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**UNIVERSITY OF PETROLEUM & ENERGY STUDIES**

**College of Engineering Studies**

**Dehradun**

**COURSE PLAN**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Programme** | **:** | **B.Tech(CSE) with Specialization in BAO** | | | |
| **Course** | **:** | **Business Process Management** | | | |
| **Subject Code** | **:** | **CSIB-281** | | | |
| **No. of credits** | **:** | **3** |  |  |  |
| **Semester** | **:** | **III** | | | |
| **Session** | **:** | **2017- 2018** | | | |
| **Batch** | **:** | **2016-2020** |  |  |  |
| **Prepared by** | **:** | **Arjun Arora** | | | |
| **Email** | **:** | **a.arora@ddn.upes.ac.in** | | | |

**Approved By**

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HOD Associate Dean

UPES Campus Tel: +91-135-2770137

“Energy Acres” Fax: +91 135- 27760904

P.O. Bidholi, Via Prem Nagar, Dehradun Website : [www.upes.ac.in](http://www.upes.ac.in)

**COURSE PLAN**

1. **PREREQUISITE:**
   1. Basic Knowledge of Computer Systems and IT applications.
   2. Basic Knowledge of Database Management Systems.

1. **OBJECTIVES OF COURSE:-**
2. To understand Business Process Fundamentals, Business process.
3. To understand Business requirement Analysis and specification, Business Architecture.
4. To understand planning a Business project.
5. **PROGRAM OUTCOMES (POs) For Business Analytics and Optimization:**

PO1: Apply knowledge of mathematics and Sciences in Computer Engineering and Information Technology.

PO2: Understand the impact of Computer Science and Engineering and Information Technology over global economics, environment and social structure to cater the needs of the society.

PO3: Understand the importance of team work with professional and ethical responsibilities.

PO4: Communicate effectively in various forms useful during all professional activities.

PO5: Implement, and evaluate computer-based systems, processes, components, or programs to meet the desired goal of the business/research domains.

PO6: Develop software by analyzing a problem to identify and define its computational requirements.

PO7: Acquire new technologies for individual and professional development.

PO8: Use current techniques, skills, and tools necessary for computing practices and to solve Engineering problems for the furtherance of the various application domains.

PO9: Apply design and development principles in the development of software systems of varying complexity.

PO10: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments

PO11: Ability to identify the different data generated in Oil and Gas sector and to construct

a computational model for further analysis of these data.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

1. **COURSE OUTCOMES For Business Process Management: At the end of this course student should be able to**

CO1. Build an ability to identify, formulate, and solve business problems.

CO2. Understand various software process models such as the SCOR and House models.

CO3. Develop an ability to analyze, design, verify, validate, implement, apply, and maintain business systems.

CO4. Understand the development of significant teamwork and project based experience

CO5. Develop an understanding of the role of business project management including planning, scheduling, risk management, etc.

CO6. Build an understanding on quality control and how to ensure good quality business software for various processes.

CO7. Understand approaches to verification and validation including static analysis, and reviews.

CO8. Build an ability to conduct standard tests and measurements; to conduct, analyze, and interpret results; and to apply results to improve processes.

**Table: Correlation of POs v/s COs**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PO/CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | - | 2 | - | - | - | - | 3 | - | - | 3 | - | - |
| CO2 | - | 3 | - | - | 3 | - | - | - | - | - | 2 | - |
| CO3 | - | - | - | - | - | - | 2 | 2 | - | - | - | - |
| CO4 | - | 2 | - | - | 2 | - | - | - | - | - | - | - |
| CO5 | - | 3 | - | 2 | - | - | - | - | - | - | - | 2 |
| CO6 | - | - | - | 2 | 3 | - | - | - | - | - | - | - |
| CO7 | - | - | - | - | 2 | - | - | - | - | - | - | - |
| CO8 | - | - | - | - | - | - | - | 3 | - | - | - | - |

1. WEAK 2. MODERATE 3. STRONG
2. **COURSE OUTLINE**

***UNIT- 1: Business Process Modelling***

***UNIT- 2:*** [***Introduction to BMP Life cycle management***](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo1html/content)

***UNIT- 3:*** [***Business Process Management Overview***](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo1html/content)

***UNIT -4:*** [***Creating User Interfaces***](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo1html/content)

***UNIT- 5:*** [***Business Scenario***](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo1html/content)***,*** [***Reporting usage scenarios***](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo2html/content)

1. **PEDAGOGY**
2. **Class Test**
3. **Quiz**
4. **Assignments**
5. **Digital and analog Presentations**
6. **Concept diary (needs to be maintained by students-short and concise notes which include course concepts that he/she has understood.)**
7. **COURSE COMPLETION PLAN**

|  |  |
| --- | --- |
| **Total Class room sessions** | 36 |
| **Total Quizzes** | 01 |
| **Total Test** | 02 |
| **Total Assignment** | 02 |

One Session =60 minutes

1. **EVALUATION & GRADING**

Students will be evaluated based on the following 3 stages.

* 1. Internal Assessment - 30%

5.2 Mid-term Examination - 20%

* 1. End term Examination - 50%

**H1. INTERNAL ASSESSMENT: WEIGHTAGE – 30%**

Internal Assessment shall be done based on the following:

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Description** | **% of Weightage** |
| 1 | Individual Assignments & Problems/Presentations | 30% |
| 2 | Class Tests | 30% |
| 3 | Quizzes | 20% |
| 4 | General Discipline | 20% |

**H2. Internal Assessment Record Sheet (including Mid Term Examination marks)** *will be displayed online at the end of semester i.e. last week of regular classroom teaching.*

**H3. CLASS TESTS/QUIZZES:** One Class Test based on descriptive type theoretical & numerical questions will be held before the Mid Term Examination and one before End Term Examination; and quiz based on objective types questions to be held before the End Term Examination. Those who do not appear in Viva-Voce and quiz examinations shall lose their marks.

*The marks obtained by the students will be displayed on LMS a week before the start of Mid Term and End Term Examinations respectively.*

**H4. ASSIGNMENTS:** There will be home assignments based on theory and numerical problems one before the Mid Term Examination and one before the End Term Examination. Those who fail to submit the assignments by the due date shall lose their marks.

**H5. GENERAL DISCIPLINE:** Based on student’s regularity, punctuality, sincerity and behavior in the class.

*The marks obtained by the students will be displayed on LMS at the end of semester.*

**H6. MID TERM EXAMINATION: WEIGHTAGE – 20%**

Mid Term examination shall be Two Hours duration and shall be a combination ofShort and Long theory Questions.

***Date of showing Mid Term Examination Answer Sheets: Within a week after completion of mid Sem examination.***

**H7. END TERM EXAMINATION: WEIGHTAGE – 50%**

End Term Examination shall be Three Hours duration and shall be a combination of Short and Long theory/numerical Questions.

**H8. GRADING:**

The overall marks obtained at the end of the semester comprising all the above three mentioned shall be converted to a grade.

1. **DETAILED SESSION PLAN**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SESS-ION** | **TOPIC** | **Course Outcomes Addressed** | **Required Learning Resources**  **(including media)** | **Discussion(s) and  Postings on Frontier** | **Assignment(s)/Quizzes/ Tests** |
| **L1** | Interaction with students.  Description of Course plan. | **CO2** | **Books:**  1.Introduction to Manufacturing Informatics(IBM Courseware)  Note: Learning resources have been written for first few lectures only. For remaining lectures the same may be added accordingly. |  |  |
|  | **UNIT 1** |  |
| **L2** | Business Process Modelling – Introduction and Definitions Process Choreography, [Business Process – Process Designer](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo3html/content), |  |
| **L3** | [Classification of Business Processes](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo6html/content), [Classification of Business Processes – Intra-organizational](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo7html/content), |  |
| **L4** | [Abstraction Copies - Vertical Abstraction](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo11html/content), |  |
| **L5** | Process Models, and Instances, [Process Meta-models](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo14html/content), |  |
|  | **UNIT 2** | **CO1**  **CO3** | 1.Introduction to Manufacturing Informatics(IBM Courseware) |  |  |
| **L6** | [Introduction to BMP Life cycle managment](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo1html/content), |
| **L7** | [Process Control Flow- Gateway Models](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo15html/content) |
| **L8** | [Business Process Management Activities](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo2html/content), [BPM suites](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo3html/content), | Assignment – 1 |
| **L9** | [BPM Technology](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo4html/content), [BPM Benefits for IT](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo5html/content), |
| **L10** | [Business Process Management Life Cycle](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo6html/content), |
| **L11** | [Fine tuning the Business Process.](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo7html/content) [Business model and Process](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo8html/content), | Class Test 1 |
| **L12** | [Business Process modelling tools](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo9html/content), [Business Process Integration](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo10html/content), |
| **L13** | [Business Process Reengineering](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo11html/content), [Business Process Managment](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u2nlo12html/content) |
|  |  | **CO8** | 1.Introduction to Manufacturing Informatics(IBM Courseware) |  |  |
|  | **UNIT 3** | Assignment – 2 |
| **L14** | [Business Process Management Overview](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo1html/content), [Overview of Process modelling](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo2html/content), |
| **L15** | [Process applications an Overview](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo3html/content), [Deploying and Managing Process applications](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo4html/content), |  |
| **L16** | [Process Designer](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo5html/content), [IBM Process Designer](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo6html/content), |  |
| **L17** | [Understanding Process Components](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo7html/content) |  |
| **L18** | [Creating a Business Process Definition (BPD)](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo8html/content) [Implementing Activities](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u3nlo9html/content) |  |
|  | **UNIT 4** |  |  |  | Quiz 1 |
| **L19** | [Creating User Interfaces](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo1html/content), [Coaches & Coah views](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo2html/content), [Stock Content Controls](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo3html/content), [Advanced items for Coach Views](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo4html/content), | **CO8**  **CO7** | 1.Introduction to Manufacturing Informatics(IBM Courseware) |  |  |
| **L20** | [Coach View API Reference](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo7html/content), [Architecting complex process applications](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo8html/content), |
| **L21** | [Developing Flexible and Efficient Process Applications](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo9html/content), |  |
| **L22** | [Using IBM Business Process Manager SQL Integration Services](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo12html/content), [Understanding the Message Structure](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo13html/content), |  | Class Test 2 |
| **L23** | [Passing complex variable types to Undercover Agents](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo14html/content), |
|  | **UNIT 5** | **CO4** | 1.Introduction to Manufacturing Informatics(IBM Courseware) |  |  |
| **L24** | [Business Scenario](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo1html/content), [Reporting usage scenarios](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo2html/content), |  |
| **L25** | [Business Functions to Business Processes](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo12html/content), Intro to Activity and |  |
| **L26** | [Custom HTML Item](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo5html/content), [Coach View behavior](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo6html/content), |
| **L27** | [Enabling Task Management](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo10html/content), [Integrating with other systems](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo11html/content), |  |
| L28 | [Publishing IBM Business Process Manager Web Services](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u4nlo15html/content) |  |  |  |  |
| **L29** | Business Process Modelling Foundation, [Abstraction Concepts – Horizontal Abstraction](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo10html/content), |  |  |  |  |
| **L30** | [Process Configuration](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo4html/content), [Evaluation and Administration](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo5html/content), |  |  |
| **L31** | [Business Process Classification - Degree of Structuring](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u1nlo8html/content), |  |  |
| L32 | [IBM solution for collaboration Life Cycle](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo3html/content), |  |  |  |  |
| **L33** | [Designing process interactions for business users](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo4html/content), |  |
| L34 | [Factors affecting BPEL Process Interactions](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo5html/content), |  |
| L35 | [Developing flexible and efficient process applications](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo6html/content), |  |
| L36 | [IBM Business Monitor Dashboards](https://ilor.itrackglobal.com:443/ilor/objects/BAOBPMContent:201/datastreams/u5nlo7html/content) |  |
|  |  |  |

**GUIDELINES**

***Cell Phones and other Electronic Communication Devices*:** Cell phones and other electronic communication devices (such as Blackberries/Laptops) are not permitted in classes during Tests or the Mid/Final Examination. Such devices MUST be turned off in the class room.

***E-Mail and online learning tool:*** Each student in the class should have an e-mail id and a pass word to access the LMS system regularly. Regularly, important information – Date of conducting class tests, guest lectures, via online learning tool. The best way to arrange meetings with us or ask specific questions is by email and prior appointment. All the assignments preferably should be uploaded on online learning tool. Various research papers/reference material will be mailed/uploaded on online learning platform time to time.

***Attendance:*** Students are required to have **minimum attendance of 75%** in each subject. Students with less than said percentage shall **NOT** be allowed to appear in the end semester examination.

**Course outcome assessment:** To assess the fulfillment of course outcomes two different approaches have been decided. Degree of fulfillment of course outcomes will be assessed in different ways through direct assessment and indirect assessment. In Direct Assessment, it is measured through quizzes, tests, assignment, Mid-term and/or End-term examinations. It is suggested that each examination is designed in such a way that it can address one or two outcomes (depending upon the course completion). Indirect assessment is done through the student survey which needs to be designed by the faculty (sample format is given below) and it shall be conducted towards the end of course completion. The evaluation of the achievement of the Course Outcomes shall be done by analyzing the inputs received through Direct and Indirect Assessments and then corrective actions suggested for further improvement.

***Passing criterion:*** Student has to secure minimum 30%/40% marks of the “highest marks in the class scored by a student in that subject (in that class/group class)” individually in both the ‘End-Semester examination’ and ‘Total Marks’ in order to pass in that paper.

* Passing Criterion for B. Tech: minimum 30% of the highest marks in the class
* Passing Criterion for M. Tech: minimum 40% of the highest marks in the class

**Sample format for Indirect Assessment of Course outcomes**

|  |
| --- |
| NAME: |
| ENROLLMENT NO: |
| SAP ID: |
| COURSE: |
| PROGRAM: |

Please rate the following aspects of course outcomes of Software Engineering & Project Management.

Use the scale 1-4\*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl. No. | Outcome | 1 | 2 | 3 | 4 |
| 1 | Build an ability to identify, formulate, and solve engineering problems. |  |  |  |  |
| 2 | Understand various software process models such as the waterfall and evolutionary models. |  |  |  |  |
| 3 | Develop an ability to analyze, design, verify, validate, implement, apply, and maintain software systems. |  |  |  |  |
| 4 | Understand the development of significant teamwork and project based experience |  |  |  |  |
| 5 | Develop an understanding of the role of project management including planning, scheduling, risk management, etc. |  |  |  |  |
| 6 | Build an understanding on quality control and how to ensure good quality software |  |  |  |  |
| 7 | Understand approaches to verification and validation including static analysis, and reviews. |  |  |  |  |
| 8 | Build an ability to conduct standard tests and measurements; to conduct, analyze, and interpret results; and to apply results to improve processes. |  |  |  |  |

3

Below Average

Good

1

**\***

Very Good

Average

4

2