typical high school education. No previous knowledge is required, only curiosity and enthusiasm for the subject.

BIO554 - Forensic Biotechnology

Credits: 3

Forensic Biotechnology is an elective course designed at teaching the application of biological sciences in the field of forensic investigation process using molecular biology techniques. This course covers the Introduction to Forensic Science, cutting-edge development of forensic biotechnology, DNA fingerprinting its ethics, rules and forensic aspect for identification purposes, single

nucleotide polymorphisms, ancestry, and phenotypic markers. In this course, the students would also get acquainted with various basic and latest molecular biology techniques that are being used for DNA profiling. This is an advanced level course aimed at preparing the students for better understanding of the DNA profiling, certification and its importance into the Indian Judiciary System.

BIO600 - Evolutionary Biology

Credits: 3

Dobzhansky (1973) famously argued that “nothing in biology makes sense except in the light of evolution”. Evolutionary Biology is the study of the changes in life forms over time - changes that have occurred over millions of years as well as those that have occurred over just a few decades. In this course, we will look at the various mechanisms of evolution, how these mechanisms work, and how change is measured. This course will begin by reviewing the evolutionary concepts of selection and speciation, phylogenetics and history of life. We will then learn natural selection and adaptation, evolutionary processes, and genes-genomes-phenotypes. The course will wrap up with a look at the evolution and modern society. At the end of this course, students will have a better understanding of the evolution of life. Also, this course will prepare students for future study and research in macroevolution, microevolution, genetics, behavioral biology, evolutionary medicine, and computational biology.

BIO780 - Thesis Proposal Writing

Credits: 4

NA

COM 211 - Introduction to Critical Thinking and Academic Writing

Credits: 3

This is the first of a set of two courses that will be taken by all students enrolling for a Diploma (30 credits) or Certificate (15 credits) in Critical Thinking and the Liberal Arts. COM 211 will be open to 2nd and 3rd year students. The materials and assignments for this course

will be pitched at a slightly lower level than for COM 311. Critical thinking skills help us evaluate the information/social world we encounter carefully. This is especially pertinent for our times since we are bombarded with all kinds of information and misinformation, and further, feel obliged to respond immediately but intelligently. From phishing calls that ask for sensitive financial information to the recent government circular that implied that a COVID vaccine would be ready by independence day, the world we inhabit today requires us to be critical. This course teaches how to critique constructively. It will enable learners to develop tools and techniques with which to examine the increasingly complex and at times elusive information that now reaches us every day. The careful evaluation of information requires that we do not take what is given at obvious face value. Instead, we ask questions of situations, texts, issues, institutions, and people including ourselves. Accordingly, in this course, we will practice asking questions as we 1) read/view/listen to information and 2) express ideas, such that we learn to identify unstated assumptions and beliefs. Since academic writing is based on this premise of careful evaluation of evidence, the course also introduces students to some of the basic mechanics of academic writing, specifically, identification of sources, accurate summarising of arguments including their limitations, and citation.

COM 311 - Introduction to Critical Thinking and Academic Writing

Credits: 3

This is the first of a set of two courses that will be taken by all students enrolling for a Diploma (30 credits) or Certificate (15 credits) in Critical Thinking and the Liberal Arts. Critical thinking skills help us evaluate the information/social world we encounter carefully. This is especially pertinent for our times since we are bombarded with all kinds of information and misinformation, and further, feel obliged to respond immediately but intelligently. From phishing calls that ask for sensitive financial information to the recent government circular that implied that a COVID vaccine would be ready by independence day, the world we inhabit today requires us to be critical. This course

teaches how to critique constructively. It will enable learners to develop tools and techniques with which to examine the increasingly complex and at times elusive information that now reaches us every day. The careful evaluation of information requires that we do not take what is given at obvious face value. Instead, we ask questions of situations, texts, issues, institutions, and people including ourselves. Accordingly, in this course, we will practice asking questions as we 1) read/view/listen to information and 2) express ideas, such that we learn to identify unstated assumptions and beliefs. Since academic writing is based on this premise of careful evaluation of evidence, the course also introduces students to some of the basic mechanics of academic writing, specifically, identification of sources, accurate summarising of arguments including their limitations, and citation.

ECO505 - Indian Economic Development

Credits: 3

This course introduces students to some important empirical problems, theoretical controversies, and policy debates related to India's economic development. By helping students identify both the historical continuities and the unique challenges of the contemporary moment, this course provides a strong contextual grounding for Masters students to understand the complexities of the Indian economy in the 21st century. The course proceeds chronologically, with the first module devoted to India's economic history before 1950. The second module examines empirical patterns in aggregate economic indicators at the national level from 1950 onwards, and associated policy debates. The subsequent modules focus on debates on development policies targeted towards particular sectors of the Indian economy (agriculture, manufacturing, finance, healthcare, and information technology).

ECO640 - Empirical Research Methods in Economics

Credits: 3

The course teaches the theory, methods and applications of Causal Inference for Empirical Research. The course equips students in Economics with the necessary tools apply their research ideas to data. The tools are however

not specific to economics and are useful for causal inference in any field.

FRE101 - Introduction to French I

Credits: 3

This elementary French language course aims to equip new learners with the ability to use French for 'everyday' purposes. It aims to expose students to aspects of French culture and history. As an introductory course it aims to engender an appreciation for the language and its culture(s). Students are expected undertake daily practice by revising 1-2 hours a week outside of class.

GER101 - Introduction to German I

Credits: 3

The elementary German language course aims to equip new learners with the ability to use German for 'everyday' purposes. It aims to expose students to aspects of German culture, and history. As an introductory course it aims to engender an appreciation for the language and its culture(s). This is a four credit course. Students are expected undertake daily practice outside of class for at least 30 minutes.

HST101 - Ahmedabad as a Gateway to the World

Credits: 3

The city of Ahmedabad has been at the crossroads of major historical currents. A key commercial centre of western India, Ahmedabad was in the vanguard of industrialisation in modern India. It was a gateway to the sea routes of the Indian Ocean via the Arabian Sea, home to influences from West Asia as well as peninsular South Asia. In 1700 AD, it was, by some estimates, the sixth most populous city in the world.[1] Today it continues to be one of the most populated cities in India, a key node of national politics as well as business, and emblematic of the opportunities and challenges before contemporary Indian society wherein modernist development paradigms have been superimposed on traditional social structures. This course will help students understand the city as an arena for economic activities (industry, trade and commerce, and informal work), mass politics, culture, and global engagement over the centuries. It will

also examine the causes and consequences of conflicts over material and symbolic resources, which have been key to the social organisation of the city. Through a combination of field visits, lectures, discussions, and projects, the course encourages students to analyse these processes in Ahmedabad. Through these experiences, students will receive an introduction to disciplinary concepts and theories that will be built upon systematically by later courses in the student's chosen major. 'Ahmedabad as a Gateway to the World' is an introductory core course for all undergraduate students opting to major either in History or in Social and Political Sciences. [1]According to the Financial Times. See <https://www.youtube.com/watch?v=pMs5xapBewM&t=5s>.

HST115 - India 1/ The Birth of Civilizations in the Indian Subcontinent

Credits: 3

This course introduces ancient Indian history by focusing on early civilisations from the emergence of Harappa and Vedic to the cultural developments during the Gupta Empire period (600 CE). It discusses the economic, social and cultural developments for three millennia beginning from 2600 BCE. The course familiarises the students with some of key events and processes such as the emergence and decline of the Harappa Civilisation, debates surrounding the migration and settlements of the Indo-Aryan speakers, economic transformation of the central Ganga valley, cultural and religious churnings related to Buddhism and Jainism, the Sangam period developments in Peninsular India, and the so-called "Golden Age" during the Gupta Empire. These themes will be discussed by focusing on the textual, archaeological, and epigraphical sources.

HST210 - Research Methods II: What is History?

Credits: 3

This course introduces students to some of the most influential theories and philosophies that have informed the study and writing of history. Students will learn a variety of theoretical and historical perspectives for viewing the world and thinking about historical studies,

in general. Students will explore the development of historical understanding and the various problems and approaches to the study of history. Student will read, discuss, and write about some of the most important works of theory and historiography. As E.H. Carr tells us, "interpretation enters into every fact of history." Yet, historians often disagree about those interpretations. Through this course, students will recognize the ways in which those disagreements are often rooted in conflicting perspectives about the nature of reality, forms of power, human nature, and truth. We discuss a different theme each week including post-colonialism, gender, memory, and 'universal' history; and engage with major thinkers such as Hegel and Marx. Normally, the class reads one essay per session in order to give it close attention, but longer essays may be spread across two class meetings. A typical class meeting consists of a lecture, reading together as a class, and discussion. Students should expect to read 30-40 pages per week.

HST220 - Science, Technology, and the Making of the Modern World

Credits: 3

The world as we know it today is characterised by a high degree of globalisation, by the political and economic prominence of industrialised nations, and by the primacy given to science and technology in most societies. How did such a world come about? The course explores this question by tracing the development of modern science and technology and its relationship with imperialism and other engines of globalisation in the last five centuries. In it we will look at a range of viewpoints, thus trying to move away from a purely Eurocentric account.

HST285 - Power in Movement: Expressing the History of Social Movements in India

Credits: 3

Social movements are all around us. They appear when we switch on the news, or venture out into the streets of the cities we live in. They speak to us through our mailboxes, our notice boards, our whatsapp groups and our computer screens. Most importantly, living in India or in most parts of the world in 2020, one thing is for sure - social movements are on our minds. No matter

what our politics are, whether we identify with political formations on the right, left or centre, social movements today have entered the consciousness of citizens globally. Perhaps now more than ever then, it makes sense to understand them better and to determine, in the process, where we personally stand when the worlds around us 'move' in different ways in favour of societal change. In this course we will examine the history of social movements in India that have been catalysts to far reaching changes, starting in the early twentieth century and ending in the present. The objective here is to see India today as the product, not only of economic and political developments, but of the passions and voices of different communities of people (such as women, Dalit and tribal populations, peasants and working classes). It is also to understand the ways in which present debates about rights, citizenship and access to resources originate in earlier moments in Indian history. In the process of delving into this rich history of protest, we will investigate the concept and definition of social movements from different disciplinary perspectives and offer critical insight into the fundamental and ongoing debates about the meaning of collective action for shared purposes. We will also pay particular attention to the question of impacts, examining the consequences of movements on the day to day lives of people, and in terms of political reforms, policy reforms and cultural changes. Atypically for historical study, this course is also about physically 'moving' (pun intended). We are not just going to survey the history of social movements, we are also going to express the defining logics and aesthetics of many of these via different types of performance. By juxtaposing history and the performing arts we will be able to see the political expressions of marginalised groups, of different causes in our recent history, as centrally located on individual bodies-encompassing speech, gesture and voice. We will focus on both discourse and action whilst analysing three domains: 1) women's rights; 2) caste; and 3) land-based movements. Through each, we will also try to understand how environmental conditions and access to natural resources factors into demands for justice and equality. Each week will be poised between generating awareness and understanding about important movements within these domains, with one seminar dedicated to reading and

analysing texts and the other to translating the central ideas we encounter into physical movements and different types of performance (audio/visual/art/acting-based and movement based). By working with the course instructor students will be able to embody the ideas of the reformers and activists they read, using theatrical techniques to show the connections between the past and present and to understand how essential social movements have been to the making of twentieth century India. It should be iterated that this is a course that is designed for everyone, not just specialists of history or the performing arts. What will be assessed is students' understanding of the historical texts we discuss in class, rather than purely the quality of their performance outputs. There will be written response papers to complement the physically expressive assignments. The course will also offer students the opportunity to participate in a novel pedagogical experiment: a 'moving' multimedia final exhibition that analyses the contemporary and long-term implications of the struggles for justice and equality they have studied.

JAP-101 - Japanese for beginners

Credits: 3

This course is designed for students who have very little or no exposure to Japanese language. The course has 25 lessons based on the textbook that will be used during the semester. In each lesson there are drills divided into 3 levels: A, B and C. A helps the student to learn systematically the basic sentence patterns through substitution drills, and applying verb forms and conjugations. B has various drill patterns to strengthen the grasp of basic pattern. And C is given in the discourse style to show how the sentence patterns function in actual situations. There is a review at the end of each lesson for students to go over essential points they studied in each lesson. The course will have a strong focus on increasing the students range of vocabulary and their ability to read as the main textbook is written entirely in Japanese. The course will also have audio-visual content to make the content more engaging.

MAT 110 - Introductory College Mathematics

Credits: 3

This is an introductory course which aims to equip beginning biology majors with the basic mathematical tools needed for their work. The course studies Basic Algebra and Set Theory: factors and fractions, functions and graphs, linear equations, quadratic equations, exponential and geometric functions, elementary linear and non-linear regression, elementary properties of arithmetic and geometric progressions, infinite geometric series and the binomial theorem. It also covers Matrices and Vectors: types of matrices, determinants, transpose, conjugate inverse and eigenvalues of a 2x2 matrix, verification and computation of an inverse matrix, vector addition and subtraction, dot product, cross product. Permutations and Combinations: principle of counting, permutations and combinations and simple applications. Elementary Statistics: the notion of a statistical experiment, introduction to the idea of probability-sample space, calculation of probability in elementary examples.

MAT 146 - Intermediate Calculus

Credits: 3

This course satisfies the core requirements for some of the students of the Bachelor's programmes in the Economics and Business majors. It may be taken as a GER by students of Bachelor programmes of other disciplines. This course is a second course in Calculus. It broadens and deepens a student's knowledge of elementary Calculus. The course covers some applications of definite integrals to Volumes, Arc Length and Areas, Integrals of Exponential and Logarithmic Functions and applications, some new techniques of Integration- including Integration by Parts and Partial Fractions, Differential Equations and Applications, Taylor Series with applications and an Introduction to Partial Derivatives. The applications are drawn from many fields including Economics, Physics and Engineering. The course is aimed at first-year or second-year undergraduate students of any field who have the correct preparation. A familiarity with the contents of Introductory Calculus (MAT 142) is assumed.

MAT 256 - Differential Equations

Credits: 3

This course is one of the core requirements for the Bachelor's programmes in Economics and Physics. It may be taken for the GER for other disciplines. This course gives an introduction to differential equations for Undergraduates from all fields who have a knowledge of Elementary and Intermediate Calculus (The contents of MAT 142 and MAT 146 would be enough for this course.) The course covers topics useful for any undergraduate interested in using differential equations to model real-life situations. The course is problem-oriented and the theory is developed so that the student is able to solve problems more effectively. If possible, a lab session will be arranged in each chapter to deepen the student's understanding of the subject.

PER101 - Introduction to Persian I

Credits: 3

This course is an introduction to modern written and spoken Persian. Students acquire the skills necessary to read, write, and speak Persian at an elementary level. This course is the first in a two-part sequence. The course works through approximately half of W.M. Thackston's Introduction to Persian. Students learn foundational grammatical forms, build essential vocabulary, and become comfortable reading and writing the Persian script. Students practice exercises inside and outside class that build on the lessons from the textbook. Students are expected to undertake daily practice outside of class for at least 30 minutes.

PHI 100 - Introduction to Western Philosophy

Credits: 3

In this introductory survey course, we will discuss key issues in modern Western metaphysics and epistemology. We will concern ourselves with some aspects of the following questions: What is the nature of the real? What is knowledge? How do we gain knowledge? What are the limits of our knowledge? What is the nature of space and time? What is the nature of our minds, and how do they relate to our bodies? What makes us the same person over a period of time? Are we really free in our choice of actions? Can we rationally prove the existence of God?

PHI 120 - Introduction to Ethical Theory: Virtues, Vices and Values

Credits: 3

This course introduces students to some of the main themes of philosophical ethics. Students will approach the subject through a close study of classical readings by Aristotle, Immanuel Kant, and John Stuart Mill, as well as contemporary work by such authors as Julia Driver, Amartya Sen, and Margaret Urban Walker. Among the fundamental questions to be discussed are 'what makes a life go well or poorly?', 'what makes a person good or bad?', and 'what makes an action right or wrong?'. This is a school of arts and sciences course, designed primarily as an elective for students majoring in PHL or minoring in philosophy. Other students may take the course to fulfill their GER requirements.

PHL101 - Introduction to Humanistic Inquiry

Credits: 3

This course introduces students to the basic modes of inquiry in the humanities. Students engage with a set of foundational humanities texts that address questions emerging at the interface of philosophy, history, and literary studies. Students read primary sources in translation from a number of literary traditions such as Telugu, Persian, Tamil, Sanskrit, and Kashmiri sources. Alongside these primary sources, students are introduced to major theoretical perspectives from which to read and interpret these sources. The course introduces students to early arguments about what distinguishes the human and natural sciences; problematizes and studies the human experience as represented in literature, philosophy and history; and concludes by thinking about the future of the humanities both in India and globally.

PHL125 - An Elementary Introduction to the Philosophical Traditions of India

Credits: 3

This course is the first of a set of two courses introducing the Indian philosophical tradition of darsana-sastra. In this course, students will be given an overview of the several schools (darsana) that comprise the tradition and will be introduced to some of their important doctrines,

texts and thinkers. The doctrines to be discussed during the course have their foundations in works composed over a period spanning more than three millennia, beginning with the Vedas and ending with the writings of influential contemporary thinkers such as Gandhi and Aurobindo. This course will prepare students to take the second course of the introductory set, which will present the texts and doctrines of the tradition in greater detail and thereby prepare students for further studies in this area. Readings during this course will be entirely in English, but several important terms from the primary languages (particularly Sanskrit) will be discussed throughout the course. Students will also be given readings from eminent thinkers and personalities from other disciplines (physics, neuroscience, politics, etc.) who have been influenced by specific doctrines from the Indian philosophical tradition, and students will be asked to deliberate upon these in class in light of the theories learnt.

PHL134 - Urdu Prose and Poetry

Credits: 3

The course teaches the Urdu script and introduces students to well known literary prose and poetry in Urdu. Once command of the script is achieved, the course focuses on reading selections of literary and poetic compositions in Urdu. Students also write their own poetic and literary compositions towards the conclusion of the course to share with the class.

PHL136 - Learning Sanskrit Through Sanskrit

Literature: Elementary

Credits: 3

This course is the first of a set of two courses where students will learn scholastic Sanskrit through exercises drawn from various Sanskrit literary sources, such as well-known subhāṣitas, Pañcatantra, Bhojaprabandha, Valmiki Ramayana, etc. In this course, students will be introduced gradually to various aspects of Sanskrit morphology and syntax so as to enable them to read simple Sanskrit sentences and verses. Exercises (sentences, verses and passages) for each class will be drawn from original Sanskrit works (brief description below), and will be chosen so as to exemplify the key

grammatical features which need to be explained. The Pañcatantra is a famous collection of Sanskrit stories, in verse and prose, dated to around the second/third century CE and is considered a nīṭisastra (a treatise on government or political science). The Bhojaprabandha is a work dated to around the seventeenth century CE where the several protagonists are real luminaries from the Sanskrit literary tradition who are known to have lived at distinct times, but are brought together in the fictional court of King Bhoja by the author of this work of historical fantasy. The Valmiki Ramayana is one of the two famous Indian epics, a mammoth work comprising nearly 24,000 verses and which is of monumental importance and legacy. Each class will be divided into three segments: a revision of the past lesson(s) (and review of assigned after-class exercises), the scheduled lesson, and in-class exercises taken from Sanskrit literature. There will also be surprise tests to further reinforce the learning of various grammatical features. This course will prepare students to take the second of this set of courses, wherein students will study more advanced syntactical aspects of the language. These two courses will prepare students with the adequate training in Sanskrit grammar to begin their study of original Sanskrit works. Knowledge of the Devanagari script is not a prerequisite for this course.

PHY 111 - Classical Mechanics - I

Credits: 3

This introductory course in classical mechanics reintroduces students to basic concepts of classical mechanics, such as Newton's laws, linear momentum, angular momentum, work and energy, as seen in high school but with greater mathematical rigour and physical insights, and including problem solving. The latter part of the course is on the Special Theory of Relativity.

PHY112 - Electromagnetic Theory

Credits: 3

Primarily aimed at Physics major students but can be of interest to students from other majors, especially engineering, with a sound preparation of Maths. Electromagnetic Theory course covers the basic principles of electromagnetism which includes

experimental basis, electrostatics, magnetic fields of steady currents, electromotive force and electromagnetic induction, Maxwell's equations, propagation and radiation of electromagnetic waves, electric and magnetic properties of matter, and conservation laws.

PHY121 - Laboratory Physics - I

Credits: 3

The Laboratory Physics - I course introduces students to the scientific methods for conducting Physics experiments, including the acquisition, analysis and physical interpretation of data. This course complements the Classical Mechanics course, where students are introduced to fundamental Physics concepts such as energy, momentum, force etc., by incorporating experiments which illustrate the concepts. In most instances students will be required to build the necessary equipment on a very limited budget to perform the experiment. Scientific documentation of each experiment and the findings with an oral presentation and viva is required.

PHY122 - Laboratory Physics: Electromagnetism

Credits: 3

This course is a core Course of the BS (Honours) major in Physics programme and is primarily for students majoring in Physics. The Laboratory Physics: Electromagnetism course complements the Electromagnetic Theory course, where students are introduced to concepts of electrostatics, magnetostatics, electromotive force, electromagnetic induction etc., by incorporating experiments which illustrate the concepts. In many instances students will be required to build the necessary equipment on a very limited budget to perform the experiment. Error analysis, and scientific documentation of each experiment and the findings with an oral presentation and viva is required.

PHY230 - Introductory Astronomy

Credits: 3

This is a Physics major elective course but is open to students from other majors with a sound preparation of Maths. The Introductory Astronomy course makes

students familiar with the foundations of the field, the scale of the Universe, the night sky, planetary motions, celestial positions and time, and techniques of observation involving telescopes. Further it gives insights of our planetary system and its objects, in particular the Sun, Moon and Earth. Moving outwards the course then explores the stars, including types of stars, the interstellar medium, and stellar evolution. The course also covers the physics involving the birth, evolution, and death of celestial bodies. The course explores larger distance scales with topics related to Galaxies and Dark matter. Finally topics in Cosmology related to the expansion of the Universe and Hubble's law are explored.

PHY797 - Research Project

Credits: 3

Students will work on a research project suggested by the faculty mentor.

PSY 101 - Introduction to Psychology

Credits: 3

The purpose of this course is to introduce students to the fundamental principles of the field of Psychology and provide insights into the inner working of human behavior and mental processes. The course will start with the introduction of psychology as an empirical science and then it will move through the introduction of five main pillars of psychology; biological, cognitive, developmental, social/personality, and mental/physical health. Throughout the course, relevance and applicability of psychology in everyday life will be discussed.

PSY 210 - Cognitive Psychology

Credits: 3

Cognitive Psychology is a core course for BA Psychology major students, largely targeted for the second year BA Psychology students. Cognitive Psychology is the scientific study of how humans store and process information in the mind/brain. This course will provide an understanding of various mental processes involved in the generation of thought and behavior, such as cognitive mechanisms of attention,

perception, memory, decision making, thinking, problem-solving, and emotion. Though the primary objective of this course is to introduce the scientific study of mind, the course will also cover various experimental methods and tools that are used to understand human cognition and the emerging trends in cognitive psychology. Throughout the course, relevance and application of cognitive psychology in everyday life will be discussed.

PSY151 - Research Methods in Psychology

Credits: 3

This course focusses on the processes and techniques of conducting scientific research in psychology. It trains students to (a) formulate a research problem and a hypothesis; (b) differentiate between types of research; (c) use the tools of data collection; and (d) analyze the data.

SPS102 - Identity, Inequality and Difference

Credits: 3

The course invites students to critically examine 1) the ways in which we present ourselves to social audiences and are ascribed identities around gender & sexuality, class, caste, and tribe/ethnicity 2) how differences in social identification become expectations of appropriate behavior and how these codes of conduct are perceived, negotiated, subverted and mobilized in diverse contexts and 3) hierarchies that cohere around difference. The course will largely focus on contemporary forms of social identification but present them as historically and culturally situated, and mediated by global flows. In particular, we will consider the contradictory effects of new technologies and markets for contemporary forms of social identification and inequality, and the utility of difference for accruing cultural capital in a market economy. Course content is drawn from a range of academic fields of inquiry including anthropology, sociology, literature and cultural studies.

SPS103 - Politics in Independent India

Credits: 3

This course is a basic introductory course for

understanding how politics has shaped and evolved in Independent India. Similar in spirit to the basic introductory political science courses at the undergraduate level in India, this course provides a descriptive overview of the formation and functioning of Indian state by looking at institutional dynamics of various public institutions since independence. The course will also help students to understand the evolution of Indian politics since 1947 by examining changes in social movements and interest groups and the myriad ways in which their demands are channeled by political parties and the Indian state. Through this course, students will also develop an appreciation for the historical roots of contemporary political developments like: changing party systems, rise of Hindu nationalism, and agrarian crisis in 21st Century among others.

SPS201 - Research Methods in Social and Political Sciences

Credits: 3

This course introduces students to one of the ways in which we acquire knowledge about the world—Doing Research. Research is an attempt to understand the world through systematic study—that is, through identification of a problem, question, or hypothesis; selection of methods to investigate the question, collecting data, interpreting data and reporting findings. The process of designing and doing research is a fascinating mix of various elements including the world view and social location of the researcher (researcher positionality), the selection of what one wants to investigate (research problem/question), how one goes about doing it (research methods), the concepts one uses to understand one's topic and interpret findings (theoretical frameworks), and the anticipated and unanticipated complexities existing in one's research sites (research context). Attending to this complexity, this course will familiarize students to ways of exploring the social and political world. This survey course will introduce students to how social and political scientists understand 'reality' and 'knowledge' and the tools they use to produce knowledge about the real world or suggest solutions for real world problems. This course will familiarize students with the philosophical underpinnings of research and enable them to identify, compare and contrast different qualitative and

quantitative research methods. While attending to quantitative approaches briefly, the major portion of this course will focus on qualitative research methods. This course will specifically prepare social and political science majors for the course on qualitative field research and in turn to design research projects for their undergraduate thesis.

SPS202 - Family, Community, Nation

Credits: 3

In this course, we will critically examine entities such as family, caste, class, community, language and nation, and ask how they generate powerful and sometimes conflicting loyalties among individuals. Are such associations natural and primordial, or contingent and historical? Do they have an economic rationale? How do the actions of state, law, and civil society mediate these attachments? Over the course of six modules—

Family, Caste, Religion, Language, Class, and Nation—this course we will address specific questions such as: What is the history of the family as a unit? How did ideas such as the father as the head of the family, or the heterosexual couple as its anchors, come to be taken for granted? What is the significance of caste in our lives, and what is its place in the Indian constitution? What is the relationship of religion to the state? Should it be private and contained within families, or spill over into streets and processions? Why have religious minorities, Dalits, and other groups at the ‘margin’ consistently challenged the idea of nationalism? This course builds on the understanding of the production of social identities in the introductory courses of the Social and Political Sciences programme and aims to develop a stronger theoretical foundation for analyzing key social categories. In this course, students will engage with a selection of texts focusing on categorizations along the lines of gender, family, caste, religion, language, and nation. Students will learn to critically examine these categories, their inter-connections, and the processes through which they are reproduced in everyday life.

SPS250 - Introduction to International Relations

Credits: 3

This course introduces students to international relations,

one of many subfields (National Politics, Comparative Politics, International Relations, Political Theory, Public Administration, and Methodology) in political science. As a field of study, the study of international relations focuses on the political, military, economic, and cultural interaction of state and non-state actors at the global level. The field therefore encompasses a diverse array of topics, from economic development to military conflict, from the environment to international institutions. In this course, we explore the key concepts, issues, and processes of international relations through the writings of some of the most influential and important scholars in the field. Through our consideration of their work, we develop the general knowledge and analytic tools necessary to understand, evaluate, and respond to a complex array of problems in the contemporary world.

SPS251 - Ecology and Society

Credits: 3

Human activities leave a footprint on the environment. From simple subsistence gathering, to agriculture and animal husbandry, to complex market and industrial transactions, the impact of our activities on the natural world varies greatly. Conversely, ecological forces—weather patterns, food and water availability, floods, droughts, and cyclones—shape and transform people’s living conditions, their social and cultural beliefs and practices, and even the rise and fall of governments. This course is designed an introduction to human-environment relations as studied in the social sciences—both how human activities and social and political forces shape the natural world, and conversely, how nature shapes human experiences, beliefs and political systems. How do hunter-gatherers provision for food? How does their relationship to their environment differ from plantation workers, farmers, or fishers? How do landscapes shape cultural beliefs? How do resource conflicts occur? How do people survive in toxic environments? How do humans and animals coexist in the wild? What are the environmental impacts of lifestyle choices in urban, industrialised societies- food, waste, travel, and technology use? Through such examples, the course will accessibly introduce key themes in the humanistic studies of the environment, such as extinction,

labour, extraction, risk, climate change, and

conservation. The course will use a range of texts, spanning disciplines and approaches, primarily sociology, anthropology, environmental history and political ecology, in addition to current news and media reportage, and film.

SPS257 - Anthropology of Texts and Literature

Credits: 3

ON BEHALF OF PROFESSOR SAUMYA MALVIYAThis course introduces students to an anthropological approach to texts and literature. This means that various kinds of texts and literary forms will be studied by placing them in the network of intentionalities within which they are produced and consumed. More precisely, texts will be seen as artefacts, i.e., as being constituted within specific traditions, interacting with and reacting to other texts, and enabled and constrained by certain structures and patterns. Further, given the ubiquity of texts in our lives, intellectual or otherwise, and in different societies, a need is felt to understand what a text is in the first place and how, depending on different contexts it lends itself to various transformations and performance modes. This course seeks to address that need, recognising that a naïve approach to texts not only does not yield much in terms of signification, it in fact hampers their proper appreciation. Alongside engaging with key theoretical texts drawn from the broad rubric of post-structuralism and literary analysis, students will be exposed to readings of a more explicitly anthropological bent. In this way they will be learning about how to use insights drawn from different intellectual traditions and putting them to anthropological use, the importance for which is borne out by the need to understand how texts function in various socio-cultural contexts. In the first half of the course students will be introduced to some fundamental ways in which texts and textualities have been broached and in the latter part they will be dealing with texts and textual forms associated with various genres. This will open for them a fertile problematic of studying the relationship between a genre and its individual instantiation. Rich possibilities of an anthropological approach to texts will be demonstrated by examples focusing on the textual or literary form of ethnography, poetry, philosophy, mathematics and science. In the

process students will get to read major theoreticians and anthropologists such as Barthes, Bakhtin, Derrida, Douglas, Geertz, Das etc. Owing to the fact that many texts in the course are drawn from the tradition of literary analysis, anthropological focus on literature has by default become part of it. But this will be brought more sharply into focus, as students will get to engage specifically with literature as a particular kind of textual condition. For example they will be learning about whether and to what extent it lends itself to translation, whether literature is a universal or not, how a literary style is constituted etc. Along with learning key concepts such as intertextuality, translation, publics, etc. students will also be exposed to ethnography as a method of anthropological investigation. They will not only be reading ethnographies on texts and textualities but also be studying about ethnography itself as a textual form. With a range of illustrations the course will appeal to students from different streams and disciplines, as they will come to see the potential of an anthropological approach to texts and textualities. This will also enable them to reflect critically on reading and writing practices with which they are already familiar. The course will be reading intensive and students will be expected to read 40-50 pages per week. A typical class meeting will consist of lecturing, reading together as a class and discussion.

School of Computer Studies

CIT605 - Database Administration

Credits: 5

This course will provide knowledge of database administration capabilities such as physical database components and its management, user management, database monitoring, tuning and control, data migration, backup and recovery, etc. Implementation of database administration concepts will be taught through Oracle RDBMS. Students will learn oracle database server and client installation and configuration, automatic and manual database creation and management, creating users, assigning roles and privileges to users, creating tablespaces, tools used for performance monitoring and tuning, partitioning and index management, control,

backup and recovery policies, Export, Import and Data Loading utilities.

MOB622 - Mobile Application Development using iPhone

Credits: 5

The aim of this course is to provide knowledge of Mobile Computing commencing with the basic understanding of mobile communication till the emerging trends and its application. The course covers concepts related to implementation of mobile applications in iOS platform.

PRJ608 - Minor Project

Credits: 10

This course provide an opportunity for innovative thinking and research for development of new ide-as, novel products and solutions for solving societal and industrial problems

School of Engineering and Applied Science

BTP402 - B.Tech Project Part - 1 (BTP - 1)

Credits: 3

Each student of B.Tech. program needs to complete B.Tech. Project (BTP) successfully. B.Tech. Project (BTP) comprises of BTP Part – 1 with 7 credits and BTP Part – 2 with 8 credits. The total credits for BTP are 15. To graduate, the student should satisfy all other graduation requirements described in the ‘Academic Requirement for B. Tech. program’ offered by the institute as well as the student should have passed BTP Part – 1 and BTP Part – 2 successfully with the student’s CGPA equal or greater than 2.00. Following are the options to complete B.Tech. Project (BTP) and a student can select any one of the options:
a. On-campus BTP: Student can pursue a BTP on-campus (at SEAS) under the supervision of the faculty member(s) of SEAS. A student can register for BTP Part – 1 with 7 credits during semester VII and register for BTP Part – 2 with 8 credits during semester VIII. I. In such a case, a student has the flexibility to opt for the courses in the 7th and 8th semester to complete the credit requirements of

2019-2020. b. Off-campus BTP: Student can pursue a BTP off-campus. (Outside* SEAS: at an external company/institute/organization/university). The off-campus supervisor gives feedback about the progress of the student and his/her B.Tech. project to the BTP coordinator (at SEAS). II. A student can register for BTP Part – 1 with 7 credits and should complete all the credits’ requirement in the 7th semester only. III. After completion of credits’ requirement, BTP Part – 2 with 8 credits during semester VIII can be registered outside of SEAS.

CHE200 - Power Plants and Mechanical Operations

Credits: 4

Power plant and Mechanical Operation course concentrates on state-of-the-art technology used in the power plants. It emphasizes the why and what of current practice. The course comprises of two parts such as power plant and mechanical operation. Both aspects are correlated to each other, hence the course is designed in such way that the students can gain a firm knowledge on the overall processes related to power plant.

CHE201 - Fluid Mechanics

Credits: 3

Topics will cover revision of continuum concepts; kinematics; Reynolds transport theorem; Reynolds analogy; mass, linear momentum, angular momentum and energy flow rates in elemental and integral form; conservation equation in differential form; conservation equations in integral form; hydrostatics: pressure distribution, buoyancy; inviscid flows; potential flow: stream and potential functions; basic flow elements, superposition of plane and axisymmetric flows; viscous external flows: hydrodynamic and thermal boundary layers, friction coefficient, heat transfer coefficient; viscous internal flows: pipe / duct flow, head calculations and heat transfer; natural convection external and internal flows. A systematic breakup of concepts covered under these topics is given as follows: Unit I Introduction and fundamental concepts: Fluid definitions, Fluid continuum, Fluid properties, Classification of fluids Unit II Fluid Statics: Fluid pressure, Hydrostatic forces on plane and curved surfaces, manometers, Buoyancy

principle, stability of immersed and floating bodies. Fluid Kinematics: Acceleration field, Lagrangian and Eulerian descriptions, Flow patterns, Streamlines and Streamtubes, Pathlines, Streaklines, Vorticity and Rotationality. Unit III Fluid Kinetics: Fluid Kinetics: Control volume concept, mass, linear momentum, angular momentum and energy flow rate equations in elemental and integral form; conservation equations in differential and integral forms, stream and potential functions; basic flow elements, Euler's equation of motion, Reynolds transport theorem; Reynolds analogy; Energy equations, Bernoulli equation and applications, inviscid flows, potential flows, superposition of plane and axisymmetric flows. Unit IV Laminar and turbulent flows: Types of flow, Reynolds experiment, Laminar flow between parallel plates, Viscous internal flows: Pipe / duct flow, head calculations and heat transfer; natural convection external and internal flows. Unit v Boundary layer theory: Boundary layer theory: Hydrodynamic and thermal boundary layers, friction coefficient; natural convection external and internal flows, flow separation, circulation, natural convection external and internal flows. Drag and lift on immersed bodies.

CHE211 - Material and Energy Balance

Credits: 3

This course is an introduction to the principles and techniques used in the field of chemical engineering. Specifically, the course will discuss methods to systematically formulate and solve material and energy balances for a wide range of processes used in the chemical industry.

CHE300 - Mass Transfer Operations - II

Credits: 3

In this course, applications of mass transfer will be discussed. This will include distillation, liquid-liquid extraction, solid-liquid extraction and adsorption.

CHE301 - Heat Transfer

Credits: 3

Unit 1: Steady and Unsteady state conduction and Extended surfaces Fourier's law of heat conduction,

Steady state conduction through a composite solid, Steady state heat conduction through variable area like cylinders and spheres, Lumped capacitance model for unsteady state conduction, Unsteady state conduction with internal temperature gradients across solids. Unit 2: Radiation heat transfer Black body radiation, Planck's law, Wein's displacement law, Stefan-Boltzmann law, Kirchoff's law, concept of gray body, Emissive power, Radiative heat exchange between surfaces, Radiation shield Unit 3: Heat transfer without phase change Free convection basic concepts, heat transfer coefficient correlations for flat plate, cylinder, sphere, entry region, hydrodynamic and thermal boundary layer Forced convection over flat place, Dimensional analysis, laminar and turbulent flow inside and outside pipes, hydrodynamic and thermal boundary layers, corresponding correlations for heat transfer coefficients, heat transfer during flow over spheres, cylinders, packed and fluidized beds, Extended surfaces and enhancement of heat transfer Unit 4: Heat transfer with phase change

Boiling phenomenon, Boiling curve, Nucleate boiling, pool boiling, Critical heat flux, Film boiling, Forced convection boiling, Film condensation inside and outside tubes, Dropwise condensation Unit 5: Heat Exchangers Concept of overall heat transfer coefficient, Design of Double-pipe heat exchangers, Shell and tube heat exchangers, Compact heat exchangers, design in agitated vessels Unit 6: Evaporation and Evaporators

Natural circulation evaporators, forced circulation evaporators, Falling film evaporators, Single and Multieffect evaporators, effect of Boiling point elevation, Design of Multi-effect evaporators Unit 7: Mass Transfer and Simultaneous mass transfer Basics of diffusion, mass transfer analogies, simultaneous heat and mass transfer

CHE302 - Chemical Engineering Lab - II

Credits: 1.5

This lab intends to equip the students with the concept and principles of mass transfer operation, which are of prime importance in any chemical industry. The objective of the laboratory is to enable the student to learn the subject and gain knowledge in handling the lab equipment's like steam distillation, batch distillation, bubble cap distillation column, determination of diffusivity coefficient, mutual solubility data, tie-line

data, gas absorption, forced draft dryer etc., and to test practical applications of the theory.

CHE303 - Transport Phenomena

Credits: 3

Transport phenomena deals with the study of momentum, heat and mass transfer in terms of spatial variation of velocities, temperatures or concentrations for different types of geometries with incorporation of boundary conditions. This is done for both steady and unsteady state flows in laminar regime or turbulent regime. The basics of Navier-Stokes equations will also be discussed

CHE304 - Heat Transfer Lab

Credits: 1.5

The lab course is having experiments of heat transfer through composite Wall, heat pipe demonstrator, emissivity measurement apparatus, Stefan Boltzmann's apparatus, heat transfer in forced convection, heat transfer in natural convection, heat exchanger service unit.

CHE310 - Chemical Reaction Engineering

Credits: 3

This course will cover the principles involved in the selection and design of chemical reactors for homogeneous reactions.

CHE350 - Process Safety and Management

Credits: 3

This course gives idea about various hazards of Chemicals and consequences of uncontrolled release. It creates foundation for appreciating safety practices in Design and operation of plant involving Hazardous Chemicals and to learn how to plan, prepare and respond to emergency situations. The course also gives a bird's eye view of the safety legislations.

CHE401 - Pollution Control

Credits: 3

Introduction: Environment and environmental pollution Air Pollution Control: Air pollution system, Air

pollutants, Need of APC, Air pollution by chemical process industry, Standards as per APC Acts and Rules, APC equipment- particulate and gaseous emissions Water Pollution Control: Constituents in wastewater, Need of WPC, Water pollution by chemical process industry, Standards as per WPC Acts and Rules, WP treatment processes and equipment Solids Waste Treatment and Disposal: Characteristics and sources of industrial wastes, Need of hazardous waste treatment and disposal, Industrial hazardous waste-related Rules, Industrial hazardous waste treatment and disposal methods Pollution Prevention: Waste audit, Reuse, recycle, recover, Cleaner production in chemical process industry, Wealth from waste, Good housekeeping, Maintenance

CHE410 - Catalysis and Catalytic Processes

Credits: 3

Course Content 1. Classification and introduction to catalysis 2. Surface chemistry 3. Materials perspective 4. Analytical aspects 5. Reactivity and Kinetics of catalytic reactions 6. Mechanistic aspects

CHE440 - Process Design and Economics

Credits: 3

In many cases the processing costs associated with the various process alternatives differ by an order of magnitude or more, so that we can use shortcut calculations to screen the alternatives. However, we must be certain that we are in the neighborhood of the optimum design condition for each alternatives, to prevent discarding an alternative because of a poor choice of design variable. This course brings together the concepts of engineering and economics for chemical plant design and optimization. This course can be termed as the pinnacle of the chemical engineering curriculum as it covers Mechanical Design of chemical Process Equipment followed by Plant design covering Front End engineering, Preliminary and detailed Engineering including costing- equipment cost, fixed capital Investment and working capital.

CHE441 - Process Simulation

Credits: 3

Process Simulation is the solution of a chemical process model that is built based on different principles of chemical engineering. The design, analysis, development and optimization of chemical, biological, environmental, pharmaceutical, textile and petroleum processes are the components of process simulation. The course is designed in such a way that it integrates the principles of Heat Transfer, Mass Transfer, Reaction Engineering, Thermodynamics, Fluid Flow and Process Control to solve problems of Chemical Engineering. Hence, process simulation is used to design any chemical unit or process like separator, reactor, refrigeration system, boiler etc. It is also used to optimize the process parameters like temperature, pressure and flow rate to increase the yield of the desired product or to increase the efficiency of any unit. The students will solve the problem with the help of process simulators like ASPEN PLUS and HINT.

CHY101 - Organic Chemistry

Credits: 3

This course is designed to provide a fundamental overview of organic chemistry to students interested in pursuing a career in the sciences. Upon successful completion of this class, students will understand the relationship between structure and function of molecules, the major classes of reactions, reaction energetics and mechanisms, synthesis of organic compounds, and how to determine structure via various spectroscopic techniques. There will be two lectures per week.

CSC200 - Design and Analysis of Algorithms and Data Structures

Credits: 4

The course covers basic data structures and techniques for design and analysis of data structures with a rich set of applications in computer science, computational sciences and operations research. The first part of this course will initially cover the basic data structures like Lists, Stacks, Queues, Binary Search Trees, Heaps and Height Balanced Search Trees. We will also introduce tools and techniques for computational analysis of these basic data structures. The second part of this course will introduce algorithms and data structures for sorting and searching, divide and conquer, greedy algorithms,

dynamic programming, graph algorithms and hashing.

CSC201 - Computer Organisation

Credits: 3

The Course includes design and development of RISC based Computer Architecture with the help of Verilog and its implementation on a Configurable hardware. The course will be divided into various modules which will design a system and finally implemented.

CSC202 - Computer Organisation Lab

Credits: 1.5

The Course includes design and development of RISC based Computer Architecture with the help of Verilog and its implementation on a Configurable hardware. The course will be divided into various modules which will organize a system and finally implemented

CSD100 - Introduction to Data Science

Credits: 3

Data science is an interdisciplinary area that involves recording, storing and analyzing data to gain insights and knowledge for decision making. This introductory course provides a foundation in data science for first year undergraduate students. The course covers data science process and its life cycle, data collection using sampling/surveys, ordering/organizing, data processing and visualization of data through charts and maps. Statistical fundamentals needed for analysis and interpretation of data are covered along with cases and examples related to real life applications of data science.

CSD101 - Fundamentals of Data Science

Credits: 3

Data science is an interdisciplinary area that involves recording, storing and analyzing data to gain insights and knowledge for decision making. This is an intermediate level course providing foundation in data science and programming for first year undergraduate students. The course covers data science process and its life cycle, data collection using sampling/surveys, ordering/organizing, statistical analysis and visualization of data. Cases, examples and practical applications of data science are

discussed using spreadsheet and python programming.

CSD102 - Data Science

Credits: 3

This course will introduce data science that will be useful in data analytics and visualization. Students will learn basics and inferential statistics that they will apply for data collection, data cleaning, data modeling, data analysis and data visualization using the tools MS Excel, Tableau, Picktochart and QGIS. Students will be introduced to the Python programming for data science. Data science is an interdisciplinary area that involves recording, storing and analyzing data to gain insights and knowledge for decision making. This is an advanced level course on data science with emphasis on python programming and statistics for first year undergraduate students. The course covers data science life cycle, data collection using sampling/surveys, organizing, processing and visualization of data using maps, charts and infographics. Descriptive and inferential statistics, probabilistic approaches, cases and practical applications of data science are discussed using spreadsheet modeling and python programming.

CSE205 - Data Structures

Credits: 4

The course covers basic data structures and techniques for design and analysis of data structures with a rich set of applications in research and industry. The course provides a thorough introduction to the analysis of the complexity of algorithms. It shows how to use these analysis for algorithms using the basic data structures like Lists, Stacks, Queues, Binary Search Trees, Heaps and Balanced Search Trees for storing data, sorting and searching problems. We will also introduce tools and techniques for computational analysis of these basic data structures. It covers also some more advanced problems graph and tree algorithms.

CSE310 - Advanced Data Structures and Algorithms

Credits: 3

This course intends to provide a rigorous introduction to fundamental techniques in the design and analysis of

algorithms. The course can be divided into five parts namely (1) Foundations, (2) Sorting and Order Statistics, (3) Advanced Design and Analysis Techniques, (4) Graph Algorithms and (5) Advanced Data Structures and Algorithms. In the Foundations part, we will overview asymptotic notation, divide and conquer techniques, solving recurrences, probabilistic analysis and randomized algorithms. In the Sorting and Order Statistics part, we will cover heapsort, quicksort, sorting in linear time and median order statistics. In the Advanced Design and Analysis Techniques part, we will cover dynamic programming, greedy algorithms and amortized analysis. In the Graph Algorithms part, we will cover depth first search, breadth-first search, bi-connectivity and strong connectivity, topological sort, minimum spanning trees, shortest paths and maximum flow. In the advanced data structures and algorithms part, we will introduce tries (suffix trees) and the design and analysis of approximation algorithms with applications in computer science, operations research and computational biology.

CSE330 - Computer Networks

Credits: 3

This is a first course on computer networks. The course will introduce the fundamentals of computer networking and a number of protocols. The course introduces the layered protocol architecture concept and discusses physical, data link, network, transport and application layers. It describes the functionalities of these layers as well as the main protocols pertaining to these layers. The course emphasizes the architecture and protocols used in the Internet. It also introduces wireless networks, cloud computing, Internet of Things, network security and software defined networking. The programming component will be covered in a companion laboratory course

CSE331 - Computer Networks Lab

Credits: 1.5

The course focuses on practical aspects related to the theoretical concepts studied in the Computer networks course.

CSE340 - Operating Systems

Credits: 3

It is a foundation course for 'Information and Communication Technology (ICT)' stream to introduce basic concepts and internals of modern operating systems.

CSE341 - Operating Systems Lab

Credits: 1.5

It is a foundation course for 'Information and Communication Technology (ICT)' stream to provide hands-on sessions to realize basic concepts and internals of modern operating systems.

CSE516 - Probabilistic Graphical Models

Credits: 3

Probability theory and Graph modelling (PGM) play a key role in the design of a system across many disciplines like Artificial Intelligence, statistics, Life Sciences -computational biology, Computer Systems, Intelligent Transports, Robotics, Economics, etc. Such field treated as "the search for a coherent global conclusion from local information". The PGM framework provides a unified view for this wide range of problems, enabling efficient inference, decision-making and learning in problems with a very large number of attributes and huge datasets. PGMs bring together graph theory and probability theory and provide a flexible framework for modelling large collections of random variables with complex interactions. The course will focus mainly on three aspects: A. The core representation, including Bayesian and Markov networks, and dynamic Bayesian networks; B. Probabilistic inference algorithms, both exact and approximate; and C. Learning methods for both the parameters and the structure of graphical models. Students entering the class should have a pre-existing working knowledge of probability, statistics, and algorithms. This class will set the foundation for machine learning, predictive analytics, reinforcement learning, natural language processing etc. Students can apply PGM in any field of core computer science and engineering to handle multidimensional uncertain problems. General Information

CSE518 - Artificial Intelligence**Credits:** 3

Artificial intelligence (AI) is an ever expanding impacting several domains. Considering the multidisciplinary nature, the course will cover the breadth of AI and it will delve into problem solving, knowledge representation, planning, uncertainty representation, and making complex decision.

CSE520 - Data Analytics and Visualisation**Credits:** 3

Data Analytics is the science of analyzing data to convert information to useful knowledge. This knowledge could help us understand our world better, and in many contexts enable us to make better decisions. While this is the broad and grand objective, the last 20 years has seen steeply decreasing costs to gather, store, and process data, creating an even stronger motivation for the use of empirical approaches to problem solving. This course seeks to present you with a wide range of data analytic techniques and is structured around the broad contours of the different types of data analytics, namely, descriptive, inferential, predictive, and prescriptive analytics.

CSE540 - Cloud Computing**Credits:** 3

The course will introduce basic concepts of distributed and parallel computing, service-oriented architecture, virtualization, service and delivery models of cloud computing. The course will include internals of virtual machines, development and deployment of cloud services. Challenges and research issues like resource provisioning, Virtual Machine scheduling, load balancing, VM migration, privacy and security, energy efficiency in clouds etc. will be introduced. Students will work on group projects to address development or deployment related aspects of cloud services/applications.

CSE560 - Models of Computation**Credits:** 3

This course gives an introduction to models of

computation that include deterministic and non-deterministic finite automata, pushdown automata, Turing machines, decidable and undecidable computation problems. Topics will include some aspects of computational complexity.

ECE209 - Digital Design**Credits:** 4

Digital Design is an introductory course for the students opting for computer science and engineering. It incorporates concepts of designing basic digital circuits used to build a computer system.

ECE210 - Signals and Systems**Credits:** 3

Introduction to signals and systems Convolution and Correlation Continuous time Fourier Series Discrete time Fourier series Continuous time Fourier Transform Discrete time Fourier Transform Filters

ECE310 - Wireless Communications**Credits:** 3

Wireless sector has undergone a paradigm shift from 2G, 2.5G (EDGE), 3G (HSDPA) to 4G (LTE) technology and will extend to 5G (Cognitive Radio) in recent future. As per the Telecom Regulatory Authority of India (TRAI) report, with a subscriber base of nearly 1185.55 million (more than 100 crores), India is currently the world's second-largest telecommunications market and has witnessed a massive growth since the evolution of LTE (long-term evolution) as 4G technology. Also as per Ericsson mobility report, data traffic per active user is expected to increase five-fold from 1.4 GigaByte (GB) per month in 2015 to 7 GB per month by 2021. All credibility of high data rates goes to OFDM (Orthogonal Frequency Division Multiplex), Multiple Input Multiple Output (MIMO) and to the associated multiple accessing schemes like OFDMA (Orthogonal Frequency Division Multiple Access) and SC-FDMA (Single Frequency Division Multiple Access). As an Engineer, it's vital to understand the existing technologies with the fundamentals as a strong foundation to cope up with the requirement of future wireless services. The objective of

this course is to provide knowledge on performance analysis of various digital modulation techniques and the comparison of wired v/s wireless communication systems. Furthermore, an in-depth understanding of wireless standards like 2G, 3G, and 4G are provided. The course is designed in such a way that it provides a comprehensive exposure to the fast-growing technologies like CDMA, MIMO, and OFDM which are the backbone of 3G and 4G wireless networks. This course will also provide coverage of various digital modulation schemes which are used in Bluetooth, LAN, Digital Video Broadcasting etc. Also, the modeling of the wireless system and BER performance analysis are incorporated into the course.

ECE311 - Wireless Communications Lab**Credits:** 1.5

The objective of this lab course is to do Montecarlo Simulations of wireless communication systems. The laboratory course has a project component to be carried out under any one of the three sub-categories i.e, Research, Entrepreneurship and Conceptual Verification of future wireless standards. This approach will make the course more interesting. At the end of the wireless course, the student will be able to do an analysis and simulations of 3G/4G wireless networks.

ECE500 - Information and Coding Theory**Credits:** 3

Information theory. Entropy. Compression . Huffman code.Channel capacity, Shannon's theorem. Block codes, Linear codes, Cyclic codes,Encoding and decoding, Linear Algebra, Galois Fields, BCH codes, Convolution codes.

ENR205 - Thermodynamics - I**Credits:** 2

This course covers the fundamental principles of thermodynamics and physical chemistry as applied to energy systems. This course provides a foundation in fundamental thermodynamic phenomena, including the first and second laws of thermodynamics, thermodynamic properties and equations of state.

EVD310 - VLSI Design

Credits: 3

This course will cover: Trends in VLSI industry; Fundamentals of semiconductor devices: PN junction, MS contact, MOS Cap; IV characteristics of MOSFET; CMOS inverter and VTC characteristics; CMOS standard and compound gates and transistor sizing; skewed gates, RC delay analysis of CMOS gates; Gate layout and Lambda rules; Logical effort method for delay analysis; power dissipation (dynamic and static power), Pseudo-NMOS gates, pass-transistor gates, dynamic circuits – domino, NP domino and Zipper domino, etc.

EVD511 - High Performance Computing

Credits: 3

Unit 1: Introduction to High Performance Computing: Understanding of Moore's Law and trends in development of VLSI Technology, Review of Digital Circuits, Overview of Processor Developments, Introduction to Computer Architecture, Understanding "Performance" criteria for processors. Unit 2: High Performance Computer Architectures: Current Trends in Computer Architecture, Memory Hierarchy basics and Design, Various Parallelism approaches, Data Hazard and Dynamic Scheduling, Multiprocessor architecture, Synchronization, selected advanced topics. Unit 3: ARM Architecture and Arm Assembly Language Programming: Arm Embedded Systems, RISC Design Philosophy and Arm Design Philosophy, Embedded System Hardware and Software, ARM Processor Fundamentals, ARM Assembly Language Instruction Set, Introduction to the THUMB instruction set, Writing and optimizing ARM assembly codes, Optimized Primitives, Introduction to Firmware, Memory Hierarchy and cache memory, introduction to Memory Management Units.

EVD520 - Internet of Things

Credits: 3

The course "Internet of Things" focuses on connecting sensors, actuators and other electronic devices to internet using two platforms – Arduino Platform and Raspberry Pi platform. The data and information sent to the internet can be collected/stored, analysed and utilized for

decision making. All students will build two projects as part of the course. The example of projects may include Home Automation using IoT, Irrigation Management System using IoT, etc. The course is divided into following units. Unit 1: Introduction to Internet of Things: Review of Embedded Systems, IoT Fundamentals, Fundamental Building blocks of IoT Devices, IoT in various domains of life. Unit 2: Introduction to Arduino Platform Unit 3: Actuators: Study of selected actuators, their operating principles, application etc. Unit 4: Sensors: study of fundamental principles of sensors for various parameters like temperature. Their comparisons and use in IoT. Unit 5: Internet and communication protocols Unit 6: Introduction to Raspberry Pi Platform Unit 7: Linux Fundamentals Unit 8: Introduction to Programming in Python Unit 9: Selected Advanced Topics in Internet of Things

HRT221 - Conservation and Preservation Science

Credits: 3

Topic Name Content 1. Introduction and Conservation Philosophy Historical development, current principles and practices, Ethics in Conservation. 2. Science of inorganic materials Stone objects – Technique and composition, Metal objects – technique and composition, Ceramics – Stucco, terracotta, stoneware, porcelain and glass, Archaeological monuments and materials. 3. Science of organic materials Wooden objects – Techniques and composition, Paper-based materials - manuscripts and archival materials, Palm leaves, Birch bark, Bhojpatra, Textiles – Varieties and composition, Objects of animal origin – Bones, ivories and leather 4. Science of composite materials Paintings - construction of painted surfaces, Watercolour paintings, tempera paintings, gouache paintings, Oil paintings, acrylic paintings and wall paintings 5. Process of deterioration - Physical and chemical deterioration of cultural property, Bio-deterioration of cultural property, Pollutants and their effects on cultural property 6. Preventive conservation and Microclimate management - Museum climate – Temperature, Relative humidity and Lighting systems, Integrated pest management, Handling and storage of cultural property 7. Scientific examination and dating techniques - Visual examination of art objects,

Scientific examination – ultraviolet radiation, infrared radiation, x-rays, Examination of objects at the molecular level, Connoisseurship and scientific authentication, Dating techniques for cultural materials .

MAT100 - Multivariate Calculus

Credits: 3

As the course name suggests, multivariable calculus is an extension of calculus of single variable to more than one variable. In calculus of single variable, we study functions of a single independent variable, $y=f(x)$. In multivariable calculus, we study functions of two or more independent variables, e.g., $z=f(x, y, z)$. Many phenomena depend on multivariables. Some examples are: 1. In thermodynamics, temperature of a system depends on both pressure and volume. 2. In electromagnetism, the electric and magnetic fields are functions of the three space coordinates, (x,y,z) , and one time coordinate, t . 3. In modeling heat transfer and fluid flow, the velocity of the field depends on both position and time. 4. In daily life, the cost of the petrol that one has to pay at the petrol station depends on the price of the crude oil, refining expenses, the tax that the government imposes on it, the city one lives in, and the dealer margin, just to name a few. The graphical visualisation of the multivariable functions, and the calculus operations on them is little tricky, but also rewarding!

MAT203 - Differential Equations and Linear Algebra

Credits: 3

The course has two components – Differential Equations and Linear Algebra. In Differential Equations, the course will introduce students to the concept of differential equations, how they arise in real life situations and their importance in Mathematical modelling. We will then concentrate on methods of solving first order equations and second order linear equations. Linear Algebra will take the students through to solving a system of linear equations – concept of Null Space, Row space of a matrix, Rank of a matrix. Concept of Vector spaces will be introduced and discussed in detail with emphasis on basis and dimension and linear transforms from one Vector space to another. Projection of a vector onto a vector space and its use in Least

Squares Approximations will be discussed. The eigenvalues and eigenvectors of matrices will be introduced and their usefulness in diagonalization will be discussed. If time permits, the Singular Value decomposition will be discussed

MAT204 - Linear Algebra

Credits: 3

The course includes the study of vectors in the space, systems of linear equations, matrices, determinants, vectors, vector spaces, linear transformations, inner products, eigenvalues and eigenvectors, singular values, principle components, quadratic forms. It is specifically meant for students planning to specialise in Computer Science and related disciplines.

MDT420 - Industrial Automation

Credits: 3

This course is an elective offered to all engineering students. The course mainly focuses on familiarizing students with automation systems practiced widely across various industries. The course will begin with an introduction to the architecture of industrial automation and various types of automation systems namely Programmable Logic Controller (PLC)s, Pneumatic systems and Hydraulic systems. The core of the course is mainly divided in two themes, namely, process and motion automation. The course will provide a background on implementation of such automation systems in different processes and machines. The concepts of Safety Integrity Level (SIL)s and economic impacts in society due to industrial automation will be discussed. Emphasis is also given to industry standards for all subsystems studied.

MEC210 - Strength of Materials

Credits: 3

This course as the name suggests, covers the basics of the material strength. This course forms the foundation of the vertical of Materials and Manufacturing within the discipline of Mechanical engineering. The course belongs to the branch of statics and includes the analysis of developed stress and induced strain in physical

structures because of the external loading conditions. It is a theory course covering topics such as different types of stresses, shear forces, bending moment and their diagrams, deflection of beams, buckling of columns and torsion of shafts.

MEC320 - Thermal Engineering

Credits: 3

Unit-1 Introduction Steam Cycle: Rankine Cycle, Thermal Efficiency and Methods to Improve it, Reheating, Regeneration, Feedheaters, Various Efficiencies in Steam Power Plant, Cogeneration and Numerical Problems. Unit-2 Condenser and Cooling Tower: Types of Condenser, Types of Cooling Tower, Performance Calculations and Numerical Problems. Unit-3 Nuclear Power Plant, Geothermal Power Plant, Ocean Thermal Energy based Power Plant, Biomass energy based power plant. Unit-4 Steam Turbine Power Plant: Nozzle Study, Impulse steam Turbine, Compounding of Steam Turbines, Reaction Turbine, Losses in Steam Turbine and Numerical Problems.

MEC322 - Fluid Machines

Credits: 4

Construction and working of hydraulic press, Hydraulic accumulator, Hydraulic intensifier, Hydraulic crane, Hydraulic jack, hydraulic lift, Hydraulic ram, Fluid couplings, Fluid torque converter and air lift pump
Hydraulic Machines: Reciprocating compressors, Centrifugal compressor, Axial flow compressors, Rotary compressors
Compressors: Centrifugal pump – Constructional features, basic theory, pressure rise through impeller, characteristics curves, priming, maximum suction limit, minimum starting speed to deliver the discharge, specific speed. Other Positive Displacement Pumps Reciprocating pump – Various types, construction, operation, characteristics and efficiency of single stage reciprocating pump. Pumps: Hydraulic Turbines: Introduction, Classification of turbines, Impulse and reaction turbines, Pelton, Francis and Kaplan Turbines, Draft tube, Governing of hydraulic turbines, Cavitation. Impact of jet – Impact of jet on fixed and moving flat and curved plates. Hydropower Plant: Introduction, Classification of hydropower plant,

Essential components of hydropower plant.

MEC330 - Computer Aided Design and Manufacturing

Credits: 3

Part A Computer Aided Design Product Cycle for Discrete products manufacturing-Use of computers Automation-Need, Types, Their applications Introduction to CAD/CAM systems-Their advantages Introduction to CAD & Computer Graphics -Input and output devices, Raster Graphics -Scan Conversion and algorithms for plane and space curves -Two Dimensional Graphic Transformations - Three Dimensional Graphic Transformations Geometric Modeling Techniques, Surface Modeling, Solid Modeling, CAD standards Introduction to Finite Element Method and design optimization Computer Aided Design and Analysis of Mechanism and Machine Elements. Part B Computer Aided Manufacturing Introduction to CAM and CNC Technology Features of CNC m/c tools N/C Part Programming, Computer Assisted Part Programming Introduction to Robotics-Robot elements and controls, programming and teaching robots, specification, application and safety aspects. CAD/CAM integration, Rapid prototyping & 3D printing FMS and Computer Integrated Manufacturing CAD/CAM/CAE software.

MEC331 - Computer Aided Design and Manufacturing Lab

Credits: 1.5

This course focuses on the integral role of computers in design and manufacturing. The course lays foundation for design and manufacturing of any engineering product. The course provides students with a background in Scan Conversion, Solid Modeling, Finite Element Analysis (FEA), CNC technology and Rapid Prototyping. This also provides students with learning various CAD and CAM tools.

MEC344 - Advanced Machining Methods (Unconventional Machining)

Credits: 3

Introduction– Need for non-traditional machining methods-Classification of modern machining processes – considerations in process selection. Materials. Applications.Ultrasonic machining – Elements of the process, mechanics of metal removal process parameters, economic considerations, applications and limitations, recent development.Abrasive jet machining, Water jet machining and abrasive water jet machine: basic principles, equipment, process variables, mechanics of metal removal, MRR, application and limitations. Electro – Chemical processes: Fundamentals of electro chemical machining,electrochemical grinding, electro chemical honing and deburring process, metal removal rate in ECM, Tool design, Surface finish and accuracy economic aspects of ECM – Simple problems for estimation of metal removal rate. Fundamentals of chemical, machining, advantages and applications. Thermal Metal removal processes: General Principle and applications of Generation and control of electron beam for machining, theory of electron beam machining, comparison of thermal and non-thermal processes – General Principle and application of laser beam machining – thermal features, cutting speed and accuracy of cut. Generation and control of electron beam for machining, theory of electron beam machining, comparison of thermal and non-thermal processes – General Principle and application of laser beam machining – thermal features, cutting speed and accuracy of cut. Application of plasma for machining, metal removal mechanism, process parameters, accuracy and surface finish and other applications of plasma in manufacturing industries. Chemical machining-principle-maskants–etchants-applications. Magnetic abrasive finishing, Abrasive flow finishing, Electro stream drilling, Shaped tube electrolytic machining.

MEC442 - Automobile Engineering

Credits: 3

The course will cover the various components of an automobile system such as engine, transmission system, braking system, suspension system, axle and steering system. The competency of analyzing the performance of

vehicle is developed through this course. The students will be exposed to different aspects of an automobile such as wheel alignment and balancing, air-conditioning and exhaust emissions control techniques. Finally, it provides an overview of the influential automobile technologies such as electric vehicles, hybrid vehicles, and solar vehicles, etc. Unit 1: Introduction Concept of Automobile, Automobile layout, Parts of an Automobile and their functions, Chassis layout and frames, Automobile Industry in India. Unit 2: Engines in Automobiles Engine and its components, Four Stroke petrol and diesel engines, Multicylinder engines, Fuel systems for petrol and diesel engines, cooling and lubrication systems, Engine fuels, Performance analysis of IC engines Unit 3: Transmission System Clutches: Functions and requirements of clutch, Construction and working of various types of clutches such as single plate clutch, multiplate clutch, centrifugal clutch and electromagnetic clutches, Design of single plate and multiplate clutches Gearboxes: Functions and need of gear box, Types of transmission gear boxes like Sliding mesh, Constant mesh, Synchromesh and Epicyclic/Planetary gear box Automatic transmission devices: Fluid coupling and Torque Converter. Propeller shaft, differential and axle: Propeller shaft, Universal coupling, Rear axles, Final drive, Differential Unit 4: Brakes and Suspension System Braking system: Principle of braking, Construction and working of Drum and Disc type brakes, Hydraulic brakes, Pneumatic brakes, Vacuum brakes, Power brakes, Parking brake, Anti-lock braking system (ABS). Calculation of braking force, torque and efficiency Suspension system: Objectives of Suspension System, Terminologies, Types of suspension springs- like leaf, coil and torsion bar, Shock absorbers, Telescopic shock absorber, Front wheel independent suspension (IFS), Rear wheel independent suspension (IRS), Spring deflection and calculations Unit 5: Front Axles and Steering System Axles: Front axle system and construction Steering system: Principle of correct steering and layout of steering system, Ackermann's steering mechanism, Types of steering systems, Rack and pinion type gear arrangement, Steering geometry, Oversteer and Understeer. Unit 6: Vehicle Performance Characteristics Vehicle performance parameters, Aerodynamic resistances, Tractive resistances, Power

requirement for propulsion. Unit 7: Wheel and Tyres Wheel types, Tyres types, Wheel alignment and balancing. Unit 8: Automobile Air conditioning: Basic working principle, Layout of Equipments, Specifications, Refrigerants used in automobile air conditioning Unit 9: Exhaust Emissions Control in Automobiles: Major Pollutants from Automobiles and its sources, Exhaust emissions control techniques such as Injection timing control, Exhaust Gas Recirculation (EGR), Catalytic Converter Unit 10: Recent Development in Modern Vehicles Electric vehicles, Solar car and hybrid vehicles, Latest trends

MEC443 - Manufacturing with non-metals

Credits: 3

The main objective of the course is to impart an understanding of the manufacturing science and engineering of non-metals. The course deals with the study of the basic nature of different non-metals and the manufacturing processes associated thereof. The various non-metals covered in the course include glasses, ceramics, plastics and different types of composite materials.

MEC450 - Dynamics of Machines

Credits: 3

To introduce the basic concepts of machines and their associated mechanisms. The velocity and acceleration analysis of different mechanisms are required for designing different machine parts.

MEC451 - Dynamics of Machines Lab

Credits: 1.5

In this laboratory, students will learn to design various experiments related to dynamics of machines. Experiments on Universal vibration set-up, whirling of shaft, Gyroscopic law verification and static & dynamic balancing of shaft will be conducted.

PHY711 - Introduction to General Relativity

Credits: 3

In all academic disciplines other than General Relativity, space and time are believed to be merely the passive

medium in which everything else takes place. In General Relativity, the stage itself becomes one of the major players in the drama! In the past hundred years, not only have these counter-intuitive ideas been experimentally verified, they have also shaped our thinking about some of the most fundamental questions about the nature of reality. A firm grounding in General Relativity is absolutely necessary to understand the current exciting advancements in various fields such as Gravitational Waves, Black Hole Physics, Relativistic Astrophysics, Cosmology, Quantum Field Theory in Curved Spacetime, extra dimensions, Quantum Gravity etc. Moreover, various ideas in modern theoretical physics (e.g. gauge-gravity duality) also connect the physics of General Relativity (i.e. physics in curved spacetime) with the physics of strongly coupled quantum systems (such as the kind of systems conventionally studied in condensed matter physics). This is an entry level course into the exciting world of General Relativity.

Undergraduate College

FDP101 - Democracy and Justice

Credits: 3

Democracy has emerged as the most desirable, if not the most successful, form of government in the contemporary world. Regardless of whether we like a particular democracy or not, arguments about what is the most legitimate and just form of rule point towards democracy. Why is democracy seen as the most just form of rule? How did such a situation come about historically? Is there evidence to show that, all things considered, democracies are indeed the most just form of government known to us?

Are there specific civic virtues that help democracies flourish? Is there a particular way in which agreement, dissent, cooperation, and conversation between different groups and individuals in a democratic society is to be carried out? Would democracy be a necessary component of a just system of government? And would social justice be a necessary component of democratic government? These are some of the questions that this course will tackle.

FDP102 - Environment and Climate Change

Credits: 3

Since time immemorial, human activities have significantly impacted the nature of our planet. Issues such as depleting resources, climate extremes, land degradation, food insecurity, unsustainable consumption and unequal access to resources, pollution, ecosystem degradation and extinction of species have posed challenges of sustainability that span spatial and temporal scales. However, in the recent past, efforts related to conservation and sustainability have also increased manifold, paving the way for a slightly hopeful future. On the crossroads of these vectors, multiple questions such as: what are the sustainability challenges facing the humanity? how do we measure environmental footprints? how do we assess uncertainties and risks? who bears the burden of costs and risks? can we make our consumption behavior sustainable? how do we create, replicate and upscale innovative ideas? how do we evolve a just governance system to share costs and benefits equitably?, etc. need to be addressed and answered. The millennials must be equipped to comprehend and answer these questions in a meaningful and an engaging manner. This course, through an integration of diverse domains - materials, data science, biology and life, behaviour, communication, and constitution and civilization, will expose students to 1. appreciate and develop an integrated understanding of these issues and their interactions, 2. learn to use the tools and skills to measure and communicate these issues and 3. explore innovative solutions and implement these to accelerate transformation towards creating a sustainable society.

FDP104 - Water

Credits: 3

The two extreme points from where we look at water could be "Water is life, and clean water means health" - Audrey Hepburn, or an extremely scary angle e.g., "World War III will be fought over water"- Special Broadcasting Service (Aug 17, 2017). Both highlight the urgency for us to act - as citizens and as scientists. However, how much do we think of water? How much do we know of this resource apart from what we have read in our school textbooks? Is the water crisis real? Are we taking the right decisions today to secure a better

future for the coming generations? How can I, as an individual and as a community participate in the process? Also, as the driver for all forms of life on earth, water is an excellent solvent, however, this excellent solvent's characteristic, when combined with its flow, makes it a potent carrier of pollutants and pathogenic microorganisms that are often harmful to health. So, what makes water safe to consume and use for many other purposes? Is the water in surface and groundwater bodies in the Ahmedabad area safe for all forms of life? Is it potable? This course will turn students into aware citizens of the country by enabling them to ask relevant questions around the subject of water.
