PSG Institute of Management
PSG College of Technology

MBA

Regulations
and
Syllabus 2021

(Updated in Feb 2023)

PSG COLLEGE OF TECHNOLOGY
COIMBATORE - 641 004
(Autonomous College affiliated to Anna University, Chennai)

MASTER OF BUSINESS ADMINISTRATION
DEGREE PROGRAMME

2021 SCHEMA AND SYLLABUS

VISION

To be a leader amongst the private business schools in India, by proactively engaging with our stakeholders in academics, research and skill development and bench-marking ourselves with the best-in-class standards of business education

MISSION

- Empower – Empower Individuals to achieve their managerial and entrepreneurial potential.
- Innovate – Develop innovative teaching and learning methodologies.
- Research – Focus on academic and industry based research relevant to the region.
- Nurture – Nurture and enhance the institute's visibility, growth and value by espousing ethics and social responsibility and by collaborating with institutional and professional stakeholder groups.

Program Educational Objectives

PEO1 : To be a competent manager
PEO2 : To identify and prepare for entrepreneurial opportunities
PEO3 : To deliver value to society stakeholders

Program Outcomes

PO1 : Competent in communication at interpersonal and organizational level
PO2 : Exhibit relevant domain knowledge and skills
PO3 : Able to manage task complexities in a cross functional environment
PO4 : Arrive at informed decisions through critical thinking
PO5 : Develop and exhibit entrepreneurial skills
PO6 : Be sensitive towards society by espousing ethics, social responsibility and sustainable practices

PSG COLLEGE OF TECHNOLOGY, COIMBATORE - 641 004
(Autonomous College affiliated to Anna University, Chennai)

2021 REGULATIONS OF MBA DEGREE PROGRAMMES
(for the batches of students admitted in 2021-22 and subsequently under Choice Based Credit System)

NOTE: The regulations hereunder are subject to amendments as may be made by the Academic Council of the College from time totime. Any or all such amendments will be effective from such date and to such batches of students (including those already in the middle of the programme) as may be decided by the Academic Council.

1. **a. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

   In the following Regulations, unless the context otherwise requires

   i. "Programme" means Degree Programme, such as MBA, MBA (Waste Management and Social Entrepreneurship) Programme

   ii. "Course" means a theory or practical subject that is normally studied in a semester, such as Research Methods, Financial Management and the like.

   iii. "University" means Anna University, Chennai.

   b. CONDITIONS FOR ADMISSION

   Students for admission to the first semester of the Master of Business Administration (MBA)/ Master of Business Administration (Waste Management and Social Entrepreneurship) (MBA (WM&SE))programmes of Anna University, Chennai will be required to satisfy the eligibility qualification for admission in Section 3 or any other examination of any recognized University or authority accepted by Anna University, Chennai as equivalent thereto. The students shall also be required to satisfy all other conditions of admission thereto prescribed by the University and Government of Tamil Nadu.

2. **DURATION OF THE PROGRAMME**

   i. **Minimum Duration:** The programme will extend over a period of two academic years, leading to the Degree of Master of Business Administration (MBA), Master of Business Administration (Waste Management and Social Entrepreneurship) (MBA (WM&SE)) in full time mode. An academic year is divided into two semesters.Each semester shall normally consist of 90 working days including examination days.

   ii. **Maximum Duration:** The student shall complete the MBA, MBA (WM&SE) full time degree programmes in 2 years (4semesters), but not more than 4 years. These durations are to be reckoned from the commencement of the semester to which the student was first admitted to the programme.

3.   QUALIFICATIONS FOR ADMISSION

The MBA degree programme offered and the eligible qualifications for admission to the respective programmes are listed below:

Department	Degree Programme offered	Eligible Qualification for Admission (Note 1)	Minimum Credits
Management Sciences	**MBA**	As per ANNA UNIVERSITY norms	92
	MBA (WM&SE)		93

Note 1: Eligible Qualification is subject to amendments as may be made by the University from time totime.

4. STRUCTURE OF PROGRAMMES

i. The course work of the odd semesters will normally be conducted only in odd semesters and that of the even semesters only in even semesters.

ii. Curriculum: The curriculum for each program will comprise courses of study as given in section 13 infra in accordancewith the prescribed syllabi.

iii. Core Courses: Every student shall undergo professional core courses, professional elective courses and employability enhancement courses as given in section 13 infra. Every student shall opt for electives from the list of electives relating to his/her degree programme as given in section 13 in consultation with the Tutor, Programme Coordinator and the HoD. However, a student may be permitted to take a maximum of two professional electives from the list of professional elective courses of the other MBA degree programme with specific permission from the HoD.

iv. Audit Courses: Every student shall undergo one audit course relating to his / her degree programme. These are the courses for the purpose of self-enrichment and academic exploration. There is no requirement on minimum number of credits to be earned for this category of courses but a pass is mandatory. The students will be evaluated by a committee of the faculty members of the department and the Pass/Re-appearance (RA) will be transferred to grade sheet. Assessment includes presentations on literature review from reputed journal papers, preparation of review papers, presentation of technical reports and viva voice. However, this assessment is not included in the computation of CGPA.

v. Online Courses (SWAYAM based NPTEL, GIAN, NISM, NSE-NCFM, NCCMP,AMFI, IRDA): Students can register and earn credits for online courses approved by department committee consisting of HoD, Programme Coordinator, Tutor and Subject Expert. Students who complete relevant online courses (having 3 credits only) successfully to a maximum of 6 credits may obtain exemption from studying two Professional Electives. The list of online courses is to be approved by the Chairman, Academic Council on the recommendation of HoD at the beginning of the semester if necessary, subject to ratification in the subsequent Academic Council meeting. For earning credits through online courses, students will be evaluated within the institute and will be recommended grades based on assessment given in Section 8. Students may do online courses during the third and fourth semester.

vi. Self-Study Courses: A student can opt for Self Study of a Professional Elective on specific approval of HoD provided the student does not have current arrears. The students shall study on their own under the guidance of a faculty member approved by the Head of the Department who will be responsible for the periodic monitoring and evaluation of the course. No formal lectures would be delivered. The self-study course can be considered as equivalent to studying one professional elective course

vii. Internship: Every student of MBA shall undertake an internship at the end of second semesterin an industry / research organization in consultation with the faculty guide and theHoD and the

same shall be jointly supervised by a faculty guide and an expert from the organization. Each candidate is expected to prepare a report about the internship and make a presentation of the same. This will be evaluated by experts from industry and academia. Every student of MBA (WM&SE) shall undertake three internships as mentioned in infra 13 adhering to the norms mentioned above.

viii. Project: Every student of MBA shall undertake a suitable project in consultation with the faculty guide and the HoD. The Project is divided in two phases. Project Phase-1 shall be done by the student in the third semester and Project Phase-2 in the fourth semester. The student shall review literature relevant to the specific area of research, frame a set of questions relevant to the project, gather and analyse data appropriate to address those questions, draw conclusions, prepare a detailed report and do an oral presentation of the research findings.

ix. Course Enrollment and Registration:

a) Each student, on admission shall be assigned to a Tutor who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.

b) Each student on admission shall register for all the courses prescribed in the curriculum in the student's first semester of study.

c) From second semester onwards, a student has the option to drop a maximum of two theory courses except Professional Core Courses in a semester and a student has the option to study two additional theory courses which shall be only Professional Electives. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits including courses for which the student has registered for redo.

d) In case of a student dropping a course of study (other than professional core courses) in one semester, he/she shall register for that course in the next given opportunity and earn necessary attendance in that course exclusively to become eligible to appear for the semester examination in that course.

e) The courses to be offered in a semester for candidateswho need to reappear (as per 5 (iii) a infra), attendance shortage candidates etc., will be decided by HoD.

f) After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.

The enrollment for all the courses of the Semester II to IV for all the programs will commence 10 working days prior to the last working day of the preceding semester. The student shall enroll for the courses with the guidance of the Tutor. If the student wishes, the student may drop or add courses subject to eligibility within five working days after the commencement of the concerned semester and complete the registration process duly authorized by the Tutor.

x. Credit Assignment: Each course is assigned certain number of credits based on the following:

Contact Period per week	Credits
One Lecture Period	1
One Tutorial Periods	1
Two Practical Periods (Laboratory / Seminar / Project Phase-1 and 2 / etc.)	1
Audit Courses	No Credits

The Contact Periods per week for Tutorials and Practical sessions can only be in multiples of 2. The number of credits assigned to the different courses is shown in section 13.

xi. **Minimum Credits:** For the award of the degree, the student shall earn a minimum total creditsof 92 for MBA and 93 for MBA (WM&SE) by passing the prescribed courses of study as given in Section 13.

xii. **Medium of Instruction:** The medium of instruction for examinations, project report etc. shall beEnglish only.

5. REQUIREMENTS OF ATTENDANCE AND PROGRESS

i) A student will be qualified to appear for end semester examinations in a particular course of a semester only if

   a) he/she has satisfied the attendance requirements as per the norms given below:

   - Shall secure not less than 75% attendance in that course

   - If a student secures attendance 65% or more but less than 75% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Chairman, Sports Board and HoD concerned, the student shall be given exemption from the prescribed attendance requirement and shall be permitted to appear for the end semester examination of that course.

   b) his/her academic progress has been satisfactory and

   c) his/her conduct has been satisfactory.

ii) A student shall normally be permitted to appear for end semester examination of the course if the student has satisfied the attendance requirements (vide Clause 5 (i) supra) and has registered for examination in those courses of that semester by paying the prescribed fee.

iii) a) Students who do not satisfy clause 5(i) supra will not be permitted to appear for the end semester examination / evaluation of that course/s. They have to register and redo those courses in a subsequent semester when it is offered next, earn necessary attendance and continuous assessment(CA) marks and appear for end semester examinations.

   b) If the total number of "Redo" courses at the end of any semester is more than TWO for a student, he/she will not be eligible to register for next immediate odd and further semester courses.

   Such students will be permitted to register for those semester courses only when offered next, subject to the condition that the number of "Redo" courses is less than or equal to TWO at the time of registration.

   c) If a student with more than TWO "Redo" courses is in the last batch of his/her current regulation then,

   i. the courses which he/she has to redo in the next regulation instead of the redo courses in the current regulation

   ii. the passed courses in the current regulation which could be / could not be found equivalent to courses in next regulation for the purpose of calculation of CGPA and

   iii. the courses inthe next regulation which he/she has to study on own without attendance requirement

shall be identifiedand the student willbe permitted to redo the courses under the new regulation accordingly.

    iv) A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.

    v) In respect of students who complete a part of the academic programme either one or two semesters under the student exchange scheme in approved foreign Universities, the transfer of credits of equivalent courses completed by them in the foreign university will be approved; and in the case of the remaining courses of the respective semester(s) which they have not studied in the respective regulation, they shall register for those courses within the next two or subsequent semesters on a self-study basis. Such an appearance of the student in those courses will be treated as first appearance for the purpose of classification. (Vide sections infra 10 (A, B, C & D)).

6. DISCIPLINE

    i) Every student is required to observe discipline and decorous behaviour both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the college. The Head of the Institution shall constitute a disciplinary committee to enquire into acts of indiscipline and notify the punishment.

    ii) If a student indulges in malpractice in any of the examinations, he/she shall be liable for punitive action as decided by the Board of Examiners

7. PROCEDURE FOR REJOINING THE PROGRAMME

A student who desires to re-join the program after a period of discontinuance or who upon his/her own request is permitted by the authorities to repeat the study of any semester, may join the semester which he/she is eligible or permitted to join, only at the time of its normal commencement for a regular batch of students and after obtaining the approval from the University and Commissioner of Technical Education. No student will however be enrolled in more than one semester at any time.

8. ASSESSMENT AND PASSING REQUIREMENTS

    i. Assessment: The assessment will comprise of either Final Examination (FE) for 50 marks and Continuous Assessment (CA) for 50 marks OR Continuous Assessment for 100 marks as specified in the scheme in section 13 infra. For Theory courses, the CA marks will be scaled down from 50 to 40 marks and the Final Examination (FE), which will be conducted for 100 marks, will be scaled down to 60 marks and the total being 100 marks (CA 40 + FE 60). For Laboratory courses including Project work, the Continuous Assessment (CA) marks will be scaled up from 50 to 60 marks and the Final Examination (FE) marks which will be conducted for 50 marks will be scaled down to 40 marks. The award of grades for a course will be done on Relative Grading System or on Absolute Grading System as specified in section 8(vi) (a) supra.

    ii. Semester End Examinations: Semester end examinations will normally be conducted during October / Novemberand during March / April of each year. Supplementary examinations may be conducted at such times as may be decided by the college.

    A student will be permitted to appear for the Final Examination in a course only if he/she has completed the study of that course.

    iii. Internship: Every student shall submit a report on internship/s on dates announced by the college / department through the HoD. If a student fails to submit the report on the internship/s, he/she is deemed to have failed in it.

Every student shall make presentation about the internship/s before a review committee constituted by the HoD. The internship/s will be evaluated based on the presentation, reports and viva-voce examination.

The evaluation ofinternship/s will be carried out in the semester indicated in infra 13 and the results of the same will bepublished along with other courses of that semester.

iv. **Project Phase-1 for MBA:** Every student shall submit a report on Project Phase-1 on dates announced by thedepartment through the faculty guide to the HoD. If a student fails to submit the report on Project Phase-1 on or before the specified date, he/she is deemed to have failed in it.

The student shall also present seminars about the progress of the Project Phase-1 during the semester. The seminars shall be presented before a review committee constituted by the HoD.

The Project Phase-1 will be evaluated based on the seminars, report and a viva-voce examination. The viva-voce examination will be carried outby a team consisting of an internal examiner, usually the faculty guide, and an external examiner, appointed by the HoD.

A student who fails in Project Phase-1 shall register for redoing the same at the beginning of the subsequent semester. However, the student will be allowed to enrol for Project Phase-2 along with Project Phase-1 during the beginning of the subsequent semester for satisfactory completion of both the courses.

v. **Project Phase-2 for MBA:** Every student shall submit a report on Project Phase-2 on dates announcedby the HoD. If a student fails to submit the report on Project Phase-2 on or before the specified date, he/she is deemed to have failed in it.

The student shall also present seminars about the progress of the Project Phase-2 during the appropriate semester. The seminars shall be presented before a review committee constituted by the HoD.

The Project Phase-2 will be evaluated based on the seminars, report and a viva-voce examination. The viva-voce examination will be carried out by a team consisting of an internal examiner, usually the faculty guide, and an external examiner, appointed by the HoD. The continuous assessment marks of Project Phase-2 shall not be carried over to the next appearance, if the student has failed in the same.

A student who fails in Project Phase-2 shall register for repeating the same at the beginning of the subsequent semester.

vi. **Grade and Grade Point:** Each student, based on his / her performance, will be awarded afinal grade and grade point as given in the table infra for each course at the end of each semester by following relative grading system and absolute grading system

a. **Relative Grading System**

In this system, the grades are awarded to the students based on their performance relative to others in Theory courses having Continuous Assessment (CA) and Final Examination (FE) components.

For each course, the total mark M ie., the sum of Continuous Assessment marks (CA) and Final examination marks (FE) in the case of theory courses or CA in the case of courses with 100% Continuous Assessment component is computed for every candidate.

The students who secure the total mark M as detailed below are first declared as fail (RA) in a course.

Marks scored in FE is less than 50%	Grade: RA

(or) M less than 50% of total marks	

Note:

- "RA" denotes reappearance in a course

  After omitting the marks (M) of all failed students, if the number of students who have passed in a course is more than 30, Relative Grading system shall be followed and if it less than or equal to 30, Absolute Grading System shall be followed. For awarding grades by Relative Grading System, the software developed by Anna University shall be used and it normalizes the result data by using BOX-COX transformation method.

  Then letter grade and grade point to each student are awarded as given in the table below.

Letter Grade	Grade Points, g
O (Outstanding)	10
A + (Excellent)	9
A (Very Good)	8
B + (Good)	7
B (Average)	6
C (Satisfactory)	5
RA (Re-appearance)	0
SA (Shortage of Attendance)	0
W (Withdrawal)	0

b. Absolute Grading System

If the number of students registered for a particular course or if the number of students who have passed a particular course is less than or equal to 30, absolute grading system will be followed. The letter grade and mark range are given in table below.

Letter Grade	Mark Range	Grade Point, g
O	91 – 100	10
A+	81 – 90	9
A	71 – 80	8
B+	61 – 70	7
B	56 – 60	6
C	50 – 55	5
RA	< 50	0
W(Withdrawal)	0	0
SA (Shortage of Attendance)	0	0

"RA" denotes Reappearance in a course.

The grades RA and SA will not figure in the grade sheet.

c. For online courses the following grading pattern is applicable in case of credit transfer and CGPA calculations.

Letter Grade	Mark Range	Grade Point, g
O	91 – 100	10
A+	81 – 90	9
A	71 – 80	8
B+	61 – 70	7
B	56 – 60	6
C	50 – 55	5

RA	< 50	0
W(Withdrawal)	0	0
SA (Shortage of Attendance)	0	0

vii. Cumulative Grade Point Average: After the completion of the programme, the Cumulative GradePoint Average (CGPA) from the first semester to final semester is calculated using the formula.

$$CGPA = \frac{\sum g_i{}^* C_i}{\sum C_i}$$

where g_i is Grade point secured corresponding for i^{th} course
C_i is Credit allotted for i^{th} course

viii. Passing a course:

a. A student shall be deemed to have passed any course with CA and FE components, if

    i.   he/she secures at least 45% of the total marks in the final examination and

    ii.   he/she secures not less than 50% of total marks [CA and FE put together] prescribed for the course shall be declared to have passed the course and acquired the relevant number of credits.

A student is deemed to have passed in any course carrying only Continuous Assessment marks if the total mark secured by him/her is at least 50% of total marks.

b. A student, who is absent or has failed in the semester end examinations in any course carrying Continuous Assessment and Final Examination has to register for the examination in that course when it is conducted next time either by retaining or by not retaining the CA marks already earned
    i. A student after choosing the option as not retaining CA in second attempt shall have to continue to register for further appearances in the same option only, till he/she obtains a pass
    ii. A student after choosing the option as retaining CA in second attempt may continue to appear for further appearances in that option or at any time can switch over to the option of not retaining the CA which shall be final till he/she obtains a pass

c. A student, who after having earned necessary attendance has failed in any course carrying only continuous assessment marks, will register for the examinations when it is conducted next time and will be solely assessed in the semester end examinations carrying entire marks of that course.

d. A student who has earned necessary attendance in the course Project Phase-2 but does not submit the report on Project Phase-2 on or before the date specified by the college / department, shall be deemed to have failed in the Project Phase-2 and awarded grade RA and will have to register for the same at the beginning of the subsequent semester, redo and submit the project report at the end of that semester and appear for the final examination, the CA mark earned afresh.

e. A student who has earned necessary attendance in the course Project Phase-2 but whose project report is not accepted for reasons of incompleteness or other serious deficiencies will be treated as "absent" and will have to register for the same at the beginning of the subsequent semester, redo and submit the project report at the end of that semester and appear for the final examination, the CA mark earned afresh.

f. A student who has submitted the report on Project Phase-2, but could not appear for the semester end examination on the scheduled date, shall be deemed to have failed in the Project Phase-2 and awarded grade RA and will have to register for the same at the

beginning of the subsequent semester, Redo and submit the project report at the end of that semester and appear for the final examinations, the CA mark earned afresh.

g. If a student is absent or has failed in an elective course, he/she may register for the same course as detailed in 8 (b) above or for any other elective in the subsequent semester by registering afresh.

h. A student who is not eligible to write the end semester examination in any course due to lack of attendance, will be awarded grade SA and the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per section 5 supra. If the course, in which the student has lack of attendance, is a Professional Elective the student may register for the same or any other Professional Elective course in the subsequent semesters.

i. A student after registering for a course may withdraw his / her registration between first & second CA Test on valid reasons.

j. For MBA, out of the required eight Professional Electives to be studied, the student shall study a minimum of six electives from the list of Professional Electives prescribed in their scheme of examinations without fail and can study the remaining two Professional Electives either from the list prescribed in the scheme or as online courses / special courses by obtaining equivalence.

In case, the student completes more than eight Professional Electives, six Professional Electives with highest grade among all the Professional Electives studied under the scheme and two courses with next highest grade among all remaining courses studied by the student will be considered for calculation of CGPA; however the grades obtained in all other left over courses will also appear in the grade sheet.

For MBA (WM&SE), a maximum of two electives can be done online.

k. A student who is absent in the final semester examination of a course after registering for the same will be considered to have appeared and failed in that examination and awarded grade RA.

ix. Supplementary Examinations:
For Supplementary Examinations / Examinations for any course under REDO category, absolute grading will be followed irrespective of whether the grading was originally under Relative Grading System or Absolute Grading System.

9. QUALIFICATION FOR THE AWARD OF DEGREE

A student will be declared to have qualified for the award of the MBA, MBA (WM&SE) degree provided

i. the student has successfully completed the course requirements and has passed all the prescribed courses of study of the respective programme listed in section 13 infra within the duration specified in section 2(ii) supra and earned the total number of credits as specified in the curriculum of the respective programme of study. However, if the student wishes, he/she may be permitted to earn more than the total number of credits prescribed in the curriculum of his/her programme.

ii. no disciplinary action is pending against the student.

10. CLASSIFICATION OF DEGREE

A) FIRST CLASS WITH DISTINCTION

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction.

- Should have passed the semester end examination in all the courses of all the four semesters in his/her First appearance within 3 years, which includes authorized break of study of one year. Withdrawal from examination (vide clause 11) will not be considered as an appearance.

- Should have secured a CGPA of not less than 8.50.

- One year authorized break of study (if availed of) is included in the three years for award of First class with Distinction.

- Should not have been prevented from writing semester end examination due to lack of attendance in any of the courses.

B) FIRST CLASS

A student who satisfies the following condition shall be declared to have passed the examination in First Class.

- Should have passed the examination in all the courses of all four semesters **within three years.**

- One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the duration of three years for award of First class.

- Should have secured a CGPA of not less than 6.5

C) SECOND CLASS

All other students (not covered in clauses 10 A and B) who qualify for the award of the degree shall be declared to have passed the examination in Second class.

D) RANK

A student shall be eligible for award of ranking only if he/she has passed the examination in first class or first class with distinction in the first available chance (i.e., first attempt in all the courses). Those who have availed the provision of break of study / withdrawal will not be eligible for ranking.

11. WITHDRAWAL FROM EXAMINATION

i. A student may, for valid reasons, be granted permission to withdraw from appearing for the examination in any course or courses of only one semester examination during the entire duration of the degree programme, if he/she does not have any history of arrears at the time of request for withdrawal. Prior permission for withdrawal from semester examinations is to be obtained from Principal. Also, only one application for withdrawal is permitted for that semester examination in which withdrawal is sought.

ii. Withdrawal application shall be valid only if the student is otherwise eligible to write the examination and if it is made prior to the commencement of the semester examination or on the day of the examination of a course / set of courses and also recommended by the HoD and the Principal.

12. TEMPORARY BREAK OF STUDY

i. Under Choice Based Credit System, students will have the provision to take a break of study at the beginning of a semester to re-do or complete the reappearance courses of previous

semesters or on valid reasons (such as accident or hospitalization due to prolonged ill health) and rejoin the programme in a semester which he/she is eligible and he/she shall apply to the Principal through the HoD stating the reasons therefore.

ii. A student permitted for break of study shall rejoin the programme at the respective semester as and when it is offered subject to the approval of Commissioner of Technical Education and Anna University, Chennai and shall be governed by the rules and regulations in force at the time of rejoining.

iii. The duration specified for passing all the courses for the purpose of classification (vide section 10 supra) shall be increased by the period of such break of study permitted.

iv. The total period for completion of the programme reckoned from the commencement of the semester to which the student was first admitted shall not exceed the maximum period specified in section 2 (ii) supra irrespective of the period of break of study in order that he/she may be qualified for the award of the degree.

v. If any student is detained for want of requisite attendance, progress and conduct, the period spent in that semester shall not be considered as permitted 'Break of Study' and section 12 (iii) supra is not applicable for such cases

13. MBA SCHEMA

Course Code	Course Title	Hours/Week			Credits	Maximum Marks			Category
		Lecture	Tutorial	Practical		CA	FE	Total	
						Minimum Credits to be Earned =			92
SEMESTER - I									
21GM01	Fundamentals for Managers	45 Hours			-	-	-	-	MC
21GM11	Business Environment	3	0	0	3	50	50	100	PC
21GM12	Economics for Decision Making	3	0	0	3	50	50	100	PC
21GM13	Managerial Communication	3	0	2	4	50	50	100	PC
21GM14	Accounting for Managers	4	0	0	4	50	50	100	PC
21GM15	Organizational Behaviour	4	0	0	4	50	50	100	PC
21GM16	Research Methods	3	0	0	3	50	50	100	PC
21GM17	Spreadsheet Applications	0	0	2	1	100	-	100	EEC
21GM18	Active Learning Program – 1*	0	0	4	2	100	-	100	EEC
21GM19	Managers in Society	0	0	4	2	100	-	100	EEC
	Total Credits	20	0	12	**26**	600	300	900	
SEMESTER - II									
21GM20	Financial Management	3	0	0	3	50	50	100	PC
21GM21	Human Resource Management	3	0	0	3	50	50	100	PC
21GM22	Marketing Management	3	0	0	3	50	50	100	PC
21GM23	Operations Management	3	0	0	3	50	50	100	PC
21GM24	Business Analytics	3	0	0	3	50	50	100	PC
21GM25	Business Law	2	0	0	2	50	50	100	PC
21GM26	Information Systems Management	0	0	4	2	100	-	100	PC
21GM27	Emotional Intelligence for Managers	1	0	0	1	100	-	100	EEC
21GM28	Business Beyond Borders	0	0	4	2	100	-	100	EEC
21GM29	Active Learning Program – 2*	0	0	4	2	100	-	100	EEC
	Total Credits	18	0	12	**24**	700	300	1000	

* Experiential course scheduled for week ends

Course Code	Courses	Hours/Week			Credits	Maximum Marks			Category
		Lecture	Tutorial	Practical		CA	FE	Total	
SEMESTER - III									
21GM31	Summer Internship	0	0	8	4	100	-	100	EEC
21GM32	Strategic Management	0	0	6	3	100	-	100	PC
21_____	Elective 1	3	0	0	3	50	50	100	PE
21_____	Elective 2	3	0	0	3	50	50	100	PE
21_____	Elective 3	3	0	0	3	50	50	100	PE
21_____	Elective 4	3	0	0	3	50	50	100	PE
21_____	Elective 5	3	0	0	3	50	50	100	PE
21GM33	Project Phase-1	0	0	6	3	50	50	100	EEC
21GM34	Audit Course	2	0	0	Grade	100	0	100	MC
	Total Credits	17	0	20	**25**	600	300	900	
SEMESTER - IV									
21GM41	Entrepreneurship and New Venture Creation	0	0	4	2	100	-	100	EEC
21_____	Elective 6	3	0	0	3	50	50	100	PE
21_____	Elective 7	3	0	0	3	50	50	100	PE
21_____	Elective 8	3	0	0	3	50	50	100	PE
21GM42	Project Phase-2	0	0	12	6	100	100	200	EEC
	Total Credits	9	0	16	**17**	350	250	600	

Category: MC- Mandatory Course,   PC – Professional Core,   PE – Professional Elective,   EEC – Employability Enhancement Course
CA- Continuous Assessment, FE- Final Examination

LIST OF ELECTIVE COURSES

Finance Electives

21GA01	Applied Financial Econometrics
21GA02	Banking and Financial Services
21GA03	Empirical Research in Finance
21GA04	Financial Analytics
21GA05	Financial Derivatives
21GA06	Financial Risk Management
21GA07	Fixed Income Securities
21GA08	International Financial Management
21GA09	Investment and Portfolio Management
21GA10	Investment Banking
21GA11	Project Appraisal and Finance
21GA12	Venture Capital and Private Equity
21GA13	Financial Modeling

Human Resource Electives

21GB01	Behaviour For Managerial Effectiveness
21GB02	Compensation and Benefits Management
21GB03	Conflict Management
21GB04	Labour Legislation and Industrial Relations
21GB05	Leading Organizational Change and Development
21GB06	Learning and Development
21GB07	Managing Global Workforce
21GB08	People Analytics
21GB09	Performance Management
21GB10	Talent Acquisition and Management

Marketing Electives

21GC01	Brand Management
21GC02	Consumer and Buyer Behaviour
21GC03	Customer Relationship Management
21GC04	Inbound Marketing
21GC05	Integrated Marketing Communication
21GC06	Marketing Analytics
21GC07	Marketing Logistics
21GC08	Retail Management
21GC09	Sales and Market Development
21GC10	Services Marketing

Decision Science Electives

21GD01	Design Thinking
21GD02	Industrial Management
21GD03	New Product Development
21GD04	Operations Modelling and Simulation
21GD05	Project Management
21GD06	Supply Chain Management
21GD07	Technology Management
21GD08	Theory of Constraints
21GD09	Total Productive Maintenance and Lean Management
21GD10	Total Quality Management
21GE01	E-Business Models
21GE02	Information Security Management
21GE03	Materials Management
21GE04	Production Planning
21GE05	Artificial Intelligence and Internet of Things
21GE06	Data Visualization
21GE07	Machine Learning
21GE08	Prescriptive Analytics
21GE09	Python Programming for Analytics

SEMESTER I

21GM01	FUNDAMENTALS FOR MANAGERS

Course Overview

This course will enable the student to gain valuable insights into the fundamentals of management and the functions of a manager. It will also provide knowledge of basic tools and techniques that can be used to enhance the performance and effectively manage people in an organization.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the fundamentals of management andApply the directing, coordinating and controlling functions in management		3				
CO2	Comprehend the accounting cycle and prepare financial statements		3	2			
CO3	Apply basic mathematical and statistics concepts to business situations		2				

UNIT 1: Management Concepts	15 Hours

Definition of Management - Development of management thoughts - Contributions of Fayol& Taylor - Functions and Skills of Managers - Planning - Setting Objectives – Strategies - Policies and Planning Premises - Forecasting - Steps involved in Planning - Organising: Organization Chart – Structure and Process - Departmentation by different strategies, Benefits and Limitations - De-Centralization and Delegation of Authority – Directing – Essentials elements, Principles of directing, Importance of effective Direction, Essential of a good order – Coordinating – Need, Types, Techniques, Coordination and managerial functions – Controlling – The Control Process – Critical Control Points. Standards and Benchmarking Budget as a Control Device – Use of Information Technology in Control.

Unit 2 : Basic Accounting	15 Hours

Generally Accepted Accounting Principles - Accounting Standards; Financial Accounting – Users of Accounting Information – Accounting cycle – Accounting Process; Accounting Equation - Classification of Accounts – Trial Balance - Preparation of Profit and Loss Account and Balance Sheet

Unit 3 : Basic Mathematics	15 Hours

Probability – Discrete probability distribution - Expected monetary value; Continuous probability distribution – Cumulative probability distribution –Normal distribution - Conditional probability; Linear programming problem formulation – Solving LPP by Graphical method - Project network diagram - Critical path method - Program evaluation and review technique

	Total : 45 Hours

Reference Books

1. Charles W. L. Hill and Steven Mcshane, "Principles of Management", McGraw Hill Education, 2017.
2. Harold Koontz and Heinz Weihrich, "Essentials of Management", 10th Edition, Tata McGraw-Hill, 2015.
3. Bhattacharya Aashish, Financial Accounting, Essentials of Financial Accounting, Prentice Hall of India, 4th Edition, 2017.
4. Horngren,CT, Sundem, GL, Elliott, JA, Philbrick, D, Introduction to Management Accounting, Pearson, 16th Edition, 2019.
5. Barnett, R. A., Ziegler, M. R., &Byleen, K. E. "College mathematics for business, economics, life sciences, and social sciences", Pearson Publication, 13th Edition, 2015.
6. Keller, G., "Statistics for Management and Economics, Abbreviated", Cengage Learning, 2015.

21GM11	BUSINESS ENVIRONMENT	30 0 3

COURSE OVERVIEW

The subject is an introduction to the complex environment in which businesses operate, the various drivers and the inter-relatedness of the elements of the environment and the possibility of businesses facing both challenges and getting benefits on account of changes in the business environment, both by way of unanticipated and expected changes. It also introduces economic terms and measures and their use in understanding economic performance. The students also will gain insights into industries and the competitive environments. The course attempts to lay a foundation for strategic management.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Analyze the drivers and components of business environment and their inter-relationships and impact on businesses.			3			
CO2	Evaluate economic data, national and global events and understand the cause-effect and draw conclusions.				3		
CO3	Prepare industry reports and formulate industry analysis using appropriate tools.	3		3		2	
CO4	Understand the role of government, its agencies and their impact on the business environment.		3		3		
CO5	Assess business activities vis-à-vis sustainability and ethics, best practice examples and consequences of non-compliance.	3				2	3

UNIT 1: The Dynamics and Challenges of Business Environment	9 Hours

Defining a business and its role- Defining stakeholder.-Contradictions in business objectives and stakeholder objectives-The role of business in society and economy-The internal and external environments for a business:-An Introduction-the VUCA environment and the business challenges.-Dynamics of the SPECTACLES :Social, Political, Economic, Cultural, Technological, Aesthetic, Customer, Legal, Environmental and Sectoral environment , Analysis and the interconnectedness- The issue of ethics and sustainability in the business environment.

UNIT 2: Analysing Economic Performance	10 Hours

Measuring economic performance.-GDP, GNP, Inflation, Bank rates, Fiscal deficit, Balance of trade, employment and manufacturing data, circular flow, business cycles-Foreign exchange, analysis of import-export and trade balance, stock market indices.
The Indian budget and its impact on the nation-The fiscal and monetary policies and the challenges. The role of RBI and banks.

UNIT 3: Evaluating Competition and Industry Characteristics	8 Hours

Industry SWOT and drivers of industry and the impact of PESTLE on specific sectors- Porter's Five Forces: An overview- Thompson and Strickland 7S model- The value chain and economies of scale, integration and location.

UNIT 4: Analysing Industry Dynamics and Trends	8 Hours

The Economic Geography of India- Sectoral analysis of the Indian economy. -Regulatory perspectives and challenges for the industry categories. The service-manufacturing conundrum.-The role of public sector. An overview of the legal environment.

UNIT 5: Understanding Contemporary Issues and Trends Impacting Business Environment	10 Hours

Globalization and challenges-The digital economy-Development challenges in the Indian context-Emerging alternative business models- Industry 4.0. -Technology as a problem solver in the Indian context-Geo-politics and tipping points -Emerging business trends and challenges.

	Total	45 Hours

Reference Books

1. Paul, Justin, "Business Environment: Text and Cases", 4th Edition, McGraw Hill, 2018.
2. Cherunilam, Francis,"Business Environment", 1st Edition, Himalaya Publishing, 2018.
3. Ahmed M.F. and Alam A, "Business Environment: Indian and Global Perspective", 1st Edition,Prentice Hall, 2014.
4. Paliwal, V K Business Environment, 1st Edition, Prentice Hall of India, 2014
5. Paleri, P, "Business Environment", 1st Edition, Cengage Learning, 2014.

21GM12	ECONOMICS FOR DECISION MAKING	3 0 0 3

COURSE OVERVIEW

Business decisions both tactical and strategic, is based on theoretical knowledge and its practical implications. Economics is the corner stone amongst the decision sciences, for its objective and subjective treatment, presupposing the rationality in thought process. Knowledge of the consumer, firm, industry, market and economy is important in decision making. The course objective is to study the theory, understand the dynamics of the underlying variables and apply the concepts in real life scenarios, for the predicted outcomes.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Analyse cause and effect relationship in demand and supply and its application		3				
CO2	Understand and explain production and expansion path of the firm		3				2
CO3	Analyse price determination and profit maximization in various markets and application				3	**2**	
CO4	Critically analyse macroeconomic fundamentals for decision making			3	3		
CO5	Collate, analyse and infer from macro data with a global perspective			3	3		

UNIT 1: Demand and Supply- Consumer Behaviour	9 Hours
Demand and Supply Function – Types of Equilibrium – Consumers and Producers Surplus – Estimation of Demand Curve – Elasticity Types, Importance and Measurement – Demand Forecasting – Time Series Analysis	
UNIT 2: Production Economics	9 Hours
Production Function – Short Run Law of Variable Proportions – Long Run Returns to Scale –Isoquants and Producer's Equilibrium - Expansion Path – Cost Curves in SR and LR and Revenue Curves - Externalities	
UNIT 3: Market Economics	9 Hours
Equilibrium of the Firm and Industry – Markets – Perfect Competition – Monopoly and Price Discrimination– Oligopoly – Game Theory - Monopolistic Competition	
UNIT 4: Macro Economics	9 Hours
Demand for Money - Supply of Money and its Components – Rate of Interest – Saving and Investment – Multiplier and Accelerator – Monetary Policy and Fiscal Policy	
UNIT 5: International Economics	9 Hours
International Trade – Theories – Balance of Payment – Current and Capital Account – Terms of Trade - Exchange Rate	
Total	**45 Hours**

Reference Books
1. Christopher R. Thomas and S Charles Maurice, "Managerial Economics", Tata McGraw Hill Education,12th Edition, 2020.
2. Karl E. Case, Ray C. Fair, Sharon Oster, "Principles of Economics", Pearson Education, 12th Edition, 2017.
3. N. Gregory Mankiw, "Economics: Principles and Applications", Cengage Learning India Private Ltd, 7th Edition, 2015.
4. Paul A. Samuelson, William D. Nordhaus, "Macro Economics", Tata McGraw Hill Education, 19th Edition, 2018.
5. Richard Lipsey, Alec Chrystal Lipsey Chrystal, "Economics", Oxford University Press, 13th Edition, 2015.

21GM13	MANAGERIAL COMMUNICATION	3 0 2 4

COURSE OVERVIEW

This course is designed to help students in achieving competencies in communication at the interpersonal and organizational level, a skill essential for a successful manager or an entrepreneur. The focus is to impart an understanding of what constitutes effective oral and written communication, the modalities and etiquettes of professional communication, the power of listening, positive communication behaviors, communications in the context of social media and tools and techniques to improve communication skills.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Understand the framework of Business Communication.	3					
CO2	Plan, write, and complete formal business documents.	3		2			
CO3	Analyze the audience needs and deliver effective business presentations	3		3			
CO4	Demonstrate intra and inter departmental communication skills	3					
CO5	Create written professional documents for different stakeholder needs.	3		3			

UNIT 1: Communication Framework	16 Hours

Communication process - Types of Communication - Importance of feedback and Context - Communication networks in organizations, Classification, Role and importance of non-verbal communications, The classification and the art of proactive listening, Barriers to communication and the symptoms of poor communications.

UNIT 2: Preparing Written Business Information	14 Hours

Distinguishing features of professional communication vis-à-vis personal communication- The Writing process for business messages – Key criteria for effective messages- Preparing written communication in the professional context: Proposals, Resumes, and Reports.

UNIT 3: Business Presentations	16 Hours

Planning for presentation-presentation tools, strategies for preparation, presentation and audience engagement- Presentation techniques-Dos and don'ts, effective mapping and checklists for delivering presentations- Developing Public Speaking skills.

UNIT 4: Workplace Communication and Etiquettes	14 Hours

The protocols for good workplace communications, communication hierarchy in an organization- intra and inter departmental communication - Managing communication for events - effective participation in discussions and negotiations- interviewee and interviewer skills- Etiquettes for Managers

UNIT 5: Strategies for Business Writing	15 Hours

Managing the organizational communication processes- communicating good, bad news – writing persuasive messages, Communications in the context of social media, legal aspects of formal and non-formal communications in the managerial context

	Total	75 Hours

Reference Books

1. Erica Dhawan. (2021) , "Digital Body Language: How to Build Trust and Connection, No Matter the Distance ", Harper Collins.

2. Kathryn Rentz, Paula Rentz , Anupam Das, (2020)," Business Communication : A Problem Solving Approach," McGraw Hill,

3. Courtland L Bovee, John V Thill, RoshanLal Raina. (2019), "Business Communication Today", 14th Edition,Pearson Education,

4. Scott Biranto, (2019)," Good Charts Workbook: Tips, Tools, and Exercises for Making Better Data Visualizations", Harvard Business Review Press

5. Geraldine E. Hynes , Jennifer R. Veltsos (2018), " Managerial Communications: Strategies and Applications", 7th edition, SAGE Publications

21GM14	ACCOUNTING FOR MANAGERS	4 0 0 4

Course Overview

This course introduces the financial and cost accounting aspects of a firm. At the end of the course, the student will be able to understand, read and interpret financial statements. The student can use this knowledge to assess a company's performance in relation to its past performance, competitors and industry to make managerial decisions.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Prepare financial statements		3				2
CO2	Analyse the financial performance of a firm by using appropriate tools				3		
CO3	Distinguish the behaviour of various types of costs		3				
CO4	Evaluate managerial decisions using cost data				3		
CO5	Apply accounting knowledge for planning and control			3	3		

UNIT 1: Corporate Financial Statements	12 Hours
Understanding and preparing corporate profit and loss statement with adjustments, Balance Sheet and Cash Flow Statement – Overview of IFRS – Ethics in Accounting	
UNIT 2: Analysis of Financial Statements	**12 Hours**
Analysis of Financial Statements – Multi-Step Income Statement – Horizontal Analysis – Common –Sized Statement – Trend Analysis - Ratio Analysis - Dupont Model – Analysis of Cash Flow Statements	
UNIT 3: Cost Behaviour	**12 Hours**
Cost Accounting – Introduction - Elements of Cost – Cost Behaviour – Cost Sheet -–Cost Allocation - Accounting for Overheads Marginal and Absorption costing	
UNIT 4: Cost and Decision making	**12 Hours**
Cost Volume Price Analysis –Relevant Costs for Decision Making - Pricing Decisions - Operational Decisions – Target Costing – Activity Based Costing – Traditional vs. Activity Based Costing	
UNIT 5: Accounting for Planning And Control	**12 Hours**
Budgets – Types – Budgetary Control – Standard costing and Variance Analysis - Cost and Sales Variances – Use of Accounting information for Management Control	
Total :	**60 Hours**

Reference Books

1. Drury, Colin, 2015, Cost and Management Accounting-An Introduction, Cengage Learning, 8th Edition, 2015.
2. Garrison, Noreen, Brewer, Managerial Accounting, McGraw Hill, 14th Edition, 2017.
3. Gupta, Ambrish, Financial Accounting for Management-An Analytical Perspective, Pearson Education,5th Edition, 2016.
4. Horngren,CT, Sundem, GL, Stratton, WO, Burgstahler, D and Schatzberg, JO, Introduction to Management Accounting, Pearson, 16th Edition, 2019.
5. Khan, MY, Jain, PK, Management Accounting, Tata McGraw Hill, 7th Edition, 2017.

21GM15	ORGANIZATIONAL BEHAVIOUR	4 0 0 4

COURSE OVERVIEW

The course focuses on creating a value-based workforce by leveraging positive behaviours to enhance and sustain organizational performance. It provides guidelines for understanding and appreciating the hidden forces affecting workplace behaviour and helps students make better decisions about motivating and coordinating human behaviour to achieve organizational goals. It also helps students to understand the challenges in establishing and sustaining the organizational culture.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the fundamentals of organizational behaviour and individual behaviour	2	3				
CO2	Identify motivation challenges and apply relevant theories to resolve them		3	2			
CO3	Understand leadership styles and apply relevant theories		3		2		
CO4	Analyse group dynamics and facilitate effective team functioning	3	2	2			
CO5	Recognize the attributes of organizational culture		2	3			

UNIT 1: Fundamentals of Organizational Behaviour and Individual Behaviour	12 Hours

Introduction to Organizational Behaviour - Meaning and Importance of OB - Hawthorne Studies - Basic OB Model - Different approaches to OB - Scope and Significance of OB; Personality and its Determinants - Big Five Personality Traits - Myers-Briggs Type Indicator and other Primary Traits; Attitudes - Components of Attitudes - Behaviour and Attitudes - Major Job Attitudes; Values – importance – Types

UNIT 2: Motivation	10 Hours

Characteristics of Motivation -Process of Motivation - Theories of Motivation - Problems in Motivation; Application of Motivation at workplace- Employee Involvement and Rewards

UNIT 3: Leadership	10 Hours

Leadership Styles and Effectiveness - Theories of Leadership - Trait Theories - Behavioural Theories - Contingency Theories - - Modern approaches to Leadership - Servant Leadership

UNIT 4: Group Dynamics, Power and Politics	14 Hours

Difference between Group and Team - Types of Groups and teams – Stages of Group formation – Characteristics of Groups and Decision Making - Model for Team Effectiveness - Troubles with Team and Social Loafing; Workplace Diversity and Inclusion. Power – Bases of Power – Power Tactics. Organizational Politics – Factors contributing to political behaviour , People Response to Organizational Politics

UNIT 5: Organizational Culture and Design	14Hours

Characteristics of an Organizational Culture - Elements of Organizational Culture - Importance of Sub-Culture - Dimensions of Culture and Artifacts – Creating and sustaining culture; Organization Design – Structure and the need for different structures – Conventional Structures and New age Structures; Work Stress: Understanding workplace stress and its consequences - Stress coping strategies

	Total :	60 Hours

Reference Books

1. Kavitha Singh, "Organizational Behaviour", Pearson Publications, 3rdEdition, 2015.
2. Kimberly D. Elsbach, Anna Kayes, D. Christopher Kayes,"Contemporary Organizational Behaviour : From Ideas to Action", Pearson Publications, 2015.
3. Margie Parikh and Rajen Gupta, Organizational Behaviour, McGraw-Hill, 1st Edition, 2017.
4. McShane L. Steven., Von Gilnow Mary Ann., Sharma R. Radha, "Organizational Behaviour", Tata McGraw-Hill, New Delhi, (Special Indian Edition), 6th Edition, 2015.
5. Robbins, Stephen P., Timothy A. Judge, and Neharika Vohra, "Organizational Behaviour", Pearson Publications, 18th Edition, 2018.

21GM16	RESEARCH METHODS	3 0 0 3

Course Overview

The objective of this course is to introduce students to basic framework of research process and develop research orientation. This course aims to acquaint them with scientific methodology in business inquiry and develop analytics skills in business research.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the research process and frame theory		3				
CO2	Demonstrate the skill in designing the research		3				
CO3	Categorize measurement scales and identify statistical tools for solving task complexities		3	2			
CO4	Hypothesize business problems and apply statistical tools for making decisions				3		
CO5	Employ the cause and effect relationship for making decisions				3		

UNIT 1: Research Process	9 Hours
Research in Business - Characteristics – Concepts, Constructs, Variables, Hypothesis, Theory, Models – Inductive and deductive reasoning - Research Process - Review of literature - Formulating the Research Question - Research report writing.	
UNIT 2: Research Design and Data Collection	**9 Hours**
Classification of Research Design – Exploratory Studies, Descriptive studies and Causal Studies - Qualitative and Quantitative Data Collection Methods – Primary and Secondary Data Collection - Experimental Research Design; Data collection – Target Population - Sampling Frame - Sampling methods **-** Size of Sample - Probability Sampling – Non Probability Sampling	
UNIT 3: Measurement Scales and Basic Statistical Tools	**9 Hours**
Measurement Scales - Nominal, Ordinal, Interval and Ratio – Characteristics of Good Measurement - Validity, Reliability, Practicality – Rating Scales – Ranking Scales – Designing Questionnaire; Basic statistical tools – Measures ofcentral tendency - Mean, Median, Mode – Measures of Dispersion - Range, Standard deviation, Variance, Coefficient of Variation	
UNIT 4: Comparison Tools	**9 Hours**
Estimation - Parametric Inference – Hypothesis – Null and Alternative Hypothesis - ANOVA test – t test, Paired t test; Non-parametric Inference - Goodness of fit - One sample tests – Software based analysis and Interpretation	
UNIT 5: Relationship Tools	**9 Hours**
Contingency Tables – Chi-square test – Correlation - Scatter diagram - Karl Pearson Coefficient - SimpleLinear regression	
	Total : 45 Hours

Reference Books
1. Bajpai, N.,"Business Research Methods", Pearson Education, 2nd Edition, 2017.
2. Bryman, A. and Bell, E, "Business research methods", Oxford University Press, 4th Edition, 2016.
3. Donald R. Cooper, Pamela S. Schindler and J K Sharma, "Business Research Methods", McGraw Hill Education (India) Private Limited, New Delhi. 12th Edition, 2018.
4. Nandagopal, Arulrajan and Vivek, Research Methods, Excel Books, 1st Edition, 2007.
5. UmaSekaran and Roger Bougie, "Research Methods for Business: A skill building approach", Wiley India, New Delhi. 7th Edition, 2018.

21GM17	SPREADSHEET APPLICATIONS	0 0 2 1

COURSE OVERVIEW

This course enables students to automate common tasks using spreadsheets, apply advanced analysis techniques using large complex datasets and perform collaborative tasks on worksheets.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand Spreadsheet environment and visualize data		3				
CO2	Apply excel cell references and write formulas to solve problems		3				
CO3	Demonstrate data mining and collaborative tasks using multiple worksheets				3		

UNIT 1: Spreadsheet Environment	10 Hours

Basic text and cell formatting – Selecting ranges - Freeze pane – Using comments – Text functions for purification of large dataset – Date format and conversion - Auto completion of series - Table formatting and highlighting - Conditional formatting –Visualizing data using graphs - Working with multiple worksheets

UNIT 2: Formulas and Functions	10 Hours

Auto filter and custom filter – Auto sort and custom sort - Relative and absolute cell references – Writing formulas – Logical Operators - Lookup function – Index command - Statistical functions - Financial functions

UNIT 3: Advanced Functions	10 Hours

Scenario manager - Goal seek – Sensitivity analysis - Data table - Solver, Analysis Tool Pak - Data mining using Pivot Tables – Data validation – Working with validation formula – Sharing workbooks : Highlighting changes, Reviewing changes Security features : Unlocking cells, Worksheet protection, Workbook protection

	Total :	30 Hours

Reference Books

1. Arora Ritu,"Advance excel 2016 training guide", BPB Publications, 2017
2. David, M., Levine, S., David, F. S., & Kathryn, A., "Statistics for Managers Using Microsoft Excel", Pearson Education Limited, 2016
3. John Walkenbach, "Microsoft Excel 2016 Bible: The Comprehensive Tutorial Resource", Wiley Publications, 2015
4. Michael Alexander, "Microsoft Excel Power Pivot & Power Query For Dummies", Wiley Publications, 2016
5. Wayne L. Winston,"Microsoft Excel 2016 - Data Analysis and Business Modeling", PHI Learning, 2017

21GM18	ACTIVE LEARNING PROGRAMME - 1	0 0 4 2

COURSE OVERVIEW

This activity-based course is designed to help students gain insights into individual's behaviour in work and non-work settings, liaise with peers, enhance team spirit, inculcate risk taking ability, improve communication and planning ability. The course helps to hone the leadership skills of the students.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand oneself and identify individual inhibitions.	3			2		
CO2	Able to clearly instruct the team members and reciprocate by active listening.	3			2		
CO3	Coordinate with the team and develop trust among team members.	2		3			
CO4	Develop technical and communication competencies in personal interview and group discussions.	3			3		

UNIT 1: Exploring Oneself	10 Hours
Knowing oneself – Identifying strengths and weakness; Understanding the members of the team.	
UNIT 2: Identifying as a leader	**10 Hours**
Being an instructor – Difficulties faced in making people understand; ways to increase active listening.	
UNIT 3: Team Coordination and Trust	**10 Hours**
Experiencing team coordination – Challenges to bring in coherence; Building trust on oneself and on the members of the team	
UNIT 4 : Career Empowerment	**30 Hours**
Career Empowerment Module	
Total :	**60 Hours**

21GM19	MANAGERS IN SOCIETY	0 0 4 2

COURSE OVERVIEW

The course aims to reiterate the vital role that managers can play as a society stakeholder. The identifiable areas include ethics, social responsibility and sustainability, the underlying theme being the triple-bottom approach. The course emphasizes on the spirit of sharing-caring-giving paradigm and aims to develop responsible citizenship which is multi-faceted.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Evaluate ethical dilemmas and analyse the implications of non-compliance from a personal and organizational perspective				3		3
CO2	Appraise the facets of sustainability and understand the trade-offs and benefits in adopting sustainable practices						3
CO3	Plan and execute social marketing campaigns relevant to the region			3			3
CO4	Identify societal needs and create and deliver projects/surveys to add value to the concerned stakeholders	3					3

UNIT 1: Managerial Ethics	7 Hours
Understanding the seven ethical principles, Approaches to ethical decision making, eight ethical tests, understanding non-compliance rationale and the consequences of non-compliance.	
UNIT 2: Sustainable Development	**9 Hours**
United Nations Sustainable Development Goals, Triple-Bottom Approach, Environmental management and the challenges, Overview of current legislations.	
UNIT 3: Social Marketing	**7 Hours**
Relevance of social marketing in the Indian context, rationale and examples of social marketing, understanding drivers to change behaviours from a social and individual perspective	
UNIT 4: The Sharing-Caring-Giving Concept	**7 Hours**
Human Development Index, Corporate Social Responsibility, Creating Shared Value, current legislations, case studies of Indian examples.	
UNIT 5: Activity Components	**30 Hours**
- Plan and execute social marketing campaigns relevant to the region. - Create and deliver projects/surveys to add value to the concerned stakeholders.	
Total :	**60 Hours**

Reference Books

1. Crane, Andrew et al, "Business Ethics: Managing Corporate Citizenship and Sustainability in the Age of Globalization", Oxford University Press, UK, 2019
2. Lee, Nancy; Kotler, Philip, "Social Marketing: Changing Behaviours for Good", Sage USA, 2015
3. Sankar, Ajit, "Environmental Management", Oxford University Press India, 2015

SEMESTER II

21GM20	FINANCIAL MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course on Financial Management introduces the techniques for effective financial decision-making and the methods for assessing the impact of these decisions on the performance of the company and on the wealth of the shareholders.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Apply time value of money concepts for financial decisions		3				
CO2	Compute the component of cost of capital for a firm				3		
CO3	Appraise projects using appropriate tools				3		
CO4	Evaluate the impact of long-term sources of financing				3		
CO5	Assess working capital needs and use suitable sources		3				

UNIT 1: **Fundamentals of Financial Management**	**9Hours**
Goals of finance – Functions of a finance manager- Time value of money – Concepts – Basic models of valuation – Valuation of debt, preference and equity	
UNIT 2: **Cost of Capital**	**9 Hours**
Computing specific costs of capital – Cost of debt, Preference shares, Equity and Retained earnings – Computation of WACC	
UNIT 3 : **Investment Decisions**	**9Hours**
Capital budgeting process – Evaluation of capital expenditure decisions – DCF and Non-DCF Techniques	
UNIT 4 : **Capital Structure**	**9 Hours**
Long term sources of financing – Factors determining capital structure – Capital structure theories – EBIT-EPS Analysis - Leverages - Dividend models - Policy – Determinants	
UNIT 5: **Working Capital**	**9Hours**
Short-term sources of financing – Working capital policies – Determinants of working capital – Management of current assets and current liabilities	
Total :	**45 Hours**

Reference Books

1. Chandra, Prasanna, "Financial Management- Theory and Practice", McGraw Hill, 9th Edition, 2017.
2. Gitman, LJ, "Principles of Managerial Finance", Pearson, 13th Edition, 2017.
3. Khan, MY, Jain, PK, "Financial Management", Tata McGraw Hill, 8th Edition, 2019.
4. Pandey, IM, "Financial Management", Vikas Publishing House P Ltd, 11th Edition, 2016.
5. Van Horne, James and Wachowicz, "Financial Management and Policy", Prentice Hall of India Private Ltd, 12th Edition, 2011.

21GM21	HUMAN RESOURCE MANAGEMENT	3 0 0 3

Course Overview

This course addresses the role of human resource function as a key to the success of any organization. The objective of the course is to help students understand the nature, functions and role of HRM as a strategic function. This course would help students understand the application of various HR practices in the organizationsuch as human resource planning, recruitment & selection, training & development, compensation& benefits and performance appraisal.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the fundamentals of HRM and its challenges		2				
CO2	Design a rudimentary recruitment and selection process		3		2		
CO3	Recall the methods of performance appraisal and compensation and benefits		3				
CO4	Choose the appropriate training and development methods		3		2		
CO5	Describe the basics of employee relations, Health and safety		3				

UNIT 1: Overview of Human Resource Management	8 Hours
Significance of Human Resources - Nature, Scope, Objectives, and Functions of HRM - Evolving Strategic Role of HRM –Challenges and Contingencies in HRM - Managing Global Human Resources - Understanding difference between domestic and global workforce	
UNIT 2: Human Resource Planning, Recruitment and Selection	**10 Hours**
HR Planning - Objectives and Process; Job Analysis - Uses, Steps and Techniques; Job Description - Contents and Problems with Job Description; Job Specification and Competency Profiling; Recruitment Sources - Selection Process - Induction and Orientation - Placement and Socialization - International Hiring Practices	
UNIT 3:Performance Appraisal and Compensation	**10 Hours**
Performance Appraisal - Purpose and Factors affecting performance appraisal - Process and Methods - Factors that distort performance appraisal - Potential Appraisal - Compensation across Industries - Objectives of Compensation Planning - Principles and Techniques of Pay Fixation (Components of Pay Structure in India and select countries) - Job Evaluation Methods - Incentive Schemes - Compensation Innovations	
UNIT 4: Training and Development	**8 Hours**
Training need analysis - Areas of training - Training, Development and Education - Training Steps and Methods - Learning Principles - Management Development - Process and Methods - Career development	
UNIT 5: Employee Relations, Employee Safety and Health	**9 Hours**
Industrial Environment Safety - Causes of Accidents - Accident Prevention - Health, Safety, and Welfare Statutory measures - Work Fatigue - Industrial Relations - Objectives - Trade Unionism - Grievance Handling - Collective Bargaining - Termination - Strategies - Managing Separation	
	Total : **45 Hours**

Reference Books

1. Aswathappa, K, "Human Resource Management - Text and Cases", Tata McGraw-Hill, 8th Edition, 2017.
2. De Cenzo, Robbins, S. P., and Susan, L. Verhulst, "Human Resource Management", Wiley, 11th Edition, 2016.
3. Dessler, G., and Varkkey, B. "Human Resource Management", Pearson Education Inc (India), 14th Edition, 2014.
4. Rao, V. S. P. "Taxmann's Human Resource Management (CBCS)", Taxmann Publications Pvt. Ltd., 2nd Edition, 2020.

5. Sarah Gilmore and Steve Williams, Human Resource Management, Oxford, 2nd Edition, 2014.

21GM22	MARKETING MANAGEMENT	3 0 0 3

Course Overview

The aim of this course is to introduce marketing concepts, theories and techniques and to understand strategies employed by marketers in a dynamic marketplace for the contemporary application in the ever-changing business environment

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Prepare a competitive marketing plan by identifying the marketing opportunities	3	3				
CO2	Design and devise a marketing strategy to satisfy the stakeholders		3	3	3		
CO3	Critically evaluate and apply a variety of strategic marketing tools to create customer value and solutions	2			3	3	
CO4	Formulate marketing tactics using marketing mix elements		3	3		3	
CO5	Evaluate sustainable and ethical perspectives and their impact on marketing activities	3					3

UNIT 1: Basics of Marketing	9 Hours
Introduction to Marketing - Understanding the Marketing Process - Understanding Marketing Plan - Marketing Myopia Refresher and Recent Trends in Marketing (Digital and Social Media) - Scanning the Environment- Micro and Macro Analysis (Sectoral Analysis)	
UNIT 2: Marketing Strategy	**10 Hours**
Marketing Objectives and Strategy formulation - Marketing Analysis for Strategy (5 C's) - Creation of marketing plan - Marketing research & Intelligence - Consumer Behaviour and the buying process - Consumer Decision Making Journey	
UNIT 3: Creating Customer Value	**8 Hours**
Marketing Mix elements - Segmenting the markets - Target market selection - Market positioning	
UNIT 4: Capturing and Communicating Customer Value	**12 Hours**
Marketing mix - Product, Service and Branding Decisions - Pricing Strategies - Designing and Managing channels of distribution - Marketing Communications	
UNIT 5: Sustainable & Ethical Marketing	**6 Hours**
Sustainable marketing Practices - Ethics in marketing - Socially Responsible Marketing Practices - Global Marketing Perspectives	
	Total : 45 Hours

Reference Books

1. Grewal & levy,"Marketing", Indian Edition, McGraw Hill, 5th Edition, 2018.
2. Paul Baines, P., Fill, C., Rosengren, S. &Antonetti, P. "Fundamentals of Marketing", Oxford University Press, 3rd Edition, 2017.
3. Philip Kotler, Kevin Lane Keller, Abraham Koshy, MithileshwarJha, "Marketing Management: South Asian perspective", Pearson, 15th Edition, 2017.
4. Ramasamy&Namakumari"Marketing Management: Indian Context. Global perspective", Sage Publishing, 6th Edition, 2018.
5. Richardson, N., James, J. & Kelley, N. (2015) "Customer-centric Marketing: Supporting sustainability in the digital age",Kogan Page: London, 2015.

21GM23	OPERATIONS MANAGEMENT	3 0 0 3

Course Overview

This course aims to familiarize students with major operational problems and issues that confront managers on a day-to-day basis and provide students with concepts, insights, tools and techniques to deal with these issues in order to gain competitive advantage.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain applications of operations management		3				
CO2	Apply principles of inventory management and supply network design to business			2	3		
CO3	Apply forecasting techniques, analyse capacity and design a manufacturing or service system				3		
CO4	Apply principles of lean management and quality management		3		2		
CO5	Apply principles of production planning and control to make operation decisions			2	3		

UNIT 1: Evolution of Operations Management	9 Hours
History and evolution of operations management - Systems concept - Operations strategy - Value addition vs value destruction - Managerial roles and responsibilities of managers in operations	
UNIT 2: Sourcing and Supply Management	**9 Hours**
Facility location - Location selection - Sourcing methods and Vendor rating - Supply chain principles - Inventory management principles - Stores management and control	
UNIT 3: Forecasting and Capacity Analysis	**9 Hours**
Forecasting: Importance, methods, accuracy measures; Process capacity: analysis, sources of capacity increase - Design principles of manufacturing systems - Service operations design – Demand planning	
UNIT 4: Quality Management	**9 Hours**
Lean management: Waste - mura, muri and muda – Seven types of wastes - 5S – andon - jidoka - heijunka - poka yoke – Daily kaizen (SDCA) - Project kaizen (PDCA) - Support kaizen; Six sigma: DMAIC – Organization – teams – Belts - Quality management: Definitions - Deming's 4 Principles - Juran'striology - Standard operating procedure - Quality control principles - Control charts - Inspection plan and execution	
UNIT 5: Production Planning and Control	**9 Hours**
Sales plan - Operating plan - Master production schedule - Material requirement plan - Production scheduling - Production control reports	
Total :	**45 Hours**

Reference Books
1. Jcobs F R, Chase R, "Operations and Supply Chain Management", McGraw Hill, 14th Edition, 2017.
2. Mahadevan B, "Operations Management: Theory and Practice", Pearson Education, 3rd Edition, 2015.
3. Rendar B, Heizer J, "Operations Management", Pearson Education, 12th Edition, 2017.
4. Russell R, Taylor B W, "Operations Management", Wiley Publications, 9th Edition, 2016.
5. Stevenson W J, "Operations Management", McGraw Hill, 12th Edition, 2017.

21GM24	BUSINESS ANALYTICS	3 0 0 3

COURSE OVERVIEW

This course introduces the fundamental concepts and tools needed to understand the emerging role of analytics in business organizations. It helps the students to use data, methods, and fact-based management to support and improve decision making. It demonstrates how to build analytical models using R programming software. Emphasis is placed on applications, concepts and interpretation of results, rather than programming and calculations.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the various concepts and types of business analytics		3				
CO2	Ability to visualize and prepare the data using exploratory data analysis		3				
CO3	Employ unsupervised learning techniques to discover hidden patterns in unstructured data				3		
CO4	Employ supervised learning techniques to build models for prediction				3		
CO5	Devise strategic alternatives for business decision making using supervised learning algorithms				3		

UNIT 1 : Overview of Business Analytics	9 Hours

Big Data - Data Science - Business Intelligence – Business Analytics; Applications of Analytics - Types of Analytics Techniques-Descriptive analytics, Diagnostic analytics, Predictive analytics, Prescriptive analytics; Machine Learning Algorithms; R and R studio environment - Basics of R – Variable Types, Basic Operators, Functions, Vectors, Lists, Data Frame, R Packages

UNIT 2 : Exploratory Data Analysis and Data Visualization	9 Hours

Need for Exploratory Data Analysis - Analytics Process Model; Data Pre-processing Steps - Transforming variables, Creating Dummy variables, One hot encoding; Data Visualization Techniques - Univariate Plots - Histogram, Bar Plots, Pie Chart, Box and Whisker Plot, Density Plot; Multivariate Plots - Strip Chart, Scatter Plot, Heat Maps, GGPlots in R

UNIT 3 : Unsupervised Learning Algorithms	9 Hours

Unsupervised learning algorithm Techniques - Association rule mining - Transaction dataset,Support, Confidence, Lift , Apriori Algorithm, Item frequency plots, Association rules, Plotting of rules; Clustering Techniques - K-means Clustering - Hierarchical Clustering - Distance measures, Dissimilarity matrix, Linkage methods - Agglomerative clustering - Divisive clustering -Dendrogram; Unstructured Data - Text analytics - Word Cloud - Sentiment analysis - Word Polarity - Quantifying Sentiments

UNIT 4 : Supervised Learning Algorithms: Linear and Logistic Regression	9 Hours

Supervised Learning Algorithm Techniques - Regression - Multiple linear regression- Interpretation of Multiple Linear Regression Coefficients, Coefficient of Determination, Model performance measures; Classification Technique - Logistic Regression, Binary Logistic Regression, Sigmoid function Interpretation of Logistic Regression Parameters, Odds ratio, Variable selection

UNIT 5 : Supervised Learning Algorithms: KNN and Decision Tree	9 Hours

Frequency Based Algorithm - K-Nearest Neighbours - Similarity based on distance function, Select Appropriate K Value; KNN Model Building - Evaluating Model Performance; Decision Tree - Tree structure, Criteria for splitting the Decision Node - Classification and Regression Technique (CART)-Control Parameters, Pruning the tree, Important Variables, Insights from Decision Rules

	Total :	45 Hours

Reference Books

1. AntoniosChorianopoullos, "Effective CRM using Predictive Analytics", Wiley Publications, 2016

2. Bart Baesens, "Analytics in a Big Data World – The essential guide to Data Science and its Applications", Wiley Publications, 2018
3. GalitShmueli, Peter C Bruce, Nitin R Patel, "Data Mining for Business Analytics – Concepts, Techniques and Applications", Wiley Publications, 2016
4. James Evans, "Business Analytics", Pearson Publications, 2nd Edition, 2018
5. SandhyaKuruganti, Hindol Base, "Business Analytics-Applications to Consumer Marketing", McGraw Hill Education, 2017

21GM25	BUSINESS LAW	2 0 0 2

COURSE OVERVIEW

The course is designed to provide the conceptual and practical knowledge of laws applicable in business. This will help the future managers to takeinformed decisions, thereby helping them to attain long standing business relations and amicable solutions in a productive timeframe.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Recall conventional and digital contracts and identify different clauses of contract and their consequences and		3				
CO2	Understand and explain the top managerial positions, their functioning, rights and responsibilities and able to choose the right entity and the formation procedures		3				
CO3	Understand and explain the fundamental aspects of IPRs and identify the business prospects using IPRs		3				

UNIT 1: Law of Contracts	10 Hours
General Principles of Contract – Types of Contracts – E-Contracts - Important clauses in contracts – Remedies for breach of contract – Alternative Dispute Resolutions systems Digitalization of Banking systems – E-payments, Cheques, Promissory note and Bill of Exchange – It's Legal challenges and Remedies – Banking Ombudsman – Consumer Protection Act- Overview	

UNIT 2: Company Law and Goods and Services Act	10 Hours
Nature of Conventional HUF, Partnership, LLP and Company – Types of companies –Incorporation of companies - Memorandum and Articles of a company- Directors - Rights and Responsibilities of Directors – Board meetings – Boards Report –Managerial Remuneration - Corporate Governance - Mobilization of capital from Domestic and International resource, Prospectus, shares, Debentures, Depository receipts Corporate Tax Planning, Corporate Taxes and Overview of Latest Developments in Indirect tax Laws relating to GST	

UNIT 3: Intellectual Property Rights and Competition Act	10 Hours
Patent, copy right, Trade Marks and Geographical Indications – Law and Procedure; Anti- competitive agreements- Abuse of Dominant Position – Combination – Role of Competition Commission of India IT Act 2000 and 2002, Cyber Laws	

	Total :	30 Hours

Reference Books

- Akhileshwar Pathak, Legal Aspects of Business, Tata McGraw Hill, 6th Edition, 2018.
- Ravinder Kumar, Legal Aspects of Business, New Delhi: Cengage Learning, 4th edition, 2016.
- Taxmann, GST Manual with GST Law Guide & Digest of Landmark Rulings, 11th Edition, 2019.
- Daniel Albuquerque, Legal Aspect of Business, Oxford, 2nd Edition, 2017.
- Ravinder Kumar– Legal Aspect of Business.–Cengage Learning, 4 th Edition-2016.

21GM26	INFORMATION SYSTEMS MANAGEMENT	0 0 4 2

COURSE OVERVIEW

This course addresses the issues that arise in dealing with managing 'information' as a business resource. It highlights how information systems work in different functional areas and help students understand the most recent variants of the information systems. The students will learn about designing an information system.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain the business perspective of information systems and develop a business process model		3				
CO2	Design and create a database model for an organization		3				
CO3	Demonstrate a Transaction Process System and Functional Business System using a software			3			
CO4	Design an internet enabled business model using open source software			3			
CO5	Evaluate software tools and find the best fit software for an organization				3		

UNIT 1: Organizations and Role of Information System	**12 Hours**

Introduction to Information System – Classification of Information - A Business Perspective on Information Systems - Understand a Business Process – Business Process Modelling – Business Process Reengineering – Enterprise wide Information system

Practical: Developing a Business process model for an organization and identifying the process to be -be reengineer - Developing as-I and to – be process model

UNIT 2: Managing Data Resources	**12 Hours**

Databases and Information Management – Database Management Systems – Using Databases to Improve Business Performance and Decision Making – Data Warehousing and data mart framework and the usage Managing Data Resources

Practical: Design and create a database model for an organization – Using a query language/tool to perform data manipulations (Insertion, Updation, Deletion and Retrieval)

UNIT 3: Functional Business System	**12 Hours**

Cross-functional Enterprise application – Enterprise Application Integrations – Transaction Processing System – Functional Business System – Marketing Systems – Manufacturing Systems – HR Systems – Accounting Systems - Customer Relationship Management Systems – Enterprise Applications

Practical: Design a TPS for a business process in an organization – Demonstrate the TPS using a live application

UNIT 4: Internet-Enabled Business	**12 Hours**

E-Commerce Technologies – Essential E-Commerce process – Electronic Payment process – Web Store Requirements – Developing a Web Store – SEO Technologies – Managing a Web Store

Practical: Developing and managing a E-Commerce Web Store using Open Source Software

UNIT 5: Decision Support Systems	**12 Hours**

Decision making and Information Systems – The decision making process – Automated decision making – Decision support Models - Business Intelligence – New IT initiatives - Pervasive Computing, Cloud computing, Advancements in AI, IoT, Block chain, Crypto currency, Quantum computing

Practical: Evaluate the different software tools used in Decision Support System and compare the software features with the business requirements – Find the best software that might fit s small medium enterprise.

	Total : 60 Hours

Reference Books

1. Jaytilak Biswas,Management Information Systems, Sage Publications India, 2020.
2. Jun Xu, Essential Topics Of Managing Information Systems, 1st Edition, World Scientific Publishing Company Pte Limited, 2019.
3. Kenneth C.Laudon, Jane P.Laudon, Management Information Systems – Managing the Digital Firm, 14th Edition, 2017.
4. Maria Pomffyova, Management of Information Systems, IntechOpen, 2018.
5. Ramesh Bhel, James A.O'Brien, George M.Marakas, Management Information Systems, McGraw Hill Eduction, 11th Edition, 2019.

21GM27	EMOTIONAL INTELLIGENCE FOR MANAGERS	1 0 0 1

COURSE OVERVIEW

This is a tailor-made, activity based learning course aimed to create an awareness about the Emotional Intelligence (EI) concept and to enable the students to apply the concept for better intrapersonal and interpersonal outcomes

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Increase their self-awareness	2					
CO2	Apply EI skills for better intrapersonal outcomes	2					
CO3	Apply EI skills in interpersonal relationships	3					

UNIT 1: Understanding and Developing Emotional Intelligence	**5 Hours**
Emotional Intelligence and its constituents; Self-Awareness – Developing Self Awareness - Four steps to Emotional Intelligence	
UNIT 2: Applying Emotional Intelligence for Intrapersonal Success	**5 Hours**
Emotion Regulation - Managing Anger - Managing Fear – Managing Stress	
UNIT 3: Applying Emotional Intelligence for Interpersonal Success	**5 Hours**
Emotional Intelligence and Communication - Developing Interpersonal Expertise - Managing conflicts.	
Total :	**15 Hours**

Reference Books

1. Deepa, R. "Unearthing your emotional intelligence, Notion Press, Chennai. 1st Edition, 2020.
2. Bennett, M, "Emotional Intelligence: The Definitive Practical Guide to Understand Your Emotions, Develop Your EQ and Improve Your Relationships", Paropress.com, Book 1, 2017.
3. Kerr, A. B.,"Emotional Intelligence for a Compassionate World: Workbook for Enhancing Emotional Intelligence Skills", CreateSpace Independent Publishing Platform, North Charleston: South Carolina, 2017.

The business beyond borders is a two week study abroad program jointly offered with a university at a foreign location. The program will be led by faculty members from PSGIM. The objective of the program is to give an international exposure to students of business, where they experience the way of business and culture of the country. They are encouraged to understand and appreciate all the facets of the country that will assist in development of their intellectual, professional and personal skills. Each student is expected to document the learning in the form of a written report and also make an oral presentation to a panel of examiners, on the basis of which they will be evaluated

21GM29	ACTIVE LEARNING PROGRAM - 2	0 0 4 2

COURSE OVERVIEW

This activity-based course is designed to help students gain insights into individual's behaviour in work and non-work settings, liaise with peers, enhance team spirit, inculcate risk taking ability, improve communication and planning ability. This course helps to hone the leadership skills of the students.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the dynamics of working in a team.	2		3			
CO2	Develop effective problem solving and decision making capabilities.			2	3		
CO3	Demonstrate effective team skills to address dysfunctional team behaviour and conflicts.	2		3			
CO4	Develop technical and communication competencies in personal interview and group discussions.	3			3		

UNIT 1: Team Dynamics	10 Hours
Develop ways to identify an ideal team member - Handling inter-personal issues – Task planning and execution challenges.	
UNIT 2: Critical Thinking	**10 Hours**
Managing task complexities – Breaking into tasks – logical thinking and task execution – Identify Conflict	
UNIT 3: Team Effectiveness	**10 Hours**
Managing team conflict – Arriving at consensus - Feeling of oneness - Task achievement and member satisfaction.	
UNIT 4 : Career Empowerment	**30 Hours**
Career Empowerment Module	
Total :	**60 Hours**

SEMESTER III

Course Requirements

a) Students will have to undergo a summer internship for minimum eight to ten weeks in a company/firm/research organization at the end of Semester II.

b) All students placed for summer internship through campus placement process are mandated to attend the same and cannot change unless prior permission is taken.

c) Students will be assigned a faculty mentor for the entire period. Stage-wise approval as to the intended company, the start and finish dates and periodic reports has to be confirmed and completion certificates should be obtained and submitted to the mentor.

d) The internship assessment is a multi-stage sequential process.

e) At the end of the internship and in the beginning of the Semester III, students have to submit an internship report and make a presentation in which they will present their work to examiners from the industry and academia for evaluation.

A detailed guideline and instruction manual will be given to students at the end of Semester II.

21GM32		STRATEGIC MANAGEMENT					0 0 6 3

COURSE OVERVIEW

This course develops students' capacity to think strategically about a company, conducting strategic analysis in a variety of industries and competitive situations and tofamiliarize them with different types of strategies and their applications in real life business situations.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Apply external environmental analysis tools for strategic decision making		3				
CO2	Prepare a comprehensive internal environmental analysis for strategic decision making in a cross functional environment			3			
CO3	Analyse the different options available to organizations for growth and expansion in regional markets		3				
CO4	Develop critical thinking by application of strategic tools for decision making				3		
CO5	Analyse options relating to expansion in International markets for an organization		3				

UNIT 1: Strategic Management Overview	18 Hours

Industrial organization model-Resource based model – Vision – Mission – Competency- Core-competency-Distinctive competency- Fortune at the bottom of the pyramid -- External environmental analysis-Global-Legal and political factors, New business models for the new economy

UNIT 2: Internal Environment, Business Level Strategy	18 Hours

Resources – Capabilities-Criteria of sustainable competitive advantage-Value chain analysis – Outsourcing-Economies of scale-Economies of scope- Cost leadership strategy – Differentiation – Focus – Integration -Flexible manufacturing system- Total quality management

UNIT 3: Corporate Level Strategy	18 Hours

Levels of diversification-Operational relatedness-Corporate relatedness-Vertical Integration-Merger-Acquisition- Joint Venture-Strategic alliance –Restructuring – Downsizing – Downscoping- Leveraged buy out

UNIT 4: Strategic Tools	18 Hours

External factor evaluation matrix-Internal factor evaluation matrix- Competitor profile matrix- SWOT-TOWS-IE matrix-Grand strategy matrix- Boston consultancy group matrix- Quantitative strategic planning matrix(QSPM), Leveraging technology for strategic decision making

UNIT 5: Global Strategy	18 Hours

Porter's determinants of national advantage-International strategies-International corporate level strategies-Choice of International Entry mode- Strategic alliance- Types of strategic alliance-Business level co-operative strategy

	Total :	90 Hours

Reference Books

1. Hitt, Ireland, Hoskisson and Manikutty, "Strategic Management: A South-Asian Perspective with CourseMate", Cengage Learning, 9th Edition, 2016.
2. David Fred and David Forest, "Strategic Management-Concepts and Cases", Pearson Education, 15th Edition, 2015.
3. Thompson, Peteraf, Gamble and Strickland, "Crafting & Executing Strategy: Concepts & Cases", McGraw Hill publication, 21st Edition, 2017.
4. John A. Pearce II, Richard B. Robinson, and AmitaMital, "Strategic Management (SIE)", McGraw Hill Education, 14th Edition, 2018.

5. Thomas L. Wheelen, J. David Hunger, Alan N. Hoffman, Charles E. Bamford, PurvaKansal, "Strategic Management and Business Policy: Globalization, Innovation and Sustainability", Pearson Publication, 15th Edition, 2018.

AUDIT COURSE

21GM34	UNIVERSAL HUMAN VALUES	2 0 0 0

UNIT 1: INTRODUCTION TO VALUE EDUCATION	**6 Hours**
Understanding Value Education - Self-exploration as the Process for Value Education, Sharing about Oneself - Continuous Happiness and Prosperity – The Basic Human Aspirations -Right Understanding, Relationship and Physical Facility, Exploring Human Consciousness - Happiness and Prosperity – Current Scenario - Method to fulfil the Basic Human Aspirations, Exploring Natural Acceptance	
UNIT 2: HARMONY IN THE HUMAN BEING	**6 Hours**
Understanding Human Being as the Co-existence of the Self and the Body - Distinguishing between the Needs of the Self and the Body - The Body as an Instrument of the Self - Harmony of the Self with the Body - Programme to ensure self-regulation and Health	
UNIT 3: HARMONY IN THE FAMILY AND SOCIETY	**6 Hours**
Harmony in the Family – the Basic Unit of Human Interaction - Values in Human-to-Human Relationship - 'Trust' – the Foundational Value in Relationship - 'Respect' – as the Right Evaluation - Understanding Harmony in the Society - Vision for the Universal Human Order	
UNIT 4: HARMONY IN THE NATURE/EXISTENCE	**6 Hours**
Understanding Harmony in the Nature - Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature - Realizing Existence as Co-existence at all Levels - The Holistic Perception of Harmony in Existence	
UNIT 5: IMPLICATIONS OF THE HOLISTIC UNDERSTANDING – A LOOK AT PROFESSIONAL ETHICS	**6 Hours**
Natural Acceptance of Human Values - Definitiveness of (Ethical) Human Conduct - A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order - Professional Ethics and Right Understanding - Competence in Professional Ethics - Strategies for Transition towards Value-based Life and Profession	
Total	**30 Hours**

Reference Books

1. R R Gaur, R Asthana, G P Bagaria, "A Foundation Course in Human Values and Professional Ethics", Excel Books, New Delhi, 2nd Revised Edition, 2019.
2. R. S. Naagarazan, "A text book on Professional Ethics and Human Values", New Age International Ltd, 2020.
3. Tanu Shukla, AnupamYadav, Gajendra Singh Chauhan, "Human Values and Professional Ethics, Cengage India Private Limited, 1st Edition, 2017.
4. Jayshree Suresh and B. S. Raghavan, "Human Values and Professional Ethics: Values and Ethics of Profession" S. Chand Publishing, 4th Edition 2012.

SEMESTER IV

| 21GM41 | **ENTREPRENEURSHIP AND NEW VENTURE CREATION** | **0 0 4 2** |

COURSE OVERVIEW

The course aims to create an eco-system of entrepreneurship by exposing the students to the process of creating a new business from a multi-dimensional perspective, both as an entrepreneur and as an intrapreneur. It aims to provide a hands-on experience of how a new business idea fits into the business environment and the process, techniques, tools and templates to launch a new venture. It equips the students to develop a lean business model encompassing the study of the market, a deep understanding of the consumer, product development and also the financial and legal aspects required for a business plan through tested templates.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the potential for entrepreneurship, creativity and innovation.		3				
CO2	Understand market gap analysis and the business canvas framework.		3	2		2	
CO3	Evaluate the market opportunity, analyse the operational and functional feasibility of the business idea and develop the value proposition canvas.			3	2		
CO4	Analyse the financial feasibility of the business idea		3		2	3	
CO5	Create the lean business model canvas			3	2	3	

UNIT 1: Entrepreneurship - Overview	**12 Hours**

The Entrepreneur – concept and nature, entrepreneurial decision process, characteristics, attitude, competencies, and motivation, achievement motivation, skills, knowledge, creativity and innovativeness. The MSME landscape.

UNIT 2:New Venture Creation	**12 Hours**

Introduction to new venture creation, overview of a lean business model canvas, identifying interested stakeholders, Idea Generation, Initial feasibility analysis.

UNIT 3: The Market and Operational Aspects	**12 Hours**

Target customer, their problems, demographics, personality traits and behaviour. Market opportunity, market size, growth rate, growth potential, market trends, opportunities, value proposition canvas. Product/service, manufacturing, resources, mode of sales , sales process , go-to-market strategy, concept, prototype, Product Road Map, existing and likely competition, barriers to entry for new competitors, key distribution and technology partners.

UNIT 4: Revenue Model	**12 Hours**

Revenue model, Average no of customers per month ,Average payment by a customer ,customer acquisition costs, Total Revenue , Expenditure plan, Financial Plan Template, Projected financial statements

UNIT 5: Financing Options and Preparing The Pitch	**12 Hours**

Sources of funding for startups, IPR process, Legal aspects relating to the startup , team formation, scalability of the model, social and ethical aspects of the business, Winning negotiations, elevator pitch, exit strategy

	Total:	**60 Hours**

Reference Books

1. Eric Ryes,The Lean Startup: How Constant Innovation Creates Radically Successful Businesses, Penguin UK, 2011.
2. Guy Kawasaki, The Art of the Start 2.0,The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything, Penguin publishers, Edition 2, 2015.
3. Noam Wasserman,The Founder's Dilemmas: Anticipating and Avoiding the Pitfalls That Can Sink a Startup (The Kauffman Foundation Innovation and Entrepreneurship),Princeton University, 2013.

ELECTIVES

FINANCE ELECTIVES

21GA01	APPLIED FINANCIAL ECONOMETRICS	3 0 0 3

COURSE OVERVIEW

This course provides an in depth knowledge in quantitative finance. It helps in broadening the knowledge of students in multivariate data analysis technique with special reference to finance and its related field.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Understand nuances of time series models		3				
CO2	Apply various tests for stationarity of variables		3				
CO3	Predict volatility of time series variables			3			
CO4	Measure the lead-lag relationship and causality between time series variables		3	1			
CO5	Diagnose short term and long term relationship between variables				3		

UNIT 1: Univariate Stationary Time-Series Models	**9 Hours**
Introduction to Stochastic process, stationary processes, Wold representation theorem, autocovariance functions, autocorrelation and partial autocorrelation, auto regressive and moving average models, condition for stationary and invertible process, Box-Jenkins approach, forecasting.	
UNIT 2: UnivariateNonstationary Processes	**9 Hours**
Nonstationary process, deterministic and stochastic trends, Integrated process and random walk, Random walk with drift, Unit root process, test for unit root, Dicky fuller tests, ARIMA process. Fractional integrated process.	
UNIT 3: Modelling Volatility	**9 Hours**
Volatility – meaning and measurement, Volatility clustering, Econometric models of volatility, ARCH Model, GARCH model and its various extensions, testing for ARCH/GARCH effects.	
UNIT 4: Multivariate Stationary	**9 Hours**
Vector autoregressive models, Granger Causality, impulse response function, Variance Decomposition.	
UNIT 5: Multivariate Non-stationary processes:	**9 Hours**
Introduction to cointegration, testing for cointegration: Single-equation approaches: Eagle Granger method, Johansen test for cointegration, Vector error correction model.	
Total:	**45 Hours**

Reference Books
1. Brooks C, "Introductory Econometrics for Finance", 4th Edition, Cambridge University Press, 2019.
2. Hair.F.J, Rolph E Anderson.R.E, Tatham.R.L, and Black.W.C, "Multivariate Data Analysis", 8th Edition, Pearson, 2018.
3. Tabachnick,B.G and Fidell,L.S, "Using Multivariate Statistics", 7th Edition, Harper and Row, 2019.
4. Terrence C.Mills, "Applied Time series Analysis: A practical Guide to Modelling and Forecasting", Academic Press, Elsevier, 2019.
5. Tsay.S.R and Chen.S.,"Nonlinear Time Series Analysis", Wiley, 2019.

21GA02	BANKING AND FINANCIAL SERVICES	3 0 0 3

COURSE OVERVIEW

This course gives an exposure to the structure and legal framework of Banking and Financial services industry in India. The innovations in the functions and delivery of financial services due to the advent of technology will be dealt with.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Understand functioning of Financial Institutions		3				2
CO2	Demonstrate skills in providing retail financial services		3				
CO3	Demonstrate skills in providing corporate financial services		3				
CO4	Evaluate performance of Banking and Non-Banking Financial Companies				3		
CO5	Apply technology to enhance quality of financial services			3			

UNIT 1: Introduction to banking and non-banking companies	9 Hours
Indian Banking system – commercial banks-types-role-regulations and recent trends. Non-Banking Financial companies- types- RBI guidelines- Performance of BFSI. Trends and progress of financial services industry in India.	
UNIT 2: Retail financial services	**9 Hours**
Deposits – types and their features, Debit card. Lending- personal loan, mortgage loan, Consumer loan, credit card services, investment services and wealth management- insurance, mutual fund,demat, etc., and advisory services	
UNIT 3: corporate financial services	**9 Hours**
Over draft, term loan, Hire-purchase, Leasing, Factoring, Bill discounting, forex services, bank guarantee, custodian services	
UNIT 4: Management of Banking and Non-Banking Finance Companies	**9 Hours**
Capital Adequecy-Basel Norms, Asset quality -NPA, Liquidity, Management quality, Asset-Liability management, risk management, evaluation of performance.	
UNIT 5: Fintech in financial services	**9 Hours**
Online banking, Mobile banking, digital payment, ATM, Core banking, application of AI in financial services, role of Blockchain technology, collaboration of fintech companies and Financial Institutions	
Total:	**45 Hours**

Reference Books

1. Arjunwadkar, P. Y. "Fintech: The Technology Driving Disruption in the Financial Services Industry". (n.p.): Taylor & Francis Group,2020.
2. Khan. M. Y, "Financial Services", 10th Edition, McGraw-Hill Education, 2020.
3. Padmalatha, S., Justin, P. "Management of Banking and Financial Services", Pearson Education India, 2018.
4. Scardovi, C., "Digital Transformation in Financial Services", Germany: Springer International Publishing,2017.
5. Sinha. V.C and Varshney. J. C, "Money and Financial Systems", SBPD Publishing House, 2020.

| 21GA03 | EMPIRICAL RESEARCH IN FINANCE | 3 0 0 3 |

COURSE OVERVIEW

This course gives an in-depth understanding of the theories in Finance, Capital Markets, Derivatives, Asset Pricing, determinants of Exchange Rate risk and Behavioural Finance.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Evaluate theories related to source of finance and income distribution.					1	
CO2	Examine merits and demerits of various asset pricing models.				3		
CO3	Apply hedging techniques for risk management				3		
CO4	Comprehend key business practices in the international financial markets.		3				
CO5	Develop alternative behavioural models and decide on action plans		3		1		

UNIT 1: Theories of Financial Management	9 Hours
Capital Structure – MM Theory, Trade Off Theory, Signalling Theory, Dividend Theories, Cost of Capital, Valuation – Pecking Order	
UNIT 2: Capital Market Theories	**9 Hours**
Market Efficiency Theories, Random Walk Theory, Portfolio Theory, CAPM, Arbitrage Pricing Theory, Multifactor Models	
UNIT 3: Option Valuation Models	**9 Hours**
Option and their Valuation, Black Scholes Model and Binomial model	
UNIT 4: Theories of International Finance	**9 Hours**
Purchasing Power Parity Theory – International Fisher Theory – Interest Rate Parity Theory	
UNIT 5: Theories of Behavioural Finance	**9 Hours**
Forward Rate Agreements – Interest Rate Swaps – Interest Rate Futures- Options – Credit Default Swap – Credit Options – Credit Linked Notes- Total Return Swaps – Credit Derivative Pricing	
Total :	**45 Hours**

Reference Books

1. Donald E.Fischer and Ronald J.Jordan, "Security Analysis and Portfolio Management", Pearson Education, 7th Edition, 2018.
2. Prasanna Chandra, "Financial Management: Theory and Practice", McGraw-Hill, 10th Edition, 2019.
3. Rajiv Srivastava and Anil Misra, "Financial Management" Oxford University Press, 2nd Edition, 2011.
4. SundaramJanakiramanan, "Derivatives and Risk Management", Pearsons Education, 1st Edition, 2011.
5. ThummuluriSiddaiah, "International Financial Management: An Analytical Framework", Pearson Education, 2nd Edition, 2010.

21GA04	FINANCIAL ANALYTICS	3 0 0 3

COURSE OVERVIEW

This course provides an in-depth knowledge of application of analytics in the domain of finance. The course with a combination of statistical and machine learning algorithms will prepare students for analysis and prediction of financial and time series data.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Prepare data to enable data exploration and further analysis		3				
CO2	Apply simple machine learning models for predictions				3		
CO3	Develop solutions for finance applications using advanced machine learning models				3		
CO4	Apply machine learning models for time series forecasting				3		
CO5	Choose appropriate prescriptive analytic tools for business problems				3		

UNIT 1: Data in Finance	9 Hours
Financial Analytics – Need - Data in Finance - Sources of Financial Data – Pre-processing of Financial Data - Applicability of Tools (Excel, SPSS, R, Python) for Exploratory Data Analysis	
UNIT 2: Simple Predictive Models	**9 Hours**
Simple Predictive Models for Finance – Linear Regression - Ridge Regression – Lasso Regression – Logistic Regression – Linear Discriminant Analysis – Applications in Finance	
UNIT 3: Advanced Predictive Tools	**9 Hours**
Advanced Predictive Tools - Naïve Bayes Model - KNN - Neural Networks – Decision Tree- Ensemble Models – Support vector Machines – Applications in Finance	
UNIT 4: Time Series Forecasting	**9 Hours**
Time Series Analysis - Stock Price Behaviour –Stationarity - Forecasting Models – Single Exponential Smoothing – Holt's Model – Holt-Winter Model – ARMA, ARIMA , Auto ARIMA - Performance Measures– Volatility Modelling using ARCH and GARCH Models	
UNIT 5: Prescriptive Analytics	**9 Hours**
Prescriptive Analytics – Need - Linear Programming – Sensitivity Analysis – Optimization Techniques – Goal Programming	
	Total: 45 Hours

Reference Books

1. Bart Baesens, "Analytics in a Big Data World – The essential guide to Data Science and its Applications", Wiley Publications, 2018
2. Daniel T.Larose and Chantal D, Larose, Data Mining and Predictive Analytics, (2nd Edition) Wiley, 2018.
3. Dinesh Kumar. U., "Business Analytics", Wiley Publications, 1st Edition, 2017.
4. GalitShmueli, Peter C Bruce, Nitin R Patel, "Data Mining for Business Analytics – Concepts, Techniques and Applications", Wiley Publications, 2016.
5. James Evans, "Business Analytics", (2nd Edition) Pearson Publications, 2018.

21GA05	**FINANCIAL DERIVATIVES**	**3 0 0 3**

COURSE OVERVIEW

This course will help in understanding the use of derivatives in financial risk management. The students will be able to develop strategies using derivatives for different market scenarios and also estimate value of derivatives.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Apply Futures to mitigate the risk involved		3				
CO2	Distinguish between features of different Options		3				
CO3	Apply option strategies for the different market scenarios				3		
CO4	Calculate price of Options		3				
CO5	Design SWAPS to benefit from comparative advantage				3		

UNIT 1: Forwards and Futures	**9 Hours**
Introduction to Derivatives – Need – Types - Forwards – Futures – Specifications – Open Interest – Pricing Futures – Arbitrage Argument – Marking to Market – Convergence – Basis and Basis Risk – Hedge Ratio - Trading strategies	
UNIT 2: Options	**9 Hours**
Options – Types of Options – Specifications – Option Positions – Option Premium - Moneyness - Margin Requirements - Pay off – Put call Parity – Factors affecting option prices – Exotic Options	
UNIT 3: Option Trading Strategies	**9 Hours**
Covered Call – Protective Put – Strangle – Straddle – Bull and Bear Call spread – Call Back Spread - Bull and Bear Put Spread – Condor – Butterfly – Collar	
UNIT 4: Option Pricing	**9 Hours**
Binomial Option Pricing – Risk neutral valuation - Single period and Multi period – Implied Volatility - Black Scholes Model - Options Greeks – Delta Hedging – Volatility Smiles	
UNIT 5: SWAPS	**9 Hours**
Introduction – SWAP Facilitators – Interest Rate Swaps – Currency Swaps –Comparative Advantage using Swaps - Credit Default Swaps – Forward Rate Agreements – Total Return Swaps	
Total:	**45 Hours**

Reference Books

1. John C. Hull, "Fundamentals of Futures and Options Markets", Pearson, 9th Edition, 2018.
2. John C. Hull, SankarshanBasu, "Options Futures and Other Derivatives", Pearson, 9th Edition, 2018.
3. Parasuraman N R, "Fundamentals of Financial Derivatives", Wiley, 3rd Edition, 2014.
4. Robert L McDonald, "Derivatives Markets", Pearson, 3rd Edition, 2014.
5. Srivatsava and Rajiv, "Derivatives and risk Management", Oxford University Press, 2nd Edition, 2014.

21GA06	FINANCIAL RISK MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course is designed to equip and update students about the risk management tools available to mitigate business risk.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Recognise risks and their sources		3				
CO2	Identify and quantify financial Risk			3			
CO3	Apply management techniques to avoid and mitigate risk			3			
CO4	Evaluate different insurance products for managing risk			3			
CO5	Use Insurance products to transfer financial risk				3		

UNIT 1: Introduction to Risk Management	9 Hours
Risk, Types of Risk, Objective of Risk Management, Sources of Risk, Measurement of Risk	
UNIT 2: Identifying and Quantifying Financial Risk	**9 Hours**
Risk Identification and Assessment, Risk Response, Risk Control Implementation, Risk Exposure. Quantifying Tools – Regression Analysis, Value at Risk and Scenario Analysis	
UNIT 3: Risk Aversion & Management Technique	**9 Hours**
Risk Avoidance, Loss Control, Risk Retention, Risk Transfer, Value of Risk Management, Pooling and Diversification of Risk	
UNIT 4: Introduction to Insurance	**9 Hours**
General Insurance, Principles of General Insurance, General Insurance Products (Fire, Motor, Health), Directors and Officers Liability Insurance, Insurance Contracts, Objective of Insurance, Elements of valid contract, Characteristics of Insurance contracts, Insurance Pricing, Insurance Market & Regulation, Solvency Regulation.	
UNIT 5: Insurance as a Risk Management Technique	**9 Hours**
Insurance Principles, Policies, Insurance cost & Fair Pricing, Expected claim costs, Contractual provisions that limit Insurance coverage, Reinsurance.	
Total:	**45 Hours**

Reference Books
1. Garcia.F.J.P, "Financial Risk Management: Identification, Measurement and Management", Springer, 2018.
2. Hull, J. C. "Risk Management and Financial Institutions", United Kingdom: Wiley, 2018
3. McNamara, Michael J, Rejda, George E. "Principles of Risk Management and Insurance", United States: Pearson Education, 2020.
4. Roncalli,T. "Handbook of Financial Risk Management", CRC Press, 2020.
5. Schenke.J, "Financial Risk Management Fundamentals", United States: Amazon Digital Services LLC - KDP Print US, 2019.

21GA07	FIXED INCOME SECURITIES	3 0 0 3

COURSE OVERVIEW

This course provides an overview of the different types of fixed income securities and the various tools & techniques that can be applied to analyse their riskiness. Students will also gain knowledge of formulating appropriate strategies to deal with these securities.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Distinguish types of fixed income instruments available in the financial markets		3				
CO2	Value fixed income securities		3				
CO3	Critically evaluate structure of interest				3		
CO4	Apply tools to measure various sources of individual and portfolio risk				3		
CO5	Demonstrate the use of derivative instruments for hedging				3		

UNIT 1: Introduction to Debt Instruments	9 Hours
Basic Concepts of Debt Instruments - Indian Debt Market – Central Government Securities – State Government Bonds – Call Money Market – Corporate Bonds – Commercial Paper – Certificate of Deposit - Repo – Bond Market Indices	
UNIT 2: Bond Valuation	**9 Hours**
Bond Valuation – Accrued Interest – Yield – Weighted Yield – YTM of a Fixed Income Portfolio – Realized yield – Yield Price Relationship of Bonds. Valuation of bonds as per SEBI norms.	
UNIT 3: Term Structure of Interest Rates	**9 Hours**
Yield Curve – Bootstrapping - Definitions and Properties of Term structure – Theories of Term structure – Pure expectation theory- The pure risk premium theory- The market segmentation theory – The biased expectation theory	
UNIT 4: Duration	**9 Hours**
Introduction and Definition – Calculating the Duration of a Coupon Paying Bond – Computing Duration on Dates other than Coupon Dates – Modified Duration – Rupee Duration – Price value of a Basis Point – Portfolio Duration – Limitations	
UNIT 5: Hedging Interest Rate Risk and Credit Risk	**9 Hours**
Forward Rate Agreements – Interest Rate Swaps – Interest Rate Futures- Options – Credit Default Swap – Credit Options – Credit Linked Notes- Total Return Swaps – Credit Derivative Pricing	
	Total:	**45 Hours**

Reference Books

1. Barbara S. Petitt, Jerald E. Pinto, Wendy L. Pirie, Bob Kopprasch, "Fixed Income Analysis", Wiley, 3rd Edition, 2015.
2. Bruce Tuckman, "Fixed Income Securities: Tools for Today's Markets", Wiley Finance, 3rd Edition, 2011.
3. Frank J. Fabozzi and Steven V. Mann, "The Handbook of Fixed Income Securities", Tata Mcgraw Hill, 8th Edition, 2017.
4. Mukherjee, K. N., "Demystifying Fixed Income Analytics: A Practical Guide", United Kingdom: Taylor & Francis Group, 2020.
5. Parameswaran, S. K., "Fixed Income Securities: Concepts and Applications", Germany: De Gruyter, 2019.
6. PietroVeronesi, "Fixed Income Securities: Valuation, Risk and Risk Management", Wiley, 1st Edition, 2010.

21GA08	INTERNATIONAL FINANCIAL MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course will help students to broaden and deepen the understanding of international financial management practices. This course helps students to make business decisions relating to financial management from global perspective.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Determine and interpret forex rates		3				
CO2	Identify activities and their inter-linkages in the international financial markets		3				
CO3	Understand the determinants of forex rate and its effect on financial decisions		3				
CO4	Apply tools and techniques for managing exchange rate risk				3		
CO5	Integrate international financing with business decisions					3	

UNIT 1: Foreign Exchange	9 Hours
Foreign Exchange Market - Rates and Quotations - Spot Rate - Forward Rate - Bid Ask Spread - Arbitrage in Foreign Exchange Markets	
UNIT 2: International Flow of Funds	**9 Hours**
Key Components of Balance of Payments – International Trade Activity – International Trade Flows influenced by Economic Factors – International Capital Flows - Participants - Types - Direct and Indirect (FDI, FII, ECB's, FEMA and Others) - Networks for International Transaction	
UNIT 3: Exchange Rate Theories	**9 Hours**
Theories of Exchange Rate Determination and Problems (Interest Rate Parity Theory, Purchase Power Parity Theory, Fisher Effect) – Comparison of IRP, PPP and FE - SWAP Transaction	
UNIT 4: Foreign Exchange Exposure	**9 Hours**
Foreign Exchange Risk -Types of Exposure - Techniques for Managing Exposure Related Risks	
UNIT 5: International Financing	**9 Hours**
International Financing – Short Term and Long-Term Financing – Instruments – Features – Evaluation and Selection	
Total:	**45 Hours**

Reference Books

1. Alan C. Shapiro, Peter Moles, "International Financial Management", Wiley Publications, 2016.
2. CheolEun and Bruce Resnick, "International Financial Management", McGraw Hill, 8th Edition, 2018.
3. David K Eiteman, Arthur I Stonehill, Michael H Moffett, "Multinational Business Finance", Pearson Education, 13th Edition, 2012.
4. P G Apte, SanjeevanKapshe, "International Financial Management", McGraw Hill, 2020.
5. Prakash G Apte, "International Finance", Mcgraw Hill, 2nd Edition, 2010.

21GA09	INVESTMENT AND PORTFOLIO MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course is aimed at giving students an understanding of securities markets, structure and risk-return characteristics of securities. Students will have an exposure to equity analysis, security selection, portfolio construction, evaluation and revision.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Evaluate various investment alternatives		3				
CO2	Value the intrinsic price of a security			3			
CO3	Predict the movement of security price				3		
CO4	Evaluate the value of individual security and portfolio				3		
CO5	Construct and manage efficient portfolio of securities				3	2	

UNIT 1: Investment Alternatives and Mechanics of trading	9 Hours
Nature and scope of Investments – Different avenues of Investments - Risk Vs Return; Stock Exchanges – Organization and Functions - Listing of Securities – Mechanics of Trading – Online Trading – SEBI Regulations related to stock exchanges	
UNIT 2: Fundamental Analysis	**9 Hours**
Fundamental Analysis – Economic, Industry, Company – EMH - Forms of EMH – Tests – Implications for Investment Policies – Dow theory	
UNIT 3: Technical Analysis	**9 Hours**
Candle Sticks – Chart Patterns and Gap Theory - Oscillators – MACD, RSI, ROC, Bollinger Band, ADX and Alligator	
UNIT 4: Portfolio Theory & Analysis	**9 Hours**
Markowitz Portfolio Theory, Sharpe Single Index Model, CAPM & APT. Portfolio - Risk and Return	
UNIT 5: Portfolio Management	**9 Hours**
Portfolio Process – Portfolio Objective and policy – Portfolio Selection – Implementation and Monitoring – Evaluation and Revision	
Total :	45 Hours

Reference Books
1. Bhalla, "Investment Management, Sultan Chand Publishing", 19th Edition, 2008
2. Donald E.Fischer and Ronald J.Jordan, "Security Analysis and Portfolio Management", Pearson Education, 7th Edition, 2019.
3. Kevin. S, "Security Analysis and Portfolio Management", PHI, 2nd Edition, 2015.
4. Prasanna Chandra, "Investment Analysis and Portfolio Management", Tata McGraw Hill, 5th Edition, 2017.
5. Reiley& Brown, "Investment analysis and Portfolio Management", Cengage Learning, 11th Edition, 2019.

21GA10	INVESTMENT BANKING	3 0 0 3

COURSE OVERVIEW

This course will help students to delve into the structure, management and practices of investment banking, covering the business activities of mergers and acquisitions, financing and investment, and other value-added advisory services.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Acquire knowledge on investment banking activities		3				
CO2	Acquire skills necessary for issuing securities		3				
CO3	Evaluate restructuring and disinvestment decisions				3		
CO4	Suggest instruments that can be used to raise international funds				3		
CO5	Understand the ethical perspective in investment banking services						3

UNIT 1: Investment Banking Paradigm	9 Hours
Introduction to Financial concepts and instruments- Investment banking - Global/Indian Investment Banking Industry Scenario - Activities – Investment banking Vs Merchant banking – Functions	
UNIT 2: Issue Management	**9 Hours**
Guidelines for Issues Management – IPO - Offer documents - Management of capital issues –Pre issue activities - Post issue activities - Underwriting and Brokerage - Registrar and Share transfer Agents - Pricing and Marketing of public issues - Listing Guidelines	
UNIT 3: Disinvestment and Corporate restructuring	**9 Hours**
Disinvestment mechanisms - Buy backs – Mergers – Acquisitions - Delisting - Methods – Procedures – Problems, Leveraged buy-outs, NCLT	
UNIT 4: International Financial Instruments	**9 Hours**
International Financial instruments – Crowd Funding - Debt / Equity – ADR – GDR – ECBs - FCCBs – PN -NIFs – MTNs - Raising of offshore Finance – Sources - Advantages – Risk – Legal aspects & Modalities.	
UNIT 5: Regulations and Ethics	**9 Hours**
Regulatory framework of Investment Banking, Stock Exchanges & Share Brokers - Recent Developments. Legal, ethical and governance issues in investment banking	
Total :	**45 Hours**

Reference Books
1. David P.Stowell, "Investment Banks, Hedge Funds and Private Equity", Elsevier, 3rd Edition, 2017.
2. JoshuaRosenbaum and Joshua Pearl, "Investment Banking: Valuation, LBOs, M&A, and IPOs", Wiley, 3rdedition, 2020.
3. K.ThomasLiaw, "The Business of Investment Banking: A Comprehensive Overview", John Wiley and Sons, 3rd Edition, 2011.
4. Mathew Kranz and Robert R.Johnson, "Investment Banking for Dummies", John Wiley and Sons. 2nd Edition, 2020.
5. Michel Fleuriet, "Investment Banking Explained: An insider's guide to the Industry", McGraw Hill, 2nd Edition, 2019.
6. PradapGiri.S, "Investment Banking, concepts, Analyses and Cases", McGraw Hill India, 3rd Edition, 2017.

21GA11	PROJECT APPRAISAL AND FINANCE	3 0 0 3

COURSE OVERVIEW

This course introduces the aspects of project financing, evaluation and execution. The course is designed to provide knowledge of evaluation techniques that can be applied to examine the feasibility of the projects in real-life scenario.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Understand and explain the importance of Project financing		3				
CO2	Identify appropriate means of project financing		3				
CO3	Utilize evaluation techniques to determine project feasibility				3		
CO4	Understand and explain the various risk mitigation methods to project financing				3		
CO5	Apply methods of real option evaluation to project evaluation				3		

UNIT 1: Project Financing	9 Hours
Project financing- Concept and Meaning – Unique characteristics – Requirements – Rationale for project financing - Softwares for Project Management	
UNIT 2: Sources of Project Financing	**9 Hours**
Means of project financing – Sponsors' –lenders' and other stakeholder perspective – project financing structures - Project cash flow determination and financing options – fund vs non-fund financing – formulating financing mix – Features of debt structure – Debt service covenants	
UNIT 3: Project Feasibility Analysis	**9 Hours**
Project viability and evaluation – Essentials of cost estimation forecasting - Measures used by investors – NPV- IRR- Payback – XIRR- MIRR- Economic IRR- Decision tree analysis – scenario and sensitivity analysis - Evaluating Projects with constraints	
UNIT 4: Risk Analysis	**9 Hours**
Project Viability – Measures used by lenders- Leverage – Debt Service – Loan Life – Project life cover ratios– preparing the project financing plan- lender's appraisal; Risk Mitigation in projects – Common risks in projects – Risk mitigation methodologies – financial closure risk – securitisation as a tool for risk mitigation	
UNIT 5: Real Option Valuation	**9 Hours**
Real option evaluation of projects – concept and application – Techniques - Simple option valuation – option to expand, contract, abandon – Case studies.	
Total:	45 Hours

Reference Books
1. Chandra, Prasanna, "Projects", 9th Edition, McGraw Hill Education, 2019.
2. Finnerty, John, "Project Financing: Asset Based Financial Engineering", 3rd Edition, Wiley and Sons Inc., 2013.
3. Mun, Jonathan, "Applied Analytical Project Management", Liper Press, 2020.
4. Srivastava Vikam and Rajaram V, "Project and Infrastructure Finance: Corporate Banking Perspective", Oxford University Press, 2017.
5. Stefano, Gatti, "Project Finance in Theory and Practice", 3rd Edition, Elsevier, 2018.

21GA12	VENTURE CAPITAL AND PRIVATE EQUITY	3 0 0 3

COURSE OVERVIEW

This course will provide a comprehensive understanding of the private equity markets and the various tools available for analysing investment opportunities. Students will also gain knowledge on the strategies adopted by the player in the markets.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Distinguish venture capital, private equity, angel capital etc		3				
CO2	Evaluate and short list potential ventures for investment				3		
CO3	Apply various models in valuation of start -ups			3			
CO4	Examine alternative deal structuring and exit strategies				3		
CO5	Acquire knowledge on legal regulations for venture capital and private equity firms		3			2	

UNIT 1: Introduction to Venture capital and private equity	9 Hours
Venturecapital,Angelfinancers,PrivateEquity,Hedgefunds, theirclassificationanddifferentcharacteristics. HistoryofVenturecapital,Angelfinancers,PrivateEquity inIndia.DifferentmodelsofVC and Private equity	

UNIT 2: Workingprocedures	9 Hours
The Venture capital cycle, Opportunity recognition, Key parties involved, value of opportunity, negotiation on terms,harvestor exitinvestment. Initialscreening, duediligence, riskreturnfit,Return oninvestment fromcashflows, breakevenpoint	

UNIT 3: Valuation of companies	9 Hours
Understandingthenatureofbusiness,Methodsofvaluationanditsrolethroughouttheventurecapitalprocess.Valuing companieswithoptions:Realoptions.DifferenceinapproachandevaluationprocessofPE,angelfinancer,Venturecapitalistwith Banks and financial institutions.	

UNIT 4: Deal structuring and Exit	9 Hours
Intention,Securitytype,Liquidationpreferences,Shareholderagreement,Sharepurchaseagreement. Going public: Need for going public, IPO process, role of banker, regulation and cost.Sellingtheventure:Mergersandacquisitions, Buybackof shares.	

UNIT 5: Performance and Regulatory framework	9 Hours
Performance of venture capital: sector wise and year wise. SEBI regulations, Ethics and code of conducts for venture capitalists and private equity	

	Total:	45 Hours

Reference Books
1. Chandra.P, "Corporate Valuation", 2nd Edition McGraw Hill, 2020.
2. Invest, L. "Private Equity: Minority Investments and Buyouts, A Guide to Working with Private Equity", 2nd Edition, Amazon Digital Services LLC - KDP Print US, 2019.
3. Kumar.R. and Sharma.M, "Venture Capital Investments", Sage Publications, 2010.
4. Ramsinghani.M, "The Business of Venture Capital", 3rd Edition, Wiley, 2021.
5. Zeisberger.C, "Mastering Private Equity", Wiley, 2017.

21GA13	FINANCIAL MODELING	3 0 0 3

COURSE OVERVIEW

This course gives a hands-on experience to students to use spreadsheets in building models for various financial problems and help them take decisions based on them.

CO #	`CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Build models to forecast Financial statements		3				
CO2	Build models to value Bonds		3				
CO3	Build models to find efficient portfolio		3				
CO4	Build model to calculate the options payoff		3				
CO5	Building models to create simulations		3				

UNIT 1: Forecasting Financial Statements	9 Hours

Building financial statements in spreadsheets – financial ratio analysis - forecasting financial statements

UNIT 2: Bond analytics	9 Hours

Spreadsheet models to find Bond price – Yield to maturity – Duration – Two-dimensional data table for bond price sensitivity analysis - Creating yield curve – Bond immunization strategy using solver – calculate convexity

UNIT 3: Portfolio Management	9 Hours

Build Covariance matrix – Calculate portfolio variance –Use data tables to create efficient frontiers – Portfolio optimization using solver

UNIT 4: Option pricing Models	9 Hours

Option Payoff – portfolio with options- Binomial option pricing model – Black Scholes option price calculator – Sensitivity analysis of factors on option price – Option Greeks calculator

UNIT 5: Price Simulations	9 Hours

Monte Carlo methods using data tables – simulating stock prices – VaR – Simulating option prices.

TOTAL	45 Hours

Reference Books
1. ChandanSengupta,Financial Analysis and Modeling using Excel and VBA, Wiley Publications, Second Edition, 2011
2. John S. Tjia, Building Financial Models, McGraw-Hill Publications, Third Edition, 2018
3. Michael Rees, Financial Modelling in Practice: A Concise Guide for Intermediate and Advanced Level, Wiley Publications, First Edition, 2011
4. Simon Benninga, Financial Modeling,MIT Press, Fifth edition, 2022
5. Wayne Winston, Microsoft Excel Data Analysis and Business Modeling, Fifth Edition, Microsoft Press, 2017

HUMAN RESOURCE ELECTIVES

21GB01	BEHAVIOUR FOR MANAGERIAL EFFECTIVENESS	3 0 0 3

COURSE OVERVIEW

This course focuses on equipping studentsto buildprofessional managerial behaviour for achieving best outcomes from the team and to be role model managers for successors.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand & analyse the managerial competencies required for positive behaviour in contemporary organizations.	2					
CO2	Analyse behaviour and overcome perceptual influences		3				
CO3	Classify functional and dysfunctional job behaviours and demonstrate effective managerial criteria			3			
CO4	Solve team related issues and create structures to support effective behaviour				3		
CO5	Demonstrate adequate creativity and self-development skills					2	

UNIT 1: Behavioural Basics	9 Hours
Behaviour – Manager - effectiveness, Positive behaviour for managers - Influence of behaviour for effectiveness - Managerial job dimensions, Managerial Competencies, Time dimensions in managerial jobs, Effective and Ineffective job Behaviour.	
UNIT 2: Assessing Behaviours	9 Hours
Analyzingbehaviour, assessing behaviour, Luthans&Kreitner Model, Perception: Linkage between perception and organizational outcomes, Linking perception and attribution to decision and behaviour, perceptual influence to have productive behaviour, Impression Management.	
UNIT 3: Managing Interpersonal Behaviour	9 Hours
Functional and Dysfunctional job behaviour, influencing behaviour of subordinates, Understanding the forbidden behaviour of managers, Empowering subordinates, Identifying managerial talent among subordinates, Effective management criteria, Post performance Feedback.	
UNIT 4: Team Handling Behaviour	9 Hours
Retention, Employee engagement, Managing ethical issues dealing with team, behaviour for handling conflicts, Negotiation skills, Job challenges for team, Role of organizational design in supporting effective teams, Creating structures to support effective behaviour.	
UNIT 5: Managerial Behaviour for Organizational Efficiency and Self Enhancement	9 Hours
Self-directed learning, Self-Development - Knowledge Management - Culture for organizational creativity, Creativity Techniques.	
	TOTAL: 45 Hours

Reference Books

1. Aswathappa, K. "Human Resource Management: Text & Cases", 8th Edition, Tata McGraw Hill Education Private Limited, 2017.
2. Chandan, J. S.,"Organizational Behaviour", Vikas Publishing, 2011.
3. Greenberg, J. "Managing Behaviour in Organizations", Pearson/Prentice Hall, 2010.
4. Hersey, P., Blanchard, K. H., & Johnson, D. E., "Management of Organizational Behaviour: Leading Human Resources", Pearson, 2013.
5. Parikh, M., & Gupta, R., "Organizational Behaviour", Tata McGraw Hill Education Private Limited, 2010.

21GB02	COMPENSATION AND BENEFITS MANAGEMENT	3 0 0 3

COURSE OVERVIEW

The course helps the students to understand the factors that are to be addressed to ensure an effective total compensation and benefits program. The course deals with basis of fixing compensation, job evaluation process, incentive schemes and benefits. Students completing this course will have a comprehensive understanding on compensation and benefits in an organizational setting.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the dimensions of compensation and design issues		3				
CO2	Formulate the compensation strategy using job evaluation technique			2			
CO3	Prepare a comprehensive wage policy / salary structure in the current context				2		
CO4	Devise incentive schemes for various levels of employees in an organization				2		
CO5	Apprehend the knowledge on fringe benefits and retirement plans		3				

UNIT 1: Compensation Management	9 Hours
Compensation –Meaning, Objectives of Compensation, Compensation and Non-compensation Dimensions, Compensation System Design Issues, Compensation Approaches. Strategic Issues and Internal Alignment.	
UNIT 2: Job Evaluation	**6 Hours**
Compensation Strategy at Micro Level, Concept of Equity, Job Evaluation - Methods of job evaluation, Process of Job Evaluation, Problems Involved in Job Evaluation.	
UNIT 3: Wages and Salary Administration	**12 Hours**
Concept of wage, Code on Wages - Fixing minimum wage, Payment of Wage and Bonus; Compensation Benchmarking , Concept of Salary Structure, Methods of Payment - Factors Affecting Pay Levels. Designing Pay Structures, Different Types of Pay Structures, Designing Pay Ranges and Bands. Income tax act and its impact on salary structure, Deductions and allowances - Executive Compensation, Competency based Compensation, Skill-based Pay and Pay Banding - International Remuneration - Expatriate Compensation	
UNIT 4: Incentive Schemes	**9 Hours**
Variable Pay-Types of Incentive Schemes, Wage Incentive Plans, Pay for Performance Plans. Profit Sharing and Co-Partnership. Employee Stock Ownership Plans (ESOP). Team-based Pay.	
UNIT 5: Fringe Benefits And Pension Plans	**9 Hours**
Classification of Employee Benefits, Long term Incentive plans, Strategic Perspectives on Benefits, Designing a Benefit Package. Security Benefits to Employees. Introduction to Fringe Benefits, Coverage of Benefits, Fringe Benefits in India. Voluntary Benefits: Retirement, Pension and Super Annuation plan.	
	Total: **45 Hours**

Reference Books

1. Armstrong, M., "Armstrong's Handbook of Reward Management Practice: Improving Performance Through Reward" 6th Edition, Kogan Page Publishers, 2019.
2. Berger, L., & Berger, D., "The Compensation Handbook - A state-of-the-Art-Guide to Compensation Strategy and Design", 6th Edition, McGraw Hill, 2015.
3. Milkovich, G. T., Newman, J., &Venkataratnam, "Compensation", Special Indian Edition, McGraw Hill, 2017.
4. Newman, M., Gerhart, B., &Milkovich, G. T., "Compensation", 12th Edition, McGraw Hill, 12thEdition, 2020.
5. Sharma, R. C., & Sharma, S., "Compensation Management", 1st Edition, Sage Publications, 2019.

21GB03	CONFLICT MANAGEMENT	3 0 0 3

COURSE OVERVIEW

In this course, students will learn about different types and sources of conflict, how to manage expectations, practically deal with difficult colleagues and evaluate the cost of workplace conflict, while promoting constructive conflict. Students will also be introduced to negotiation and mediation techniques that will be used in making business deals.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Recall the fundamentals of conflict - its components, types and levels		3				
CO2	Identify situations and sources of conflict in the organizational context				2		
CO3	Design interventions to resolve conflicts				3		
CO4	Develop skills for managing workplace conflict	3					
CO5	Negotiate and mediate business deals			3			

UNIT 1: Introduction to Conflict	10 Hours
Understanding Conflict – Different Schools of Thought, Components of Conflict, Perspectives and Types of Conflict, Levels of Conflict – Intra-personal, Interpersonal and Group/Team	
UNIT 2: Sources of Conflict	**7 Hours**
Cognitive Dissonance, Neurotic Tendencies, Relationship Rules, Personality, Gender and Age RelatedIssues, Cross-Cultural Issues, Role Incompatibility, Stress, Difficult Bosses and Colleagues, Other Sources of Group and Organizational Conflict	
UNIT 3: Approaches to Managing Conflict	**9 Hours**
Thomas Kilmann Approach to Conflict Resolution, BehaviouralStyle and Conflict Handling, CosierSchank Model of Conflict Resolution, Dealing with Difficult Bosses, Colleagues and Subordinates, Strategies to Resolve Team Conflicts	
UNIT 4: Skills for Managing Conflict	**9 Hours**
Effective Listening and Dialogue Skills, Creativity and Change in Conflict Management, Conflict Prevention and Early Resolution, Evaluating Cost of Workplace Conflict, Understanding Impact of Constructive Conflict	
UNIT 5: Negotiation and Mediation	**10 Hours**
Introduction to Negotiation, Types of Negotiation, Dimensions of Negotiation, Negotiation Steps, Negotiation Tricks and Traps, Value Creation in Negotiation, Mediation, Responsibilities of Mediator, Types of Mediation, Why Negotiations and/or Mediations Fail?	
	Total: 45 Hours

Reference Books

1. Fahed-Sreih, J. "Conflict in Family Businesses: Conflict, Models, and Practices", 1st Edition, Palgrave Macmillan, 2018.
2. Gallo, A. "HBR Guide to Dealing with Conflict", Harvard Business Review, 2017.
3. Hakim, A. K. "Working with Difficult People: Handling the Ten Types of Problem People Without Losing Your Mind", Penguin, 2017.
4. Proksch, S. Conflict Management, 1stEdition, Springer, 2016.
5. Raines, S. S., "Conflict Management for Managers: Resolving Workplace, Client, and Policy Disputes" 2ndEdition,Rowman& Littlefield Publishers, 2019.

21GB04	**LABOUR LEGISLATION AND INDUSTRIAL RELATIONS**	3 0 0 3

COURSE OVERVIEW

New wage codes are being introduced to replace /amalgamate over 60+ laws in labour/labour legislation and industrial relations, to put in place mechanisms to deal with the changing environment especially in a post-COVID world. This course aims to provide a thorough overview of the new codes, the managerial implications of the codes and prepare students to understand the new HR and IR paradigms in place

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	To understand the OSHW codes and map HR requirements to ensure compliance		3				
CO2	To be able to comply with the regulations and the processes of the Code on Wages and its implications on non-compliance				3		
CO3	To map out the mandatory requirements for an organization in the context of social security and the legal requirements entailed in the code.						2
CO4	To comprehend the IR facets, the aspects of a trade union and their role and rights and to formulate procedures and SOPs for relevant processes under the code				2		2
CO5	To understand other legal aspects from a HR perspective and the avenues and steps involved in resolution of IR issues.		3				

UNIT 1: The Occupational Safety- Health and Working Conditions Code 2020	**9 Hours**

Applicability- Authorities- One Establishment - One Registration- Duties And Rights Of Employer And Employee -Working Conditions And Welfare Facilities- Working Hours- Leaves- Special Provisions Relating To Employment Of Women- Special Provisions Relating To Contract Labour- Special Provisions Relating To Factories- Special Provisions Relating To Inter-State Migrant Workers- Offences And Penalties- Social Security Fund.

UNIT 2: The Code on Wages 2019	**8 Hours**

Key Definitions .Prohibition of Discrimination on the Ground of Gender. Minimum Wages. Payment of Wages .Payment of Bonus .Central Advisory Board and State Advisory Boards. Payment of Dues- Claims and Audit .Appointment of Inspector-cum-Facilitators and their Powers.Offences and Penalties. Miscellaneous Provisions

UNIT 3: The Code on Social Security 2020	**8 Hours**

General Features - Employees' Provident Fund -Employees' State Insurance Corporation Gratuity- Maternity Benefit- Social Security And Cess In Respect Of Building And Other Construction Workers- Unorganized Workers- Gig Workers And Platform Workers- Employment Information And Monitoring

UNIT 4: Industrial Relations Code 2020	**10 Hours**

Registration of Trade Union- Cancellation of Trade Union. Alteration of Name of Trade Union;
Formation of Work Committee. Incorporation of a Registered Trade Union. Recognition of Negotiating Union. Preparation of Standing Order. Register of Standing Order. Constitution of Industrial Tribunal. Illegal Strikes and Lock-outs. Procedure for Retrenchment and Re-employment of Retrenched Worker Compensation to Workers in case of Transfer of Establishment .Prohibition of Lay-off. Closure of an Industrial Establishment

UNIT 5: Other Relevant Acts and Processes	**10 Hours**

The Shop and Establishment Act 1947- The Sexual Harassment of Women at Workplace (Prevention-Prohibition and Redressal Act) 2013, Alternate Dispute Redressal , Disciplinary processes and best practices.

	Total:	**45 Hours**

Reference Books
1. ICSI, "Handbook on The Code on Wages", ICSI, New Delhi, 2019.
2. Ramesh, C., "The Code on Social Security 2020", Notion Press, New Delhi, 2020.
3. Taxmann, "Taxmann's New Labour & Industrial Laws", Taxmann, New Delhi, 2020.

21GB05	LEADING ORGANIZATIONAL CHANGE AND DEVELOPMENT	3 0 0 3

COURSE OVERVIEW

Contemporary business environment dynamics often necessitate organizational changes. Organizational competitiveness and survival is dependent on leadership which is crucial in managing any transition.This course discusses the theories, methods, issues and challenges associated with organizational change and development along with experiences and dilemmas in practice, which together help students gain an understanding on what contributes to carrying out of a successful and lasting change initiative.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Appreciate the organization as a system operating in multi-dimensional environments, understanding the rationale and implications of organizational change.		2				
CO2	Understand and explain the diagnostic models used in planning organization change and evaluate individual and organizational receptiveness and readiness.			3			
CO3	Analyse the role of leadership, its complexity, significance and impact on organizational transformation.				3		
CO4	Evaluate the theoretical and practical values of processual perspectives in change and Identify the causes of change failures				3		
CO5	Comprehend the approach and role of organizationaldevelopment in the context approach of organizational change and extensions of the OD approach to deliver sustainability.						2

UNIT 1: Organizations and their Changing Environments	10 Hours

The historical context for change, Environmental pressures for change, Internal organizational change drives. Types of organizational change, Organization renewal systems approach, sociotechnical system and future shock.

UNIT 2:Change: A Diagnostic Approach	10 Hours

The Six-Box organizational model, the 7-S framework. The star model, organizational strategy and change, the cultural web, organizational structure and change. Diagnosing readiness for change, Red flags in diagnosis.

UNIT 3: The Leadership of Change	7 Hours

Management and leadership, theories of change leadership, change leader or change managers, change roles, leadership style and change, dealing with Resistance to change.

UNIT 4:Change Management Process and Contingency Approaches	8 Hours

Approaches to managing change, transformation failure, DICE and ADKAR model, stage model, process perspectives on change, Contingency approaches to change management.

UNIT 5: Alternative Approaches to Managing Change	10 Hours

Organizational development, engaging in large scale change, Appreciative enquiry, positive organizational scholarship, dialogic organizational development, managing change from a sense making perspective.

	Total:	45 Hours

Reference Books

1. Barbara Senior, B., Swailes, S., &Carnall, C., "Organizational Change", 6th Edition, Pearson, 2020.
2. Brown, R. D., "An experiential approach to Organizational Development", 8th Edition, Pearson Education, 2014.
3. Cheung-Judge, M., &Holbeche, L, "Organization Development: A Practitioner's Guide for OD and HR", 2nd Edition, Kogan Page, 2015.
4. Cummings, T. G., & Worley, C. G., "Organizational Development and Change", 10th Edition, Cengage, 2015.

5. Palmer, I., Dunford, R., & Buchanan, "Managing Organizational change: A Multiple Perspectives Approach", 3rd Edition, McGraw Hill, 2017.

21GB06	LEARNING AND DEVELOPMENT	3 0 0 3

COURSE OVERVIEW

This course introduces the learning principles, strategies and human resources development practices as a whole. The objective of the course is to expose students to the breadth of topics and the underlying principles of learning, training and development. The topics covered in this course include learning principles, training and development and evaluation of human resources development interventions. At the end of the course, the students should be able to choose the appropriate learning, training and development practices in the organizational context.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Identify appropriate learning styles and principles and explore the ways to maximize learning		3				
CO2	Analyse the training and development needs of an organization and that of individuals.		3				
CO3	Illustrate the issues in designing and developing of the training and development programmes			2			
CO4	Choose the appropriate training and development activities based on the individual and organizational needs.				3		
CO5	Evaluate the effectiveness of training and development activities in an organization.			3			

UNIT 1: Learning Styles and Strategies	9 Hours
Learning principles – Learning strategies and styles – Kolb's Learning Styles- Bloom's Taxonomy- Individual differences in the Learning process. Maximizing learning –Recent developments in Instructional and cognitive psychology. Model of employee behaviour–External influences –Internal factors that influence employer behaviour.	

UNIT 2: Role Analysis and Training Need Analysis	9 Hours
Role Analysis: Developing the person in the role, RAT (Role Analysis Technique). Role of T & D in organization – Training Process model- Identification of Training Needs: Organizational analysis – Task Analysis – Person analysis – Prioritizing HRD needs – identifying individual's developmental needs.	

UNIT 3: Designing Training and Development	9 Hours
Principles of training design -defining the objectives – make / buy Decision – selecting the trainers – preparing lesson plan, training methods, materials – scheduling	

UNIT 4: Implementing T & D Programs	9 Hours
Training delivery methods, principles involved in selection of various methods – Techniques of training at different levels – Skills of an effective trainer – e learning and use of technology in training	

UNIT 5:Evaluation and Transfer of Training	9 Hours
Training Evaluation: Purpose – methods and techniques (models of evaluation) - Transfer of training – issues – transfer process – theories – strategies – Organization and work environmental factors that influence transfer of training – Avoiding common evaluation pitfalls.	
Total:	**45 Hours**

Reference Books

1. Beevers, K., Rea, A., & Hayden D, "Learning and Development Practice in the Workplace", Kogan Page, 2019.
2. De Simone R, L., & Werner, J, M, "Human Resource Development", 6th Edition, Cengage learning, 2016.
3. Ford, J K, "Learning in Organizations- An Evidence-Based Approach", Taylor & Francis, 2020.

4. Noe, R, "Employee Training & Development", 8th Edition, McGraw Hill, 2020.
5. Ross, S C, "Training and Development in Organizations - An Essential Guide for Trainers", Taylor & Francis, 2018.

21GB07	MANAGING GLOBAL WORKFORCE	3 0 0 3

COURSE OVERVIEW

The course aims to enable students with the ability to recognize the diversity in the global workforce that global firms face in today's increasingly complex and unstable world. It provides a comprehensive understanding of the ways multinational corporations can successfully integrate and draw on the talent available across the globe. The course provides students with a robust understanding of the international HR practices and issues. It builds awareness and appreciation of the international business context and how HR can contribute as a strategic partner to enhance multinational's performance and competitive advantage

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Identify the challenges in the global labour market in a multicultural environment				2		
CO2	Correlate the human resource strategy- organizational structure - competitive strategy matrix and map the requirements for global staffing.			3			
CO3	Comprehending the challenges of expatriate and repatriate performance and evaluate the role of training in enabling performance.		3				

UNIT 1: Introduction to IHRM and Cross Culture Management	10 Hours

CO4	Examine the complexities in the context of compensation and performance management in multi-national organizations.			3			
CO5	Understand and explain the role of unions in international industrial relations.		2				

Overview of International Human Resources management, External & Internal forces influencing global workforce management, changes &challenges in global labour market, culture, models of culture and impact of culture in various business contexts such as mergers and acquisitions.

UNIT 2: Sourcing Human Resources for Global Markets	10 Hours

Competitive strategies for Multinational corporations, linking human resources management to competitive strategy and organization structure. The role of HR planning in carrying out MNC strategy for both short and long term. International work arrangement, key factors affecting global staffing.

UNIT 3: International Training, Development & Careers	10 Hours

Role of training in on - assignment performance. Components of pre-departure training, effectiveness and trends in international training & developing Repatriation, factors affecting re-entry, Designing a repatriation program.

UNIT 4: Global Performance Management and Compensation	10 Hours

Performance Management process, Considerations for global performance management, planning and implementing global performance appraisal, Managing compensation on a global scale. Key compensation considerations for expatriates, HCN's& TCN's.

UNIT 5: International Industrial Relations	5 Hours

Issues in international industrial relating and the policies & practices of MNE's,strategies adopted by trade unions when dealing with MNE's. Recent trends and uses in the global work force context.

	Total:	45 Hours

Reference Books

1. Dreasher, L, "Mastering Cultural Differences: Strategies for Leading a Global Workforce", 1st Edition, Indie Books Intl, USA, 2021.
2. Aswathappa, K., & Dash, S, "International Human Resource Management", 3rd Edition, McGraw Hill India, 2020.
3. Edwards, T., & Rees, C. "International Human Resource Management", 3rd Edition, Pearson Education, London, 2017.
4. Dowling, P. J., Festing, M., & Engle A. D. Sr, "International Human Resource Management", 7th Edition, Cengage, India, 2017.
5. Vance, C. M., & Paik, Y., "Managing a Global Workforce", 3rd Edition, Routledge, London, 2014.

21GB08	PEOPLE ANALYTICS	3 0 0 3

COURSE OVERVIEW

In this course, students will learn about different types of HR metrics, how to present HR data appropriately and how to derive insights from the wealth of data available in organizations. These insights could then be used to make strategic decisions and policy changes. Students will also learn to conduct HR Audits and present the most pertinent HR data through dashboards.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Represent HR data through appropriate Business Intelligence tools	3					
CO2	Evaluate and derive insights from Recruitment and Diversity metrics		3				
CO3	Analyse and obtain insights from Training & Development and Workforce Deployment metrics		3				
CO4	Assess and infer insights from Talent Retention and Career Progression metrics		3				
CO5	Perform HR Audits and present HR data through dashboards	3					

UNIT 1: Introduction to HR Metrics and Excel Charting	11 Hours
Evolution and timeline of HR Analytics - Types of Analytics - HR Analytics Applications - Summarizing & Reporting HR Data using Business Intelligence tools (Importing Data, What-if Scenarios, Pivot Tables, Representation through Funnel Chart, Bullet Chart, Pyramid, Thermometer Chart, Dynamic Charts etc.)	
UNIT 2: Recruitment and Diversity Analytics	**9 Hours**
Social Media for Recruitment and Employer Branding, Diversity Index, Offer Reject and Renege (Logistic Regression), Attrition (Random Forest Algorithm), Channel Efficiency, Recruitment Metrics	
UNIT 3: Training and Development & Workforce Deployment Analytics	**8 Hours**
Training Outcome Analysis, Training hours and cost metrics, ROI calculation, Employee Profiling, Turnover Index, Natural Language Processing in HR Analytics – Uncovering employee insights	
UNIT 4: Talent Retention and Career Progression Analytics	**8 Hours**
Retention Index, Voluntary and involuntary Turnover, Career Path Index, Succession Readiness index, Employee Satisfaction and Engagement Surveys, Gamification for Employee Engagement	
UNIT 5: HR Audits And Visualisation of HR Data	**9 Hours**
HR Audit Process, Recruitment and Selection Process Audit, Statutory Compliance Audit, Benchmarking, Design Thinking Principles for Dashboards, KPI Dashboard, KPI Scorecard, HR Balanced Scorecard	
Total:	**45 Hours**

Reference Books

1. Acharya, S. "Data Analytics Using R", McGraw Hill Education, 2018.
2. Bhattacharyya, D. K., "HR Analytics: Understanding Theories and Applications", 1st Edition, Sage Publications India Pvt Ltd, 2017.
3. Edwards, M.,& Edwards, K, "Predictive HR Analytics: Mastering the HR Metric", 2nd Edition, Kogan Page, 2019.
4. Lander, J. P, "R for Everyone", 2nd Edition, Pearson India Education Services, 2018.
5. Shen Ng, M, "Predictive HR Analytics, Text Mining & Organizational Network Analysis with Excel" Independently Published, 2019.

21GB09	PERFORMANCE MANAGEMENT	3 0 0 3

COURSE OVERVIEW

The Performance Management course outlines the importance of an effective PMS in enabling organizations define and achieve their mission and vision. It reinforces the concept that performance management is an ongoing process of planning, facilitating, assessing, and improving individual and organizational performance. In addition, the course emphasizes the PM Cycle, the different approaches, the different methods available various approaches of measuring the effectiveness of human resource activities that are designed to enhance individual, team and organizational performance.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain the basic concepts and foundations in Performance Management		3				
CO2	Understand and apply the different measurement approaches				2		
CO3	Choose strategies for performance planning and monitoring in organizations			2			
CO4	Develop a performance appraisal system				3		
CO5	Devise methods for team performance, employee development and coaching		2				

UNIT 1: Introduction to Performance Management	7 Hours
Defining Performance – Meaning of Performance Management – Historical Developments - Aims and Role of Performance Management – Contribution of Performance Management – Characteristics of an Ideal Performance Management System – Dangers of Poorly Implemented PMS – Integrating PM with other HR and Developmental Activities	
UNIT 2: Measurement and PM Cycle	**10 Hours**
Performance Management Process - Approaches to Measuring Performance: Trait, behaviour and Results Approach – Determinants of Performance – Performance Dimensions - Measuring Results: Determining Accountabilities – Objective and Performance Standard – Measuring Behaviours: Comparative System – Absolute system – PM cycle and Linking Performance management with Business Strategy	
UNIT 3: Performance Planning and Monitoring	**10 Hours**
Theory of Goal Setting – Gathering data pertaining to Performance Criteria –Preparation and Communicating Performance System to employees - Appeals Process. Performance Monitoring – Methods and Techniques – Employee Performance Metrics and use of analytics	
UNIT 4: Performance Assessment and Review	**9 Hours**
Evaluating Individual Performance – Different Methods of Appraisals _ Factors affecting Appraisals – Errors – Reducing Rater Biases - Preventing Rating Distortion –Personal Development Plan - Significance of Performance Review and Discussion Process	
UNIT 5: Managing Team Performance and Employee Development	**9 Hours**
Definition and Importance of Teams – Types of Teams and Implication for Performance Management – Purpose and Challenge of Team performance Management – Rewarding Team Performance – Role of Performance Coaching – Process and Styles	
	Total: 45 Hours

Reference Books

1. Aguinis, H, "Performance Management for Dummies", John Wiley & Sons, 2019.
2. Armstrong, M, "Armstrong's Handbook of Performance Management: An Evidence-based Guide to Delivering High Performance", Kogan Page Publishers, 2009.
3. Bacal, R, Performance Management", 2nd Edition, McGraw Hill Professional, 2012.
4. Herman Aguinis, "Performance Management", 3rd Edition, Pearson Education India, 2013.
5. Rao, T. V, "Performance Management: Toward Organizational Excellence", SAGE Publications India, 2016.

21GB10	**TALENT ACQUISITION AND MANAGEMENT**	**3 0 0 3**

COURSE OVERVIEW

The course focuses on equipping students with concepts, models, methods, and best practices for talent acquisition and talent management. It enables students to identify appropriate strategies for human resource planning, hiring, engagement and retention management, to achieve organizational effectiveness.It highlights the role of Information Technology in Talent Acquisition.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the core concepts of HR Planning , Talent Acquisition and Management		3				
CO2	Choose appropriate recruitment and testing strategies for identifying right talent for the organization			2			
CO3	Apply suitable interviewing techniques in employee selection for effectiveness				2		
CO4	Design strategies for employee engagement and retention in organizations			2			
CO5	Analyse the role of Information Technology in Talent Acquisition		2				

UNIT 1: Introduction to Talent Acquisition	**10 Hours**
Introduction to Talent Acquisition, Strategic Alignment and HR Planning , HR Planning , Assessing Staffing Need Analysis,Environmental scanning,Forecasting HR requirements and availabilities-demand and supply, Preparing Action Plans – Managing Shortage and Surplus ,Best practices& Trends in Talent Acquisition, Challenges in Talent Acquisition.	
UNIT 2 : Attracting Talent	**10 Hours**
Process of Talent Acquisition and Sources of Recruitment, Internal & External Recruitment,Contract Staffing and Gig Workforce, Selection Tests- Measurement, Importance and use of measures- Reliability and validity of selection tests, Specific use of Psychometric tests in Talent Acquisition	
UNIT 3: Acquiring Talent	**10 Hours**
Interviewing – Nature and Purpose, Interviewing types and choice of appropriate method based on Needs - Virtual interviews for remote hiring - Interview content- Measurement of attributes and behaviour during Interview, Behavioural Event Interviewing – Assessing the effectiveness of Talent Acquisition	
UNIT 4: Engaging Talent	**8 Hours**
Introduction to Onboarding, Designing employee Onboarding, Employee Engagement – Benefits, Drivers , Best Practices and Measurement, Employee Retention – Strategies and Approaches for Retaining Talent – Dealing with Voluntary turnoverand Job Withdrawals – Role of Coaching and Mentoring in Managing talent. Concerns of Gen X, Y and Z in Talent Management	
UNIT 5: Role of Information Technology in Talent Acquisition	**7 Hours**
Introduction, Role of Information Technology in Talent Acquisition, Talent acquisitionand hiring solutions, Creating Business Value through Information Technology, Impact of Social Media, Mobile apps, Cloud and Bigdata in Talent Acquisition.	
Total:	**45 Hours**

Reference Books

1. Belcourt, M., &McBey, K. J, "Strategic Human Resource Planning", Cengage Learning, 2017.
2. Bickham, T, "ATD Talent Management Handbook", 1st Edition, ATD Press, 2015.
3. Gatewood, R. D., Feild, H. S., &Barrick, M. R. "Human Resource Selection", 9th Edition, Wessex Press Inc., 2018.
4. Heneman, H., & Judge, T, Staffing Organizations, McGraw Hill, 2015.
5. Picardi, C. A. "Recruitment and Selection - Strategies for Workforce Planning & Assessment", Sage Publication, 2019.

MARKETING ELECTIVES

21GC01	BRAND MANAGEMENT	3 0 0 3

COURSE OVERVIEW

Strong brands provide better shareholder returns and greater resilience to competitive threats. Given the rapidly changing market dynamics and increasing influence of consumers and technology, it is imperative to understand the underpinnings of developing a strong brand. This course aims to equip students with relevant knowledge and skills necessary to build, manage and grow brands.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understands brand equity & assess the equity of a brand by applying brand equity models		3		3		
CO2	Examine brand identity and positioning strategy by applying brand identity & positioning guidelines/templates/model		3		3		
CO3	Ability to develop a comprehensive go to market strategy for a brand		3		3		
CO4	Evaluate various architecture types & examine brand extension strategies for success.		3		2		
CO5	Ability to conduct brand audit & demonstrate knowledge of brand valuation and methods		3		2		

UNIT 1: The foundation & strategic implications of brand building	9 Hours
Brand- Branding – Brand Management – Product vs. Brand – Brand Equity – Measuring brand equity – Customer-Based Brand Equity Models - How brands create value for customers and company	
UNIT 2: Building the brand	**10 Hours**
Brand Identity – Developing Brand Identity – Protecting brand identity – Managing Brand Identity (Rebranding) – Brand Positioning – Developing Brand Positioning strategy - Repositioning	
UNIT 3: Launching the brand	**8 Hours**
Brand Plan Process – Business review – Drivers & Inhibitors – Strategic Questions – Goals - Preparing a Brand Plan – Execution – Brand communication plan – Communication strategy – Target market – Brand idea – Support points – Desired response – Media options	
UNIT 4: Managing and Growing the brand	**10 Hours**
Brand Architecture and Portfolio Management – Brand Extension – Managing Brand Extensions - Brand Revitalization/Rejuvenation – Managing global brands	
UNIT 5: Measuring & Monitoring Brand Performance	**8 Hours**
Brand Audit – Brand Valuation – Brand Valuation Methodologies	
Total :	**45 Hours**

Reference Books

1. Bill Chiaravalle, Barbara Findlay Schenck, Branding for Dummies, Wiley, 2nd Edition, 2015
2. David Aaker, 20 Branding Principles That Drive Success, Sage Publication, 2015
3. Isaac C. Jacob Kevin Lane Keller, VanithaSwaminathan, Ambi M.G. Parameswaran, Strategic Brand Management, Pearson, 5th Edition, 2020.
4. J N Kapferer, The New Strategic Brand Management, Kogan Page, 5th edition, 2017
5. Tapan K Panda, Product and brand Management, Oxford, 2018

21GC02	CONSUMER BEHAVIOUR	3 0 0 3

COURSE OVERVIEW

This course enables participants to understand the inner characteristics of consumer and buyer behaviour in order to frame effective marketing strategies. It helps to identify and illustrate how these concepts can be used to explain buyers' decision-making process in the marketplace.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Identify factors that influence the consumers' decision-making process and the dynamics of human behaviour in the context of marketing.		3				
CO2	Ability to apply consumer behaviour concepts to complement marketing strategies and tactics.		3				
CO3	Explore and compare the theories of consumer behaviour in the context of personal and organizational buying roles.				3		2
CO4	Apply and demonstrate theories to real world marketing situations using segmentation and profiling strategies			3			
CO5	Appraise models of Consumer Behaviour and determine their relevance to particular marketing situations				3		

UNIT 1: Fundamentals of Consumer Behaviour	9 Hours

The Foundations of Consumer Behaviour: Meaning, Personal and Organizational consumers, Consumer's buying behaviour, model of Consumer decision making, marketing concepts. Consumer needs and motivation: Meaning, positive and negative, rational-vs.-emotional, dynamic nature of motivation, frustration, arousal of motives, types and systems of needs.

UNIT 2: Personality and Perception Theories	9 Hours

Personality and self-concept: Definition, Theories, personality and consumer behaviour, self and self-images. Perception: Elements, subliminal perception, the dynamics, consumer imagery, perceived price, quality, and risk.

UNIT 3: Learning and Attitude Formation and Change	9 Hours

Learning and Involvement: Meaning, motivation, Cues, Response, and reinforcement, learning theories. Attitude formation and change: Types of attitudes, structural models, formation, strategies of attitude change.

UNIT 4: Social Influences in Social Class and Culture	9 Hours

Social influences on buyer behaviour and Social Class and consumer behaviour: Communication via the media, Reference Groups, social class, measurement of social class. The influence of family, culture & sub culture on consumer behaviour: definitions, measurement of culture, ethnic, religious, geographic and regional, racial, age and gender as a subculture.

UNIT 5: Consumer Decision Making Models	9 Hours

Decision Making: Definition, Four views, model of consumer decision making, opinion leadership, dynamics of OL process. Organizational Buyer Behaviour: Nature of organizational buying process influences on organizational buyer behaviour, organizational buying decisions.

	Total :	45 Hours

Reference Books

1. Jain, V., Sheth, J., & Schultz, D, "Consumer Behaviour, A Digital Native", 1st Edition, Pearson, India, 2019.
2. Mothersbaugh, D., Hawkind, D., &Mookerjee, A, "Consumer Behaviour: Building Marketing Strategy", 13thEdition, McGraw Hill, 2020.
3. Schiffman, L., Wisenblit J,& Ramesh Kumar, S, "Consumer Behaviour", 12th Edition, Pearson, India, 2019.

4. Sethna, Z & Blythe, J, "Consumer Behavio"r, 4th Edition, Sage, 2020.
5. Solomon, M, "Consumer Behaviour: Buying, Having and Being", 13th Edition, Pearson, 2020.
6.

21GA03	CUSTOMER RELATIONSHIP MANAGEMENT	3 0 0 3

COURSE OVERVIEW
This course primarily deals with customer relationship strategies that can help firms build a customer centric organization that drives current and future organizational growth. This course enables participants to understand the role of CRM, its significance and process to build as well as manage long term relationship with customers for better value creation and profitability.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand the role & implications of CRM in business		3				
CO2	Design customer journey maps and solve for customer pain or friction points		3		3		
CO3	Analyse customer data and evaluate organization performance on key customer metrics		3		3		
CO4	Ability to measure customer satisfaction using tools.		3		2		
CO5	Understand the role of CRM software in business and explore its features and benefits		3				

UNIT 1: Customer Centricity	9 Hours
CRM – Need for CRM – Benefits of CRM – CRM in the digital age - Customer Centricity – Characteristics of customer centric companies – Developing a customer centric company	
UNIT 2: Customer Experience	**10 Hours**
Customer Lifecycle – Managing Customer Experience in B2B and B2C -Understanding Customer Journey – Customer Journey Mapping – Customer funnel - Managing customer funnel for better customer experience – Customer onboarding – Onboarding process - Personalization vs. Hyper Personalization- Ways to Hyper personalize	
UNIT 3: Customer Analytics	**10 Hours**
Customer Churn – Customer Acquisition Cost – Revenue Churn – Customer life time value – Recency, Frequency and Monetary – Customer Profitability Analysis	
UNIT 4: Customer Satisfaction & Loyalty	**8 Hours**
Net Promoter Score – Customer Happiness Index (CHI) – Customer Effort Score – Customer Loyalty and Measuring customer loyalty – Exploring loyalty and profitability relationship – Analyzing loyalty programs effectiveness - Marketing Automation for better customer engagement and retention	
UNIT 5: Contemporary tools for CRM	**8 Hours**
Sales force automation – Journey Orchestration – Process management - Sales enablement – Performance management – Predictive sales – Omnichannel – Team collaboration	
Total:	45 Hours

Reference Books
1. Francis & Stan MaklanButtle, "Customer Relationship Management: Concepts and Technologies", Routledge, 4th Edition, 2019.
2. Jagdish N Sheth , ParvatiyarAtul, G Shainesh, "Customer Relationship Management : Emerging Concepts Tools & Applications", McGraw Hill, 2017
3. Lars Helgeson, "CRM for Dummies", Wiley Publication, 2017
4. Paul Greenburg, "CRM at the Speed of Light", Tata McGraw Hill, 4th edition, 2017
5. Peter Fader and Sarah Toms, "The Customer Centricity Playbook", The Wharton Press, 2018

21GC04	INBOUND MARKETING	3 0 0 3

COURSE OVERVIEW

The shift in digital technologies brought in a paradigm shift in the way consumers discover, engage and stick with brands. Navigating this world largely driven by digital technologies and disruptions requires a new set of competencies and skills. The course aims to prepare those who aspire a career in digital marketing with relevant knowledge and skill sets in the digital marketing domain.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain Inbound Marketing methodology & draft content marketing plan	2	3		3		
CO2	Distinguish on-page and off page SEO techniques and develop an SEO strategy by applying tools and best practices		3		3		
CO3	Craft a social media marketing campaign and test it effectiveness	2	3		3		
CO4	Develop e-mailers using appropriate tools and techniques	2	3		3		
CO5	Understand and explain influencer marketing strategies		3		2		

UNIT 1: Inbound & Content Marketing	10 Hours
The age of SMAAC and paradigm shifts in Marketing - Inbound Marketing Philosophy- Inbound Vs. Digital Vs. Outbound Marketing - Inbound Marketing Methodology - Inbound Marketing in Practice - CLV - Introduction to Content Marketing - Content Types/Formats - Content Marketing framework - Content Marketing Metrics - Tools for Content Marketing – Effective Blogging	
UNIT 2: Search Engine Optimization	**9 Hours**
Introduction to SEO and SEM - Understanding Google ranking signals or factors and its correlation to search engine rankings - Rank brain and Quality score - Effective SEO techniques for better search results (On page and Off Page optimization) - SEO audit - Tools for conducting SEO audit - Local SEO – Mobile SEO	
UNIT 3: Social Media Marketing & Programmatic ad	**10 Hours**
Introduction to Social Media platforms and its characteristics - Trends - Creating a social media strategy - Measuring social media results - Tools for social media marketing - Basics of Programmatic ads – Native Ads	
UNIT 4: E-mail & Mobile Marketing	**8 Hours**
Email Marketing – Types of e-mails - Creating e-mail marketing strategy - Tools for e-mail Marketing - Measuring e-mail marketing campaigns – Basics of Mobile Marketing	
UNIT 5: Influencer Marketing	**8 Hours**
Influencers - Role of Influencers in Marketing today - Strategies for Identifying and engaging Influencers - Tools for Influencer Marketing - Creating an influencer marketing campaign and measuring the results (metrics)	
	Total: 45 Hours

Reference Books

1. Seema Gupta, "Digital Marketing", McGraw Hill, 2ndEdition, 2020
2. Ryan Deiss& Russ Henneberry, "Digital Marketing for Dummies", Wiley Publication, 2020
3. Simon Kingsnorth, "Digital Marketing Strategy", Kogan Page, 2nd Edition, 2019
4. Brian Halligan&Dharmesh Shah, "Inbound Marketing Revised & Updated", Wiley Publication, 2014
5. Jeremy Kagan &SiddharthShekar Singh, "Digital Marketing Strategy & Tactics", Wiley, 2020

21GC05	INTEGRATED MARKETING COMMUNICATION	3 0 0 3

COURSE OVERVIEW

This course is designed to develop an understanding about the role of communications in the marketing mix. The course covers different types of promotional tools, media and methodologies of integrated marketing communication process. Students will learn an analytical approach to the study of marketing communications including how to integrate all of the marketing communication elements and how this is critical to an organization's success.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Demonstrate a comprehensive understanding of Marketing Communication theories and concepts		3				
CO2	Develop measurable communication objectives and strategies			3			
CO3	Construct creative and media strategies and demonstrate criticality in thinking, analysis and problem-solving				3		
CO4	Plan and execute marketing communications activities for an organization using appropriate tools to suit the communication environment	3	3	3			
CO5	Assess social, ethical and legal issues in marketing communications, evaluate data and present coherent recommendations that inform creative and effective marketing communications decisions.						3

UNIT 1: Marketing Communications - Overview	10 Hours

Understanding IMC - Marketing Process - Decisions for Communication Campaign - Elements of Effective brand communication - Branding and Customer Loyalty - Customer Based brand equity model - AIDA model - Hierarchy of effects - FCB Grid - Structure of Ad Industry

UNIT 2: IMC Planning Process	8 Hours

Communication Objectives and Budgeting - DAGMAR Approach - Consumer information processing and decision making - Creativity and Big idea - positioning statement - creative Brief

UNIT 3:Marketing Communications Management and Design	12 Hours

Message strategy and Execution frame work - copy writing and content creation for print, broadcast and digital media - Design principles - layouts - Art direction and production - Media and Media planning - Media scheduling issues - Reach and frequency - GRP - Rating and share - Efficiency of media vehicle

UNIT 4: Marketing Communication Mix	12 Hours

Broad communication strategies - Sales promotion - Public Relations - Brand publicity - Event sponsorship - Social media and digital marketing options - Mobile engagement - Alternative and non-traditional marketing

UNIT 5: Evaluating Marketing Communications	8 Hours

Economic, social and regulatory aspects in IMC - Plagiarism - Stereotype - STAS impact and measurement - Measuring effectiveness of promotional program - Ad Testing methods - Optimal IMC

	Total:	45 Hours

Reference Books

1. Belch, George E. and Michael A. Belch, "Advertising and Promotion: An Integrated Marketing Communications Perspective", 11th Edition, Tata McGraw-Hill, 2018.
2. Kenneth E. Clow and Donald Baack, "Integrated Advertising, Promotion and Marketing Communications, 8th Edition, Pearson, 2017.
3. Kruti Shah, Alan D'Souza, Advertising and Promotions an IMC perspective, 1st Edition, McGraw-Hill, 2015.
4. Terence A. Shimp, Integrated Marketing Communication in Advertising andpromotion, 10th Edition, Cengage Learning, 2018.

5. Thomas C. O'Guinn, Chris T. Allen, Richard J. Semenik, Advertising Management with Integrated Brand promotion, 8th Edition, Cengage Learning, 2017.

21GC06	MARKETING ANALYTICS	3 0 0 3

COURSE OVERVIEW

The course explores customer data analysis techniques and their theoretical foundations to help students acquire advance analytic skills that can be applied to real world marketing problems. This course enables students to measure, manage and analyse marketing performance to maximize its effectiveness and optimize return on investment (ROI) and how to use marketing analytics to predict outcomes and systematically allocate resources

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Understand and explain key principles, concepts and terms associated with marketing analytics including the Marketing Metrics, web analytics, big data analytics, social media analytics and analytics trends		3				
CO2	Construct a metric identifying the areas to be measured for the individual or corporate and how it makes sense to the business managers.			3			
CO3	Analyse marketing situations using appropriate instruments to formulate marketing strategies and plans, and to evaluate their impact			3			
CO4	Apply the marketing instruments on marketing data to address the marketing strategy with the help of analytics				3		
CO5	Apply the marketing Instruments and quantitative methods providing students with an image of the complexity and pitfalls of typical marketing situations and problems				3		

UNIT 1: Introduction	9 Hours
Introduction to Marketing Analytics - Evolution of Marketing Data and Analytics timeline - Types of Analytics - Marketing Analytics Applications - Summarizing & Reporting Marketing Data using Excel	
UNIT 2:Summarizing Marketing Data	**9 Hours**
Visualizing Marketing Data using Tableau - Visualizations Using Python & R - Understanding the Metrics across marketing domains -Developing Metrics - Flowchart for Metric Creation	
UNIT 3:Marketing Models & Strategies	**9 Hours**
Marketing Models - Marketing Engineering – Segmentation Analytics – Clustering Algorithms - Positioning Analysis - Data Mining applications	
UNIT 4:Marketing Mix Analytics	**9 Hours**
New Product development decisions - Pricing the Product - Forecasting the Sales – Allocating the Retail space & Sales Resource – Consumer Attribution Modelling Methods	
UNIT 5:Marketing Analytics Applications	**9 Hours**
Customer Churn Modelling – Purchase Behaviour Prediction Models- Social Media Listening and Sentimental Analysis – Market Basket Analysis – RFM Analysis – Recommender Systems development	
Total:	**45 Hours**

Reference Books

1. Chris Chapman, "R for Marketing Research and Analytics", Springer Publications, 1stEdition, 2015.
2. Dinesh Kumar U, "Business Analytics", Wiley India, 1stEdition, 2017.
3. Paul W Farris, "Marketing Metrics: The Definitive Guide to Measuring Marketing Performance", Pearson Education, 2nd Edition, 2010.
4. Tanushri Banerjee &Arindham Banerjee, "Business Analytics- Texts and Cases", Sage Publications, 1st Edition, 2019.

5. Wayne L Winston, "Marketing Analytics – Data Driven Techniques with Microsoft Excel", Wiley Publications, 1st Edition, 2015.

21GC07	MARKETING LOGISTICS	3 0 0 3

COURSE OVERVIEW

This course will give special insight into logistics management in marketing domain and groom the students to be an in-demand professional in marketing logistics, able to cope with the consumer centric business challenges of an increasingly globalised world. The conceptual understanding of the marketing logistics process and its significant roles in the business helps them to create optimum business strategies.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Evaluate the strategic role of Logistics in Marketing and Supply Chain Management in offering improved service to the customers.		3				
CO2	Analyse Customer value and customer services and develop market driven logistics strategy	2	3				
CO3	Design comprehensive transportation and containerization strategies			3			
CO4	Distinguish the essentials of warehouse management, Packaging and Packing in marketing logistics				3		
CO5	Applying modern Information Technology in the traditional physical distribution activity to enhance the efficiency					2	3

UNIT 1: Marketing Logistics : An overview	7 Hours

Concepts, Objectives and Importance of Marketing Logistics; Marketing-logistics interface, Key tasks and value chain activities; Strategic insights: delivering and managing CRM roles and outcomes. creating competitive and marketing advantage; Domestic & International Logistics-The marketing challenges; Special Aspects of Export and import logistics: Documentation , Processes and insights

UNIT 2: Creating and Managing Customer Centric Supply Chain and Logistics	9 Hours

Defining customer service & Developing a Market-driven logistics strategy; Value delivery system, Costs of ownership and Customer Profitability management; Cash to cash cycle, lead-time reduction, Value-added time/non-value-added time, Logistics process re-engineering; Mapping internal and external customer satisfaction - Managing risk in the Supply chain; logistics and performance management, Demand-driven supply chains, Mass customisation; building supply chain resilience, 'agile' supply chains; Balancing Functional Objectives, Integration of Systems Functions in national and International supply Chains; Connecting the supply chain through shared information; Quick response logistics, Efficient Consumer Response strategies

UNIT 3:Containerization and Transportation	11 Hours

Containerization -Genesis, Concept, Classification, Benefits and Constraints; Inland Container Depot (ICD): Roles and Functions - Container Freight Station CFS; Export Clearance at ICD; CONCOR; ICDs under CONCOR; Basics of Transportation, Transportation Functionality and Principles; Multimodal Transport; Modal Characteristics, Modal Comparisons; logistical efficiency - International Air Cargo Transport; Coastal and Ocean transportation, Characteristics of shipping transport- Types of Ships- shipping vessels.

UNIT 4: Warehousing, Packaging and Packing	11 Hours

Warehouse Management-Types Warehousing; Customs Formalities- Clearing, Distribution to Units; Distribution and Omni Channel Network Design; Packing and Packaging -Meaning, Functions and Essentials; Packing for Storage- Overseas Shipment-Inland-Transportation- Product content Protection; Packaging - Types: Primary, Secondary and Tertiary- Requirements of Consumer Packaging; Channel Member Packaging and Transport - Packaging - Shrink packaging; Identification codes, bar codes, and electronic data interchange (EDI); Universal Product Code- GS1- Standards- package labels- Symbols used on packages and labels.

UNIT 5: Logistics 4.0 and Challenges for Marketing	7 Hours
Logistics and Technology –Big data, IoT, AI and Blockchain in Logistics and Supply Chain; Technology embedded freight and transport management; Drone and robotic technologies in logistics- Global Information System GIS and Global Positioning System in logistics; Logistics platforms- a Lean approach for designing - Logistic services outsourcing strategy; Last-mile delivery services and Hyper local platforms, Future scope of E logistics management, ICT in multimodal transport and technological trends.	

	Total:	45 Hours

Reference Books

1. Bowersox, Closs, Cooper, "Supply Chain Logistics Management", 5th Edition, McGraw Hill, 2020.
2. John J. Coyle, C. John Langley, Jr., Robert A. Novack, Brian J. Gibson, "Supply Chain Management: A Logistics Perspective", 10th Edition, Cengage Publication, 2017.
3. Martin Christopher, Helen Peck, "Marketing Logistics", 2nd Edition, Routledge Taylor & Francis Groups, 2018.
4. Sunil Chopra, Peter Meindl, "Supply Chain Management", 7th Edition, Pearson Education, India, 2018.
5. Yingli Wang, Stephen Pettit, "E-Logistics: Managing Your Digital Supply Chains for Competitive Advantage",Kogan Page, 2016.

21GC08	RETAIL MANAGEMENT	3 0 0 3

COURSE OVERVIEW

The course provides an in-depth understanding of retailing, an overview of retail environment and exposure to challenging opportunities inherent in managing the industry, which plays a vital role in the economy.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Demonstrate a comprehensive understanding and an in-depth knowledge of Retail Management theories and concepts		3				
CO2	Competent at interpersonal and organizational communication to develop and decide on action plans in the retail domain area	3					
CO3	Construct creative retail strategies and demonstrate criticality in thinking, analysis and problem-solving				3		
CO4	Plan and execute alternative retailing activities for an organization using appropriate tools to suit the environment	3	3	3			
CO5	Develop entrepreneurial skill to start a retailing unit and also be socially responsible					2	2

UNIT 1: The World of Retailing	9 Hours
Introduction to Retail - Functions of a Retailer - Retail in India- Theories and Business Models – Internationalization of Retail – Understanding the Retail Customer - Retail strategy.	
UNIT 2: Store Location	**9 Hours**
Store Site Selection - Choosing a Location - Methods of evaluating a trading area - Retail Franchising - Private Labels - Category Management	
UNIT 3: Merchandise Management	**9 Hours**
Basics of Merchandising - Process of Merchandise Planning- Methods of Procuring - Pricing and Evaluating Merchandise Performance	
UNIT 4: Managing Retail	**9 Hours**
Store Operations – Store Layout and Visual Merchandising – Servicing the Retail Customer	
UNIT 5: Creating and Sustaining Value	**9 Hours**
Retail Marketing and Branding - Retail Management Information Systems – Supply Chain Management	
Total:	**45 Hours**

Reference Books
1. Bajaj C, TuliRajnish, Srivastava NV, " Retail Management", Oxford University Press, New Delhi, 3rd Edition, 2017.
2. Gibson G Vedamani, "Retail Management", Pearson, 5th Edition, 2017.
3. Levy M,WeitzBA, "Retailing Management", Tata McGraw Hill, Delhi, 8th edition, 2016.
4. Pradhan,Swapna, "Retailing Management - Text and cases", Tata McGraw Hill, Delhi. 5th edition, 2018.
5. Sudarshan S, Prasad R, "Retail Management", McGraw Hill, 1st edition, 2016.

21GC09	SALES AND MARKET DEVELOPMENT	3 0 0 3

COURSE OVERVIEW

This course helps the students to develop critical skills for generating, evaluating and selecting sales strategies. This course covers the concepts, attitudes, techniques and approaches required for effective decision making in the areas of Sales and Marketing.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Demonstrate a clear understanding of major sales concepts in writing and orally using proper business communications techniques.	3	3				
CO2	Develop in-depth knowledge of best practices adopted in tender evaluation, solution design, content creation to deliver winning proposals.		3	3			
CO3	Gain key competencies in leading sales team to effectively manage key customer portfolios and seek new opportunities			3			
CO4	Organize sales territories to maximize selling effectiveness.				3		
CO5	Evaluate sales and sales management strategies in relation to current legal and ethical standards of practice.						3

UNIT 1: Fundamentals of Sales Management	9 Hours

Evolution of Sales Management - Nature and types of personal selling - Market development process for developing sales- identify target market, sectors & niches - Market development strategy - Strategic sales planning - Emerging trends in sales Management - Selling Process - Theories of selling - AIDAS - SPIN- Buyer Seller Dyad

UNIT 2:Pre-Sales Process	9 Hours

Understanding Pre-sales process - prospecting - Qualifying - Lead generation - Role of Market research in customer acquisition - Customer solutions - Pre-Sales Requirement Engineering - Business Analysis - Bid management - Proposal and solution development - RFI, RFP, RFQ - Key Account Management - Customer retention through CRM

UNIT 3:Sales Force Management	9 Hours

Sales Organization structure - Recruitment and selection of sales personnel - Job Analysis - Sales Training - Motivating Sales personnel - Sales compensation Plan - Sales contests - Sales presentations - Sales pitch - Negotiations skills - Closing the sale

UNIT 4:Formulating Sales Strategy	9 Hours

Sales forecasting approaches - Forecasting methods - Sales Budget - Sales Territory - Territory design - Control unit - Managing Territorial coverage - Territorial Sales potential - Goal setting process - Administration of Sales Quotas - Information technology role in sales

UNIT 5: Assessing Sales Program	9 Hours

Sales force expenses - Sales Audit - Evaluating and controlling sales people - Sales Analysis- Sales force Automation Ecosystem - Business ethics and Sales management - Social and Legal Responsibilities

	Total:	45 Hours

Reference Books

1. Charles.M.Futurell, "Fundamentals of selling: Customers for life through service" 12th Edition, McGraw Hill, 2017.
2. David Jobber and Geoffrey Lancaster, "Selling and Sales Management", 10th Edition, Pearson, 2018.
3. Krishna K Havaldar, Vasant M Cavale, "Sales and Distribution Management", 3rd Edition, McGraw Hill, 2019.
4. Richard R. Still, Edward W, Norman Govoni, Sandeep Puri, "Sales and Distribution Management", 6th Edition, Pearson, 2018.
5. Spiro, Stanton and Rich, "Management of Sales Force", 12th Edition, Tata McGraw Hill, 2015.

21GC10	SERVICES MARKETING	3 0 0 3

COURSE OVERVIEW

The objective of this course is to supplement basic marketing and marketing strategy courses by focusing on problems and strategies specific to marketing of services. Focus on strategic and managerial issues specific to marketing service products in industries with high service components.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Appreciate the marketing challenges for service businesses, their similarity and differences from goods/manufacturing businesses.		3				
CO2	Integrate the process and develop strategies and designs to build competitive advantage by evaluating the customer experience - service quality matrix of an organization.			3			
CO3	Critically analyse the 7Ps of the services marketing mix and their implications on the brand				3		
CO4	Evaluate the effectiveness and efficiency of customer service offerings and design service quality measurements to build customer loyalty				3		
CO5	Evaluate the influences of the multicultural marketplace, business ethics, and socially responsible marketing in the context of services marketing.						3

UNIT 1: Introduction to Services Marketing	9 Hours
Introduction, Why Study Services Marketing Management? The Service System, Characteristics of Services, Understanding the Macro-Environment and the challenges posed for services.	
UNIT 2: Services Marketing Strategy	9 Hours
Understanding the Micro-Environment, Services Marketing Process, Services Marketing Research, Exploring Marketing Opportunities, New Service Development, Segmenting the Market, Targeting and Positioning, Understanding ,Consumer Behaviour	
UNIT 3:Services Marketing Mix	9Hours
The Service-Product continuum, Managing Service Delivery Channels, Managing Channel Conflict, Managing Integrated Marketing Communications, Pricing the Service,	
UNIT 4:Services Marketing Mix	9 Hours
Managing Customers, Educating Customers , Designing the Service Process , Designing the Physical Evidence, Managing People	
UNIT 5: Service Quality & Applications	9 Hours
Developing Service Personnel, , Managing Service Quality - Managing Service Recovery, Providing Service Guarantees, Consumer Protection, Managing Demand and Capacity, Case Studies	
	Total: 45 Hours

Reference Books

1. Christopher Lovelock, JochenWirtz, Jayanta Chatterjee, "Services Marketing – People, Technology, Strategy", Pearson Publications,7thEdition, 2016.
2. Helen Woodrfuff, "Services Marketing", Himalayan Publishing House,2017.
3. Jeff Toister,"The Service Culture Handbook: A Step-by-Step Guide to Getting Your Employees Obsessed with Customer Service", AMACOM, 2016.
4. Roland Rust, "Services Marketing", Macmillan Limited, 2016.
5. Zeithaml, V.A., Bitner, M.J., Gremler, D.D, "Services Marketing: Integrating Customer Focus Across the Firm", McGraw-Hill Education, 7thEdition, 2018.

DECISION SCIENCES ELECTIVES

21GD01	DESIGN THINKING	3 0 0 3

COURSE OVERVIEW

This course introduces students to design thinking as a systematic process of resolving business and/or social problems

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain the fundamental concepts and principles of design thinking		3	3		3	
CO2	Develop business hypotheses		3	3		3	
CO3	Execute the steps for concept development		3	3		3	
CO4	Design prototypes and test		3	3		3	
CO5	Use design thinking to create competitive advantage		3	3		3	

UNIT 1: Introduction to Design Thinking	**9 Hours**

Types of thinking – Analytical, Intuitive, Deduction, Induction, Abduction; Definitions of Design Thinking, Principles and elements of Design Thinking, Human centric approach

UNIT 2: Design Thinking Process – Stage 1	**9 Hours**

Understanding the business hypothesis, customer perspective, inspiration, visualization through storyboarding etc.

UNIT 3: Design Thinking Process – Stage 2, 3	**9 Hours**

Defining the problem, Data Collection, Observation techniques, gaining insights, Ideation, concept development

UNIT 4: Design Thinking Process – Stage 4, 5	**9 Hours**

Experimentation, prototyping principles, Prototyping, Testing, Assumptions Identification

UNIT 5: Design Thinking for Innovation	**9 Hours**

Design Thinking in organizations, how to diffuse DT into work culture, Using DT to innovate in business, Disruptive innovation

	Total:	**45 Hours**

Reference Books
1. Jimmy Jain, "Design Thinking for Startups: A Handbook for Readers and Workbook for Practitioners", 1st Edition, Notion Press, 2018.
2. Kelley, Tom, and Littman, Jonathan, "The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm", Profile Books Ltd, 2016.
3. Lewrick. Link, Liefer, "The Design Thinking Toolbox: A Guide to Mastering the Most Popular and Valuable Innovation Methods", Wiley, 1st Edition, 2020.
4. Roterberg, "Design Thinking for Dummies, For Dummies", 1 Edition, John Wiley & Sons Inc (US), 2020.
5. Tim Brown, "Change by Design, Revised and Updated: How Design Thinking Transforms Organizations and Inspires Innovation", Harper Business, 5th Edition, 2019.

21GD02	INDUSTRIAL MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course inculcates the skills needed by senior level executives to design, plan, run and control organizations of any size and field.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain and formulate objectives and policies for a firm	2	3				3
CO2	Identify zones and forms of an organization and design an organization	2	3		3		
CO3	Explain the framework for control in an organization and explain the basic controls required for inventory, production, quality and personnel			3	3		
CO4	Explain and formulate the framework for cash flow control in an organization					2	3
CO5	Explain and apply the principles of good operations to an organization and to identify the best practises to building an organization			2	2	3	

UNIT 1: Purpose, Policy, Procedures	9 Hours
Sarasohn framework – Organization purpose, creating a purpose statement; Policies: types of policies- administrative & Management, principles of policies, components of a policy – procedures – creating a policy policy vs strategy	
UNIT 2: OrganizationZones, Forms and Departments	**9 Hours**
Zones of organization – function, authority, responsibility and accountability; Different forms of an organization – Line, Functional, Line and staff – line to staff continuum – advantages and disadvantages of different forms of organizations; Departments of an organization – functions and responsibilities – organization chart; Construction of an organization – principles, span of control decision, manpower estimation, control specification	
UNIT 3: OrganizationalControl Basics	**9 Hours**
Need for organizational control – Man control vs fact control; Prerequisites of control, phases of control, application of control; Production control, personnel control, quality control	
UNIT 4: Controlling Cash Flows	**9 Hours**
Four bucket cash flow framework – creating 4 bucket cash flow from raw cash flows and balance sheets – judging cash flow position of a firm; Cash flow control framework – what to control: Stock control, Expense control, debtor control; CRE analysis of expenses	
UNIT 5: Building for Future	**9 Hours**
Operations – Four principles, decisions to make; Building for the future – Programmed management; Keys for success – leadership, teamwork, communication	
Total:	**45 Hours**

Reference Books

1. Khanna O P, "Industrial Engineering and Management", DhanpatRai Publications, 2018.
2. GavrielSalvendy, "Handbook of Industrial Engineering: Technology and Operations Management", 3rdEdition, Wiley, 2001.
3. Homar M. Sarasohn, Charles A. Protzman, "The fundamentals of Industrial Management: CCS Management Course", McGraw-Hill, 1998.
4. Kjell B. Zandin, "Maynard's Industrial Engineering Handbook", 5th Edition, McGraw-Hill, 2001.
5. Zindani.D and Kumar K, "Industrial Engineering and Management", Dreamtech press, 2020.

21GD03	NEW PRODUCT DEVELOPMENT	3 0 0 3

COURSE OVERVIEW

New product development is an interdisciplinary course that deals with the various steps involved with designing, developing and launching a successful product in the business world

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain why and where new product development is to take place		3	3	2	2	
CO2	Explain and apply the planning process involved in generating product specifications		3	3	2	2	
CO3	Explain and apply the concept generation and testing process		3	3	2		
CO4	Explain and apply the principles of industrial and environmental design		3	3	2		
CO5	Explain the principles of design for manufacturing and supply chain		3	3	2		

UNIT 1: Introduction, Development Process and Opportunity Identification	9 Hours
New product development-characteristics of a successful product, design job, duration and cost of new product development, challenges of new product development; Product development process and organization – concept development – adapting generic product development process – product development process flows - product development organization; Identifying opportunities – six steps of identification; Management commitment – Review process: Status review, near end review	

UNIT 2: Product Planning, Need Identification, Product Specification	9 Hours
Product planning – Identify opportunities – Prioritise and evaluate projects – Resource allocation and timing – complete pre project planning – reflection on results and process; Customer need identification – raw data gathering – interpreting data – organize needs – prioritise needs – results & process audit; Product specifications – what and when – target specifications – final specifications	

UNIT 3: Concept Generation, Selection and Testing	9 Hours
Concept generation – problem clarification – external search – internal search – systematic exploration; Concept selection – concept screening, six steps – concept scoring, six steps; Concept testing – seven steps	

UNIT 4: Product Architecture and Design for Industry and Environment	9 Hours
Product architecture – modularity – implications – establishing architecture – platform planning – system level design issues; Industrial design – meaning, need – assessing need, impact – industrial design process – quality assessment Design for environment – Meaning, need, – DFE process	

UNIT 5: Design for Manufacturing & Supply Chain, Prototyping and Robustness	9 Hours
Design for manufacturing and supply chain – Meaning, need, requirements – seven steps; Prototyping – meaning, need, principles, technologies, planning; Robust Design – Meaning, need, seven step robustness process; Patents and intellectual property – meaning, need 7 step process	
Total:	**45 Hours**

Reference Books

1. Crawford, "New Products Management", McGraw Hill, 11thEdition, 2020.
2. Fradin, "Successful Product Design and Management Toolkit", Wiley, 2019.
3. Lawley, Shure, "Product management for dummies", Wiley, 2017.
4. Olsen, (2015), "The Lean Product Playbook: How to Innovate with Minimum Viable Products and Rapid Customer Feedback", Wiley, 1st Edition, 2015.
5. Ulrich, Eppinger and Yang, "Product Design and Development", McGraw Hill, 7thEdition, 2020

21GD04	OPERATIONS MODELLING AND SIMULATION	3 0 0 3

COURSE OVERVIEW

Real time projects requires more cost, effort and time to implement and test, depending on complexity and sensitivity. Simulation reduces these problems. This course explains how simulation process can help in excelling business operations by studying the real world processes and modelling them.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain the concept of simulation and be able to give the steps in simulation sequentially		3				
CO2	Apply statistical tools and simulation techniques in cross functional environment			3			
CO3	Analyse supply chain decision making using probability		2		2		
CO4	Model and optimize the business systems using advanced simulation software for decision making				3		
CO5	Develop alternative models among waiting line in a service system and make decisions based on the statistical comparisons				3		

UNIT 1: Process and Simulation	9 Hours

Business Process- Constituents of a process- Basic tools for process design- Introduction to Simulation- Steps in a Simulation Study - Scope of simulation in operations management.

UNIT 2: Monte-Carlo Simulation Technique	9 Hours

Discrete event simulation – Random number tables- Random number generation – Testing of randomness by Wald-Walfowitz run test- Manual problems in Service, Quality-Control chart –Project management – General applications.

UNIT 3: Application of Probability Distribution In Simulation	9 Hours

Histogram-Uniform, Normal and Exponential distribution modelling- Test of Normality – Goodness of fit – Kolmogorov Smirnov test -Supply chain– Outbound and Inbound logistics - Spreadsheet solutions

UNIT 4: Simulation of Inventory Management Problems	9 Hours

 Periodic Review model-Continuous review model- Base stock policy – Software applications**.**

UNIT 5: Assessing the Alternative Models	9 Hours

Manufacturing process strategies-Waiting line (QUEUING) model strategies- Software application - Statistical hypothesis techniques - Analysis of Variance Technique – Optimization within simulation

	Total:	45 Hours

Reference Books

1. Bandyopadhyay, S., & Bhattacharya, R, "Discrete and Continuous Simulation: Theory and Practice", CRC Press, 2014.
2. David Hartvigsen, "Simquick: Process Simulation with Excel", Prentice Hall,2nd Edition, 2008.
3. Greasley, A, "Simulation Modelling for Business", Routledge, 2017.
4. Jerry Banks, John S. Carson II, Barry L. Nelson and David M. Nicol, "Discrete-Event System Simulation", Pearson Education, 2011.
5. Rubinstein, R. Y., &Kroese, D. P, "Simulation and the Monte Carlo method", 10th Edition, John Wiley & Sons, 2016.

21GD05	PROJECT MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course enables students to understand the fundamental project management concepts, tools and techniques needed to successfully plan, lead, and run projects in a structured manner.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO 1	Describe the project management framework and evaluate the organizational structure type		3				
CO 2	Assess the requirements and integrate all the business functional areas				3		
CO 3	Prepare scheduling of a project and estimate cost of a project		3				
CO 4	Relate and assess the impact of various cross functional areas such as quality, HR and communication in projects			3			
CO 5	Relate and assess the impact of various cross functional areas such as risk management, procurement and managing stakeholder's expectations in projects			3			

UNIT 1 : Project Management Framework	9 Hours
Project Management - Program Management - Portfolio Management -Organizational Structures - Project Life Cycle	
UNIT 2 : Integration Management	**9 Hours**
Charter - PM Plan - Change Control - Scope Management - Collect Requirements Project Scope – WBS - Validate and Control Scope	
UNIT 3 : Estimating Time and Cost	**9 Hours**
Activities – Schedule - Estimation of Resources and Estimate Duration – PERT – CPM - Estimate Cost - Determine Budget and Control Cost - Earned Value Management	
UNIT 4 : Manage Quality, Human Resource and Communication	**9 Hours**
Quality Management – Assurance - Quality Control, HR Management – Plan – Acquire – Develop - Manage HR - Communication Management	
UNIT 5 : Manage Risk, Procurement and Stakeholders	**9 Hours**
Risk Management- Identification of Risk, Quantitative and Qualitative Risk Analysis - Risk Response Procurement Management – Plan Conduct, Control and Close- Managing Stake Holders Expectations	
	Total: 45 Hours

Reference Books

1. Andrew Stellman, "Head First PMP", Shroff Publishers, 4th Edition, 2018.
2. Kim Heldman, "PMP: Project Management Professional Exam Study Guide", Wiley, 7th Edition, 2013.
3. Project Management Institute,"A Guide to the Project Management Body of Knowledge", PMI, 6th Edition, 2018.
4. Rita Mulcahy, "PMP Exam Prep: Rita's Course in a Book for Passing the PMP Exam", RMC Publications Inc., 9th Edition, 2018.
5. Vidya Subramanian, "PMP Certification Mathematics", McGraw Hill Education, 2010.

21GD06	SUPPLY CHAIN MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course helps students to identify, understand and handle various supply chain related decisions and responsibilities in both design and operations related activities

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Identify and explain the various flows in a supply chain and measure supply chain performance		3	3	3		
CO2	Explain the different kinds of products and decide supply chain fit, decide on make or buy situations and identify issues related to material flows in a supply chain		3	3	3		
CO3	Explain the issues related to transportation, network design and placing of various facilities and stock points		3	3	3		
CO4	Explain the various information and information technology related issues in managing a supply chain		3	3	3		
CO5	Understand, explain apply principles of supply chain integration and supply chain restructuring		3	3	3		

UNIT 1: Introduction and Strategic View to Supply Chains	9 hours

Evolution of supply chain-Concepts in supply chain – Importance of supply chain – Enablers of supply chain performance – Supply chain performance in India; Customer service vs cost tradeoffs, SCM performance measures: SCOR model, financial data based measures: Supply chain length, supply chain inefficiency, supply chain working capital productivity

UNIT 2: Supply Chain Configuration	9 hours

Make vs buy decision – Functional vs innovative product – Efficient vs responsive supply chain; Two approaches to outsourcing – Focal firm vs hollow firm; Market vs hierarchy, sourcing strategy

UNIT 3: Managing Material Flows in Supply Chain	9 hours

Inventory Management – Types of inventory, inventory costs, managing different kinds of stock; Transportation – Drivers of decision, modes of transport, strategies of distribution; Network Design – Network optimization, restructuring

UNIT 4: Managing Information Flows in a Supply Chain	9 hours

Demand forecasting – role of forecasting, forecasting methods, forecasting errors, bull whip effect; Information technology – information requirement, four kinds of functions of IT, impact of information on inventory

UNIT 5: Supply Chain Innovations	9 hours

Supply chain integration – internal and external, impact, enablers; Supply chain restructuring – process restructuring, flow restructuring, inventory placement restructuring; Agile supply chains – High demand uncertainty, five disruptions, dual forecasting, disruption handling; Pricing and revenue management – multiple customer segment pricing, service level determination, limited capacity situations, pricing under capacity constraints

	Total:	45 Hours

Reference Books

1. Bowersox, Closs, Cooper, "Supply Chain Logistics management", McGraw Hill, 4[th]Edition, 2018.
2. Chopra, Meindl, Kalra, "Supply Chain Management", Pearson Education, 7[th]Edition, 2018.
3. Coyle, Langley, Novack, Gibson, "Supply Chain management: A Logistics Perspective", Cengage India Pvt Ltd, 10[th]Edition, 2019.
4. Janat Shah, "Supply Chain Management: Text and Cases", Pearson Education, 2nd Edition, 2016.
5. Simchi Levi D, Simchi Levi E, Ravishankar, "Designing and Managing the Supply Chain", McGraw Hill, 3[rd]Edition, 2019.

21GD07	TECHNOLOGY MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course makes the students understand the importance of technology in business, evolve the new framework for aligning the business activities with technology and execute the same in an organization.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Identify the technology requirements of business activities		3				
CO2	Select the suitable technology for a business		3				
CO3	Recognize and integrate the emerging technological advancements to business		3	3			
CO4	Design the new technology based framework for the centralization of all business activities				3		
CO5	Evaluate the organizational performance after technology adoption	3				2	3

UNIT 1: Technology and its Importance in Business	9 Hours

Definition – Features – Importance – Benefits – Achieving competitive advantage through technology – Types of technologies – Technology portfolio – Technology life cycle – Technology as an investment

UNIT 2: Management of Technology	9 Hours

Overview - Objectives of MOT - Strategic Management of Technology (SMOT) - Exploitation of Technology - Principles of MOT - The role of R&D in an organization - New product development process

UNIT 3: Technology Forecasting	9 Hours

Methods of forecasting technology - Technology obsolescence - Technology discontinuity - Technology audit - Technology scouting

UNIT 4: Absorption and Diffusion of Technology	9 Hours

Technology Transfer - Technology Evaluation - Technology Absorption - Technology Adoption - Technology Diffusion - Technology Cycles - Technology Commercialization - Business Strategy And Technology Strategy - Strategy And Strategic Management - Technology Strategy - Linking Business And Technology Strategy

Unit 5: Organizational Structure, Organizational Learning and Leadership	9 Hours

Human resource for managing technology - The importance of organizational structure - The structure of an innovative organization - The role of a leader in an innovative organization - Risks and uncertainties associated with technology

	Total:	45 Hours

Reference Books

1. DilakCentindamar, Rob Phaal, David Probert, "Technology Management: Activities and tools", Palgrave Macmillan, 2016.
2. Joseph j.Bambara, "Block Chain: A Practical Guide to developing Business, Law and Technology Solutions", McGraw Hill, 2021
3. Ravi Shanker, TarekKhalil,"Management of Technology , A key to competitiveness and wealth creation", 2nd Edition, McGraw Hill Education, 2017
4. ShankerDubey, Sanjiva"A brief Course on Technology Management", 2nd Edition, Eastern Economy Edition, 2019
5. VijaykumarKhurana and Anil K.Saini, "Management of Technology and Innovation",2nd Edition, Ane Books, 2017.

21GD08	THEORY OF CONSTRAINTS	3 0 0 3

COURSE OVERVIEW

This course familiarizes the students with the thought and application of constraint analysis and handle unexpected changes in operations. It provides techniques for improving throughput, reducing backlogs and process lead times in operations.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Think critically to identity the goal, what to change, and how to cause the improvement				3		
CO2	Decide the course of action with financial information to achieve primary insight of an entrepreneur				3	2	
CO3	Simplify the task complexities by identifying the core constraint in the manufacturing process			3			
CO4	Use the skill and knowledge to monitor and execute a responsive supply chain		3				
CO5	Use the skill to monitor and execute a project towards completion due date		3				

UNIT 1: Thinking TOC Way	9 Hours
Theory of constraints – Philosophies-Goal of an organization-Appreciation of variability and dependency. TOC mindset-Pillars -Thinking process-Logically and clearly-Six layers of resistance to change- Goal tree-Strategic tree-Current Reality Tree, Evaporating cloud, Future Reality Tree-Prerequisite trees - Mafia marketing offers	

UNIT 2: Throughput Accounting	9 Hours
Weighing the decision making by money - TOC Measurements on Productivity-Throughput, Operating Expenses, Inventory – Problems on identification of the same from the financial transactions-Difference between TA -Cost accounting-Lean accounting-Cost world vs throughput world- Decision making based on exposed capacity. Throughput-margin per unit –T per time unit in factory hours.	

UNIT 3: TOC Production	9 Hours
Five focusing steps- Type of Constraints. Identifying the physical constraint. Production planning – Drum buffer rope (DBR) method. Drum buffer and shipping buffer-TOC classification of manufacturing plants.	

UNIT 4: TOC Supply Chain Management	9 Hours
Replenishment policy – Addressing the uncertainty -Dynamic buffer management **-** Aggregation -Responsive supply chain	

UNIT 5: TOC Project Management	9 Hours
Assumptions on Project management – Critical chain project management – Planning and Execution- Buffers – Fever chart - Throughput Dollar days and Investment Dollar days	
Total:	**45 Hours**

Reference Books

1. Bragg, S. M., "Throughput Accounting: A Guide to Constraint Management", John Wiley & Sons, 2012.
2. Corbett, T., "Throughput Accounting: TOC's Management Accounting System", Great Barrington: North river press, 1998.
3. Dettmer, H. W., "The Logical Thinking Process. A Systems Approach to Complex Problem Solving", American Society for Quality, 2007.
4. Goldratt, E. M., "The Goal", Productivity Press India Ltd, 2002.
5. Sekkizhar J, "Throughput accounting: Numerical solutions from Theory of Constraints", KiDP publishing, 2020.

21GD09	TOTAL PRODUCTIVE MAINTENANCE AND LEAN MANAGEMENT	3 0 0 3

COURSE OVERVIEW

The TPM and Lean Management course offers a practical introduction to lean management principles, tools and techniques. The course is designed to assist the student to implement lean in any business environment to improve productivity and to reduce waste.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO 1	Develop critical thinking to identify and solve key issues relating to lean management		3				
CO 2	Apply 5S, value stream mapping / video analysis in manufacturing and service industry		3				
CO 3	Apply key business practices of lean management philosophy in cross functional environment			3			
CO 4	Demonstrate the implementation of total productive maintenance tools in manufacturing and service industry			3			
CO 5	Prepare and execute action plans using problem solving tools				3		

UNIT 1 : Lean Introduction	9 Hours
Introduction – Background - Lean Thinking - Rules of Gemba, 3M - Seven Wastes - VA and NVA - Principles of Flow - Learning to See	
UNIT 2 : Lean Management Core Concepts	9 Hours
5S Implementation Procedure - Layout Modification - Value Stream Mapping - Video Analysis	
UNIT 3 : Lean Tools and Methodologies	9 Hours
Mistake Proofing - Quick Changeover - Kanban - Inventory Management - Visual Management - Kaizen - A3 - Single Piece Flow vs Batch Production - TAKT/Cycle Time - Balancing the Line	
UNIT 4 : Total Productive Maintenance	9 Hours
Introduction to TPM Concept - Objectives and Functions - Developing the TPM Implementation Plan - Pillars of TPM - TPM organization	
UNIT 5 : Scientific Problem Solving	9 Hours
Scientific problem solving - PDCA Cycle - SDCA Cycle, Human and Method Problems - TWI – Introduction - Job Instruction - Job Relations - Job Methods - TWI and Flow - Follow up Initiatives	
	Total: 45 Hours

Reference Books

1. James P. Womack and Daniel T. Jones, "Lean Thinking: Banish Waste and Create Wealth in Your Corporation", Free Press, 2015.
2. Jeffrey Liker and David Meier, "The Toyota Way Fieldbook", Tata McGraw Hill, 2005.
3. Jeffrey Liker and David Meier, "Toyota Talent: Developing Your People the Toyota Way", Tata McGraw Hill, 2007.
4. Masaaki Imai, "Gemba Kaizen: A Commonsense Approach to a Continuous Improvement Strategy", Tata McGraw Hill, 2012.
5. Mike Rother, "Toyota Kata: Managing People for Improvement, Adaptiveness and Superior Results", Tata McGraw Hill, 2009.
6. Pascal Dennis, "Lean Production Simplified: A Plain-Language Guide to the World's Most Powerful Production System", Productivity Press, 3rd Edition, 2015

21GD10	TOTAL QUALITY MANAGEMENT	3 0 0 3

COURSE OVERVIEW

The purpose of this course is to develop hands-on knowledge and skills that are required to manage and implement any improvement projects, whether in manufacturing, service or any other opportunities. It enable students to understand quality principles and philosophies, quality tools and techniques and apply them in practice.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO 1	Describe the contribution of quality gurus and explain the concept of Total Quality Management	3					
CO 2	Explain the various ISO principles and quality awards towards effective quality management practices		3				
CO 3	Apply quality control techniques using appropriate tools			3			
CO 4	Assess quality control tools, management tools and apply in a business case				3		
CO 5	Evaluate and implement appropriate quality improvement tools and techniques in a business environment		3				

UNIT 1 : Introduction to Quality Management	9 Hours

Quality Definition - Quality Gurus and their Principles - Deming, Juran and Crosby - Total Quality Management - Importance of Quality Efforts - Quality Maturity - Service Quality

UNIT 2 : Quality Planning	9 Hours

Quality Policy - Quality Organization - ISO 9000 Principles and Documents - ISO Certification Process - Extended ISO Certification - Quality Awards

UNIT 3 : Quality Control Tools-Design	9 Hours

Quality Function Deployment - Failure Mode Effect Analysis - Design for Six Sigma

UNIT 4 : Quality Control Tools, Process and Acceptance Sampling	9 Hours

7 Tools of Quality Control - 7 Quality Management Tools - Acceptance Sampling for Variables and Attributes

UNIT 5 : Quality Improvement Tools	9 Hours

Kaizen Principles – PDCA - 5S – TPM - Six Sigma Organization and Process

	Total:	45 Hours

Reference Books
1. Besterfield et al, "Total Quality Management", Pearson Education, 5th Edition, 2018.
2. Joseph M. Juran, "Juran's Quality Handbook", McGraw Hill, 5th Edition, 1998.
3. Poornima M Charantimath, "Total Quality Management", Pearson Education, 3rd Edition, 2017.
4. Stacy Escobar, "Total Quality Management and Six SIGMA", Clanrye International, Illustrated Edition, 2015.
5. Sunil Sharma, "Total Quality Management: Concepts, Strategy and Implementation for Operational Excellence", SAGE Publications Pvt. Ltd, 1st Edition, 2018.

21GE01	E-BUSINESS MODELS	3 0 0 3

COURSE OVERVIEW

The main objective of this course is to assist students in developing knowledge and skills for managing information systems that support e-business and provide an overview of processes and management decisions that are involved in launching, operating and managing business activity on the World Wide Web.

CO #	CO-PO MAPPING At the end of the course, the students should be able to	PO1	PO2	PO3	PO4	PO5	PO6
CO1	Understand and explain the business practices of e-commerce and e-business models		3				
CO2	Estimate the e-commerce infrastructure requirements for the conduct of e-business		3	2			
CO3	Analyse the security issues while making payments online			3	2		
CO4	Describe the legal issues and laws governing e-commerce						3
CO5	Explain online retailing and the relationship between e-commerce and supply chain management			2	3		

UNIT 1 : Introduction to E-Business Models	9 Hours
Overview of E-Business - Information Services - Interpersonal Communication - Shopping Services - Virtual Enterprises - B2C - B2B - C2C - P2P – M-commerce - Business Models in Emerging E-commerce areas	
UNIT 2 : E-Commerce Infrastructure	**9 Hours**
Internet Environment for E-Commerce - Providers and Vendors of E-Business Software - E-Business Enabling Technologies - Intranet and Extranet for E-Commerce - Identification and Tracking Tools for E-Commerce - Overview of Internet Bandwidth and Technology Issues - Electronic Data Interchange (EDI) to E-Commerce - EDI - UN/EDIFACT Standard	
UNIT 3 : Payment and Security	**9 Hours**
E-commerce Security Environment - Security Threats - Technology Solutions - Encryption Methods - Policies and Laws - Credit Card Transactions - B2C Digital Payment Systems - B2B Payment Systems	
UNIT 4 : Legal Issues	**9 Hours**
Paper Document vs Electronic Document - Legal Issues for Internet Commerce- Technology for Authenticating Electronic Document - Laws for E- Commerce in India - EDI Interchange Agreement	
UNIT 5 : Retailing and Supply Chain	**9 Hours**
Online Retail Industry Dynamics - Online Mercantile Models from Customer Perspective - Management Challenges in Online Retailing - Online Publishing Approach from Customer Perspective - Supply Chain Management Fundamentals - Intranets and Supply Chain Management - Managing Retail Supply Chains - Supply Chain Application Software	
Total:	**45 Hours**

Reference Books

1. David Whiteley, "E-Commerce: Strategy, Technologies and Applications", Indian Edition, McGraw Hill Publications, 2017.
2. Jelassi, Tawfik, Martínez-López, Francisco J, "Strategies for e-Business - Concepts and Cases on Value Creation and Digital Business Transformation", Springer Publications, 2020.
3. Joseph P T, "E-Commerce: An Indian Perspective", PHI Publications, 5th Edition, 2015.
4. Kenneth C Laudon and Carol GuercioTraver, "E-Commerce – Business, Technology, Society", Pearson Publication, 15th Edition, 2019.
5. UrmiDatta & NehaSomani, "E-commerce and Business Communication", Oxford University Press, 1st Edition, 2017.

21GE02	INFORMATION SECURITY MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course introduces the requirements of information security in the digital arena. It explains the management view of information security, the necessity of security and risk management during information systems development. The course highlights on the laws and regulations to be enforced for security management.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the basic concepts in telecommunications and network security		3				
CO2	Analyse the issues in security governance and risk management		3				
CO3	Prepare a security plan for software development				3		
CO4	Design and evaluate a security architecture using cryptography			3			
CO5	Understand and explain the laws and legal regulations governing data storage and security						3

UNIT 1: Network Security	9 Hours
Telecommunications and Network Security – Securing the Grid – Attacks in Mobile Environments	
UNIT 2: Security Governance	**9 Hours**
Information Security Governance and Risk Management – Security in the Cloud – Digital Rights Management – Policies, Standards, Procedures and Guidelines – Security Awareness Training	
UNIT 3: Security in Software Applications	**9 Hours**
Application Development Security – Application Issues – Systems Development Controls – Security in the Software Development Life Cycle	
UNIT 4: Cryptography	**9 Hours**
Cryptography Concepts, Methodologies and Practices – Cloud Cryptography – Security Architecture and Design – Security Models, Architectures and Evaluation Criteria – Identity and Access Management Architecture	
UNIT 5: Data Storage Security	**9 Hours**
Data Storage and Network Security – Legal Regulations – Information Law – Investigations – Major Categories of Computer Crime – Compliance	
Total:	**45 Hours**

Reference Books

1. Abhishek Chopra, Mukund Chaudhary, "Implementing an Information Security Management System - Security Management Based on ISO 27001 Guidelines", Apress Publications, 2020.
2. Henry Dalziel, (2015), "Infosec Management Fundamentals", Elsevier Publications, 2015.
3. HeruSusanto, Mohammad Nabil Almunawar, (2018), "Information Security Management Systems - A Novel Framework and Software as a Tool for Compliance with Information Security Standard", Apple Academic Press, 2018.
4. Thomas R.Peltier, (2017), "Information Security Fundamentals", 2ndEdition, Auerbach Publications, 2017.
5. Tony Campbell, "Practical Information Security Management - A Complete Guide to Planning and Implementation", Apress Publications, 2016.

21GE03	MATERIALS MANAGEMENT	3 0 0 3

COURSE OVERVIEW

This course aims to provide knowledge about effective and efficient purchase, sales, different inventory policies and models, effective and efficient stores management, goods and invoice receipts. It also gives opportunity to students to understand the entire process and execute the same using an ERP software.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the concepts of Enterprise Resource Planning		3				
CO2	Analyse the prerequisites for Sales and Distribution		3				
CO3	Demonstrate the Order to Cash business process using ERP software			3	2		
CO4	Analyse the prerequisites and master data creation for Materials Management		3				
CO5	Demonstrate the Purchase to Pay business processing using ERP software			3	2		

UNIT 1: Introduction	9 Hours
Enterprise Resource Planning – Need for an ERP – Benefits from an ERP system – ERP and Enterprise Applications – Introduction to SAP S/4HANA, The Intelligent Enterprise – Organizational, Master and Transaction Data Type – Introduction to SAP S/4HANA Navigation	
UNIT 2:SD Prerequisites	**8 Hours**
Introduction to Sales and Distribution - Evolution – Importance – Score and Objectives – Interface with other functions necessities – Organizational Structure – Customer – Material – Condition Master - Output	
UNIT 3:Order to Cash	**10 Hours**
Order to Cash - Pre-sales Activity – Inquiry – Quotation – Sales Order – Delivery Scheduling (Backward and Forward) – Shipping & Routing Determination – Availability Check – Pricing – Credit Check – Shipping & Transportation – Delivery Creation – Delivery Document – Picking, Loading and Packing – Goods Issue – Billing – Billing Documents and Methods – Payment – Document Flow – Process Debugging	
UNIT 4:MM Prerequisites	**8 Hours**
Materials Management – Evolution – Importance – Score and Objectives – Interface with other functions necessities – Organizational Structure - Material – Vendor – Purchasing Scenarios -MM Master Data Creation – Vendor Master Data – Material Master – Purchasing Information Record	
UNIT 5:PurchasetoPay	**10 Hours**
Procure to Pay Process – Purchase Requisition – Requisition Sourcing – Internal Sourcing – Source List - Outline Agreement - Request for Quotation – Quotation from Vendor – Evaluate Quotations – Vendor Evaluations - Create Purchase Order Referencing an RFQ – Purchase Order Structure and Output - Goods Receipt - Material Movements – Effects of Good Receipt - Invoice Processing – Payment to Vendor – Goods Receipt/Invoice Receipt/Recon Account – Finance & Procurement Integration - Purchase Order History	
	Total: **45 Hours**

Reference Books

1. Christian van Helfterren, "Sales with SAP S/4HANA: Business Process and configuration", 1st Edition, SAP Press, 2019.
2. Glynn Williams, "Implementing SAP ERP Sales & Distribution", 1st Edition, McGraw Hill Education (India) Private Limited, 2017.
3. Jawad Akhtar and Martin Murray, "Materials Management with SAP S4/HANA", 2nd Edition, SAP Press, 2020.
4. Krishna K Havaldar and Vasant M Cavalw, "Sales and Distribution Management: Text and Cases", 3rd Edition, McGraw Hill Education (India) Private Limited, 2017.

5. Stephen N Chapman, J R Tony Arnold, Ann K Gatewood and Lloyd M Clive, "Introduction to Materials Management", 8th Edition, Pearson Education Ltd.

21GE04	PRODUCTION PLANNING	3 0 0 3

COURSE OVERVIEW

The aim of a good production policy is to achieve maximum output with minimum input. It is of vital importance that production department should be managed to ensure economy in material resources and production time. This course provides opportunity to students to understand the entire production process and execute the same using an ERP software.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the manufacturing process cycle and production planning		3				
CO2	Analyse the prerequisites for the production planning		3				
CO3	Demonstrate the MPS and MRP planning process using ERP software			3	2		
CO4	Demonstrate the manufacturing execution process from production proposal to order settlement using ERP software			3	2		
CO5	Understand and explain warehouse management concepts and demonstrate logistics executions using ERP software			3	2		

UNIT 1: Introduction	9 Hours
Role and Importance of PPC in various manufacturing systems - Functions of PPC – Manufacturing Process Cycle – Basics of Production Plan - Capacity Planning - Estimating - Routing - Loading - Dispatching – Expediting	
UNIT 2: PP Prerequisites	**9 Hours**
Introduction Production Planning – Manufacturing Execution (Discrete/Repetitive/Kanban) – Production Process Industries – Organizational Structure - Material – Bill of Material – Single/Multi/Variant BOM – BOM Item Categories – Routing – Work Centre – Product Group	
UNIT 3: PP Process	**9 Hours**
Material Planning – Production Planning and Execution – Forecasting – Sales and Operations Planning (SOP) – Demand Management – Planned/Customer Independent Requirements (PIR/CIR) - Planning Strategies (MTS/MTO) – Master Production Schedule (MPS) – Material Requirement Planning (MRP) – Net Requirements - Lot Sizing – Procurement Type – External and Internal Procurement – Output of MRP & Orders	
UNIT 4: Manufacturing Execution Process	**9 Hours**
Manufacturing Execution Process – Production Proposal – Production Order – Schedule – Release – Availability Check – Schedule and Release – Shop Floor Documents – Material Withdrawal – Confirmations – Good Receipt – Order Settlement	
UNIT 5: Warehouse Management	**9 Hours**
Introduction to Warehouse Management – Organizational Structure – Master Data (Storage Bin – Material – Hazard – Batch Master Data) – Process Management and Control - Types of Goods Movements – Transfer Posting and Stock Transfer – One-Step/Two-Step Procedures – Stock Transport Order – Logistics Execution (Goods Receipt and Issue) – Picking – Packing – Shipping – Physical Inventory	
	Total: 45 Hours

Reference Books
1. ElkeRoettig, "Inventory Management and Optimization in SAP ERP", 1st Edition, Rheinwerk Publishing, 2016.
2. Jawad Akhtar, "Production Planning with SAP S/4HANA", 1st Edition, Rheinwerk Publishing, 2019.

3. Kiran, D.R., "Production Planning and Control: A Comprehensive Approach", 1st Edition, Butterworth-Heinemann, 2018.
4. Mukhopadhyay, S. K, "Production Planning and Control: Text and Cases", 3rd Edition, PHI Learning Pvt. Ltd, 2015.
5. NamitaSachan and Aman Jain, "Warehouse Management with SAP S/4HANA", 2nd Edition, Rheinwerk Publishing, 2020.

21GE05	ARTIFICIAL INTELLIGENCE AND INTERNET OF THINGS	3 0 0 3

COURSE OVERVIEW
The course is designed to introduce students to the concepts of Artificial Intelligence and its application in business.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the concept of Artificial Intelligence		3				
CO2	Develop awareness of key components of the artificial intelligence and its role in business		3				
CO3	Develop competency in Artificial Intelligence techniques		3				
CO4	Describe the application of artificial intelligence in business			3			
CO5	Apply Artificial Intelligence to develop cross domain working ability			2	3		

UNIT 1 : Introduction	9 Hours
Introduction to Artificial Intelligence – Artificial Intelligence/Machine Learning/Deep Learning - Application of Deep Learning in Business-Reinforcement Learning	
UNIT 2 : Components of Artificial Intelligence	9 Hours
Improving Operational Effectiveness and Strategic Innovation using Artificial Intelligence - Introduction to Block Chain - Internet of Things - Quantum Computing	
UNIT 3 : Developing Artificial Intelligence Models	9 Hours
Building an AI Powered Business - Data Driven Decision Making	
UNIT 4 : Applications of Artificial Intelligence in Business	9 Hours
Application of Artificial Intelligence in Marketing, Sales and Customer Service -Data to Scores - Chat Bots - Call Centre Rep Automation - Workflow Automation – Ad Content Prediction	
UNIT 5 : Implementing Artificial Intelligence	9 Hours
Concept to Implementation - Implementation of Artificial Intelligence Technology – AI platforms - Data Eco System - Building Expert Teams - Algorithm – Data Feedback System	
	Total: 45 Hours

Reference Books

1. Adelyn Zhou, Marlene Jia, Mariya Yao, "Applied Artificial Intelligence: A Handbook for Business Leaders", Topbots, 2018.
2. Ajay Agrawal, Joshua Gans,Avi Goldfarb, LJ Ganser, "Prediction Machines: The Simple Economics of Artificial Intelligence", Audible Studios, 2018.
3. Doug Rose, (2018), "Artificial Intelligence for Business: What You Need to Know about Machine Learning and Neural Networks", Chicago Lakeshore Press, 1st Edition, 2018.
4. Katie King, "Using Artificial Intelligence in Marketing: How to Harness AI and Maintain the Competitive Edge", Kogan Page, 1st Edition, 2019.
5. Prabhat Kumar, "Artificial Intelligence: Reshaping Life and Business", BPB Publications, 1st Edition, 2019.

21GE06	DATA VISUALIZATION	3 0 0 3

COURSE OVERVIEW

This course introduces the art and science of turning data into readable graphics. Students will also learn to evaluate the effectiveness of visualization designs, and think critically about each design decision, such as choice of color and choice of visual encoding

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Explain data visualization process and explore different types of visualization and how humans perceive information.	3					
CO2	Implement principles of design and color to make visualizations more engaging and effective and apply techniques from user-interface design to create an effective visualization system.		3				
CO3	Develop Data Models and use the DAX Formula language and M language to develop POWERFUL calculations				3		
CO4	Design visualization system for large datasets and dashboards using tableau and power BI , Python and R, interpret the visualization created from the data set				3		
CO5	Build professional-quality business intelligence reports from the ground up and share for collaboration		2				

UNIT 1: Data Visualization –A primer of Business Intelligence	8 Hours
Business Intelligence - Data Visualization Evolution and Characteristics – Importance of Data Visualization – Data Visualization Process - Data Visualization Tools and Software - Data Visualization Techniques – Best Practices in Data Visualization	
UNIT 2: Data visualization Using Tableau – Basics	**9 Hours**
Introduction to Tableau – Tableau interface & Architecture – Data connections & Data Sources – Preparation of Data – Exploring and analyzingdata – Creating basic charts – Apply analytics to a worksheet – Creating Groups and Hierarchies - Mapping -Sharing Insights	
UNIT 3: Data visualization Using Tableau – Advanced	**9 Hours**
Advanced calculations - Parameters – Special Charts -Creation of Dashboards – Dashboard Actions -Story Boards Preparation - Sharing the work – Profile creation in Tableau Public	
UNIT 4: Reports & Dashboards using Power BI	**10 Hours**
Power BI introduction – Power BI Architecture & Process – Connecting Power BI with different Data Sources – Power Query for Data transformation- Data Modelling in Power BI – Reports – Visualization types in Power BI – Statics and Live Dashboards- Data Refresh & Security	
UNIT 5: Visualizing through R , Python &Qlikview	**9 Hours**
Grammar of Graphics – GGplot and visualizations using R – Advanced visualizations using matplotlib, seaborn and pyplot – Qlikview overview	
	Total:	**45 Hours**

Reference Books

1. Cole NussbaumerKnaflic, "Storytelling with Data: A Data Visualization Guide for Business Professionals", Amazon Asia-Pacific Holdings Private Limited, 2015.
2. Devin Knight, "Microsoft Power BI Complete Reference: Bring your data to life with the powerful features of Microsoft Power BI", PacktPublishing, 2018.
3. Eric Pimpler, "Data Visualization and Exploration with R: A practical guide to using R, R Studio, and Tidyverse for data visualization, exploration, and data science applications", Amazon Asia-Pacific Holdings Private Limited, 2017.
4. Ryan Sleeper, "Practical Tableau", O'Reilly Media, 2018.
5. The Open University, "Visualization: Visual representations of data and information", Amazon Asia-Pacific Holdings Private Limited, 2016.

21GE07	MACHINE LEARNING	3 0 0 3

COURSE OVERVIEW

The course is designed to introduce students to machine learning algorithms from both theoretical and practical perspective, and gain experience of building predictive models using large datasets.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the various concepts of machine learning and artificial intelligence		3				
CO2	Employ supervised machine learning techniques to build classification models		3				
CO3	Devise strategies using advanced machine learning techniques				3		
CO4	Understand and explain the concept of artificial neural network and apply it predictive modelling				3		
CO5	Identify trend and seasonality components and build predictive models for time series forecasting				3		

UNIT 1 : Introduction	9 Hours

Introduction to Machine Learning – Artificial Intelligence – Deep Learning - Practical Applications of Machine Learning, Artificial Intelligence, Deep Learning – Dimensionality Reduction Techniques – Factor Analysis

UNIT 2 : Supervised Machine Learning Techniques	9 Hours

Conjoint Analysis – Full/fractional factorial design, choice cards, attribute Importance. Linear Discriminant Analysis - Fisher's method, Mahalanobis method, Standardised coefficients, Unstandardised coefficients, Structured coefficients. Naïve Bayes – Bayes theorem, conditional probability, building naïve bayes classifier

UNIT 3 : Advanced Supervised Machine Learning Techniques	9 Hours

Random Forest – Out of bag error rate, variable importance, tuning hyperparameters. SVM – hyperplanes and support vectors, SVM model building. Ensemble Methods – bagging, boosting, adaboost, gradient boosting, extreme gradient boosting, bias variance trade off, Synthetic minority oversampling technique.

UNIT 4 : Artificial Neural Networks	9 Hours

Neural networks – Neural network model building – Perceptron – Bias – Activation Function – Hidden layers – Forward Propagation – Backward Propagation – Introduction to Convolutional Neural Network and Reinforcement Learning

UNIT 5 : Time Series Analysis	9 Hours

Visualizing time series data - Components of Time Series Data - Stationarity of the Data - Differencing the Time Series – Time Series Models - Simple Exponential Smoothing, Double Exponential Smoothing, Holt's Model, Holt Winters – additive model, multiplicative model - Auto-Regressive Integrated Moving Average Model Building - Residual Analysis - Auto ARIMA Model

	Total:	45 Hours

Reference Books

1. Daniel T.Larose and Chantal D, Larose, "Data Mining and Predictive Analytics", Wiley, 2nd Edition, 2018.
2. Dean Abbot, "Applied Predictive Analytics- Principles and techniques for the professional data analyst", Wiley, 2018.
3. Efraim Turban, Ramesh Sharda, DusunDelen, "Business Intelligence and Analytics- Systems for Decision support", Pearson, 10th Edition, 2018.
4. Gordon S.Linoff, MichealJ.A.Berry, "Data Mining Techniques", Wiley, 3rd Edition, 2017.
5. MehmedKantardzic, "Data Mining- Concepts, Models, Methods and Algorithms", Wiley, 2nd Edition, 2018.

21GE08	PRESCRIPTIVE ANALYTICS	3 0 0 3

COURSE OVERVIEW

This course aims to cover procedures for formulating business problems into mathematical models. It further enables students' to solve business problems by taking actionable decisions using mathematical optimization techniques.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the concept of prescriptive analytics and prescribe the path of business solution		2	3			
CO2	Devise the business problems into specific optimization cases		2	3			
CO3	Solve a business case using exact optimization methods.				3		
CO4	Evaluate the feasible solutions and reduce to comparable finite solutions				3		
CO5	Demonstrate holistic optimization to achieve the goal of a complex system			3	3		

UNIT 1: Lineage of Prescriptive Analytics	9 Hours

Introduction to prescriptive analytics –Descriptive vs Predictive vs Prescriptive analytics - Disciplines that contribute to prescriptive analytics – Machine Learning, Computer Vision, Natural Language Processing, Signal Processing, Image Processing- Need of global optimum solution in Business scenarios - Expert System

UNIT 2: Operation and Supply Chain Analytics	9 Hours

Route profitability analysis and optimization – Fleet management – Network planning –– Network and capacity optimization – Capacity and pricing analysis - Monte carlo Simulation

UNIT 3: Exact Optimization	9 Hours

Linear programming -Integer programming – Dynamic programming – Constraint programming - Decision Analysis

UNIT 4: Heuristic-Meta Heuristics Optimization	9 Hours

Heuristic - Greedy algorithm for Travelling salesman problem; Meta Heuristic-Local search heuristic-Simulated annealing -Population-based metaheuristics-Evolutionary computations – Genetic algorithm

UNIT 5: Holistic Optimization	9 Hours

Multiple criteria decision making -Analytic Hierarchy process- Approximation Methods- Scalar Method – Aggregation – Weighted matrix eConstraint- Multi objective optimization-– Goal programming - Pareto efficiency

	Total: 45 Hours

Reference Books

1. Andre Milchman, Noah Fang, "Prescriptive Analytics: A Short Introduction to Counterintuitive Intelligence", CreateSpace Independent Publishing Platform, 2018.
2. DursunDelen, "Prescriptive Analytics: The Final Frontier for Evidence-Based Management and Optimal Decision Making", Pearson Education, 2019.
3. Gerard Blokdyk, "Prescriptive Analytics", CreateSpace Independent Publishing Platform, 2017.
4. James Evans, "Business Analytics", Pearson Publications, 2nd Edition, 2018.
5. Peter Bull, Carlos Centurion, Shannon Kearns, Eric Kelso,NariViswanathan, "Prescriptive Analytics for Business Leaders", Independent Publisher, 2017.

21GE09	PYTHON PROGRAMMING FOR ANALYTICS	3 0 0 3

COURSE OVERVIEW

This course introduces procedural programming for data analytics using Python language. It provides practical exposure to building machine learning models using Python and also introduces TensorFlow module to develop deep learning models.

CO #	CO-PO MAPPING	PO1	PO2	PO3	PO4	PO5	PO6
	At the end of the course, the students should be able to						
CO1	Understand and explain the syntax, objects and functions of python programming		3				
CO2	Employ python libraries like numpy and pandas for data handling		3				
CO3	Design and interpret visualization models using data visualization libraries like matplotlib, seaborn and plotly				3		
CO4	Employ python statistical libraries for predictive model building				3		
CO5	Develop basic deep learning models using Tensorflow				3		

UNIT 1 : Introduction to Python	9 Hours

Python Overview – Environment Setup – Jupyter Notebook –Working Directory - Syntax, comments, variables, datatypes - numbers, strings, Booleans, operators, lists, tuples, sets, dictionaries – Operators in Python – Branching statement in Python functions, lambda, array, classes, objects, python dates, string formatting

UNIT 2 : Python For Data Analysis	9 Hours

Python Libraries – Numpy – Vector and Matrix indexing, slicing, shape, reshape, joint split, sort filter, copy vs view - Random numbers; Pandas Library – Creating Dataframe, Slicing and Dicing the Data Frame, .loc and iloc, Adding Columns to Data Frame, Dropping Rows and Columns, Sorting Dataframe, Grouping the Data, Data cleaning and pre-processing

UNIT 3 : Data Visualization using Python	9 Hours

Matplotlib Library –Histogram, Scatter Plot, Pie Chart, Area Chart, Meshgrid, Quiver Plot, Contour Plot; Seaborn Library - Count Plot, Bar Plot, Point Plot, Violin Plot, Swarm Plot, Rug Plot, Cat plot; Introduction to Plotly – Animated plots

UNIT 4 : Model Building using Python	9 Hours

Statistical libraries for model building – Random forest, Support vector machines, Ensemble methods

UNIT 5 : TensorFlow	9 Hours

TensorFlow Basics – Introducing Tensors – Directed Graph – Visualizing a graph – Estimator API – Feature Extraction - Train a model – Simple programs in Tensor Flow - Deep learning with Tensorflow

	Total:	45 Hours

Reference Books

1. Camm, Cochran, Fry, Ohlmann, Andeson, Sweeny, Williams, "Essentials of Business Analytics", Cengage Learning, 2019.
2. Nishant Shukla, "Machine Learning with Tensorflow", Manning Publications, 1st Edition, 2018.
3. Sebastian Raschka, VahidMirjalili, "Python Machine Learning", Packt Books, 2nd Edition, 2017.
4. Wes McKinney, "Python for Data Analysis: Data Wrangling with Pandas, Numpy and IPython", O'Reilly Media, 2nd Edition, 2017.
5. YehezkelS.Resheff, Itay Lieder, "Learning with Tensorflow: A Guide to Building Deep Learning Systems", O'Reilly Media, 1st Edition, 2017.