# J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

**ACADEMIC YEAR** **2013-14**

http://www.jbiet.edu.in

| | | |
|---|---|---|
| | **COURSE PLAN** | 2013-14 |
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P & R.Navya Sree
Designation: Assistant Professors
Department:: IT

COURSE DETAILS

| | | | |
|---|---|---|---|
| Name Of The Programme:: | B.Tech | Batch:: | IT |
| Designation:: | Assistant Professor | | |
| Year II | | Semester II | |
| Department:: | | | |
| Title of The Subject | Principles of Programming Languages | Subject Code | 6754028 |
| No of Students | 50 | | |

| | COURSE PLAN | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT

1. TARGET

a) Percentage Pass: 90

b) Percentage I class: 80

2. COURSE PLAN

(Please write how you intend to cover the contents: i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.)

3. METHOD OF EVALUATION

3.1. ☐ Continuous Assessment Examinations (CAE 1, CAE 2)

3.2. ☐ Assignments / Seminars

3.3. ☐ Mini Projects

3.4. ☐ Quiz

3.5. ☐ Term End Examination

3.6. ☐ Others

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subject in this Semester.

Signature of HOD
Date:

Signature of Faculty
Date:

| | GUIDELINES TO STUDY THE SUBJECT | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P

Designation: Assistant Professor

Department:: IT

Guidelines for Preparing the Course:

| Course Description: |
|---|
| The course is aimed at making the student familiar with the general concepts common to all programming languages so as to facilitate learning new languages. Language paradigms (i.e., logic, functional, procedural, object-oriented) are compared and implementation strategies are discussed. |

| Course Objectives: |
|---|
| 1. To provide an introduction to formalisms for specifying syntax and semantics of programming languages, including an introduction to the theory of formal languages,<br>2. To provide an exposure to core concepts and principles in contemporary programming languages, and<br>3. To explore various important programming methodologies, such as functional programming, logic programming, programming with abstract data types, and object-oriented programming.<br>4. Learn fundamental concepts that underlies in most programming languages.<br>4. Understand the tradeoff between language design and implementation: how are concepts or features in different languages selected? |

| Learning Outcomes: |
|---|
| Student is able to explain general principles, paradigms and basic concepts of programming languages at a higher level than that of a single programming language. Student understands the effects of these principles to language implementation and use, and is able to choose a suitable programming language for his purposes. |

| | | |
|---|---|---|
| | **COURSE OBJECTIVES** | 2013-14 |
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT

On completion of this Subject / Course the student shall be able to:

| S.No. | Objectives | Outcomes |
|---|---|---|
| 1. | To provide an introduction to formalisms for specifying syntax and semantics of programming languages, including an introduction to the theory of formal languages, | Identify the common concepts used to create programming languages. |
| 2. | To provide an exposure to core concepts and principles in contemporary programming languages, and | prove properties of programs by various formal means, including structural and fixpoint induction. |
| 3. | To explore various important programming methodologies, such as functional programming, logic programming, programming with abstract data types, and object-oriented programming. | demonstrate correspondences between grammars, languages and automata. |
| 4. | To explore various important programming methodologies, such as functional programming, logic programming, programming with abstract data types, and object-oriented programming. | use standard parser and lexer generator tools to construct and implement translations such as a very simple compiler. |
| 5. | Learn fundamental concepts that underlies in most programming languages. | solve simple recursive equations by determining the limit of the Kleene fixpoint construction. |
| 6. | Understand the tradeoff between language design and implementation: how are concepts or features in different languages selected? | design and extend operational and denotational definitions for basic programming language constructs. |
| 7. | Be able in principle to program in an *imperative (or procedural)*, an *object-oriented*, a *functional*, and a *logical* programming language | Compare and contrast factors and commands that affect the programming state. |
| 8. | Understand the significance of an implementation of a programming language in a *compiler* or *interpreter* | Explain the evolution and key features of the major programming languages. |
| 9. | Increase the capacity to express programming concepts and choose among alternative ways to express things | Analyze and evaluate new programming languages and new language features. |

| | | |
|---|---|---|
| 10. | Be able in principle to design a new programming language | Identify the basic objects and constructs in Object-Oriented Programming. |

**Signature of Faculty**
**Date:**

Note: For each of the OBJECTIVE indicate the appropriate OUTCOMES to be achieved.
Kindly refer Page 16, to know the illustrative verbs that can be used to state the objectives.

| | COURSE OUTCOMES | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT

**The expected outcomes of the Course / Subject are:**

| S.No. | General Categories of Outcomes | Specific Outcomes of the Course |
|---|---|---|
| A. | An ability to apply knowledge of mathematics, science, and engineering | |
| B. | An ability to design and conduct experiments, as well as to analyze and interpret data | |
| C. | An ability to design a system, component, or process to meet desired needs within realistic Constraints such as economic, environmental, social, political, ethical, health and safety, Manufacturability and sustainability | |
| D. | An ability to function on multi-disciplinary teams | |
| E. | An ability to identify, formulate, and solve engineering problems | |
| F. | An understanding of professional and ethical responsibility | |
| G. | An ability to communicate effectively | |
| H. | The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context | |
| I. | A recognition of the need for, and an ability to engage in life-long learning | |
| J. | A knowledge of contemporary issues | |
| K. | An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. | |

**Objectives – Outcome Relationship Matrix** (Indicate the relationships by ☒ mark).

| Objectives \ Outcomes | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | COURSE SCHEDULE | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| S. No. | Description | Duration (Date) | | Total No. of Periods |
|---|---|---|---|---|
| | | From | To | |
| 1. | Preliminary Concepts: Reasons for studying, concepts of programming languages, Programming domains, Language Evaluation Criteria, influences on Language design, Language categories, Programming Paradigms – Imperative, Object Oriented, functional Programming , Logic Programming. Programming Language Implementation – Compilation and Virtual Machines, programming environments. | 09-12-2013 | 24-12-2013 | 10 |
| 2. | Syntax and Semantics: general Problem of describing Syntax and Semantics, formal methods of describing syntax – BNF, EBNF for common programming languages features, parse trees, ambiguous grammars, attribute grammars, denotational semantics and axiomatic semantics for common programming language features. | 28-12-2013 | 20-01-2014 | 10 |
| 3. | Data types: Introduction, primitive, character, user defined, array, associative, record, union, pointer and reference types, design and implementation uses related to these types. Names, Variable, concept of binding, type checking, strong typing, type compatibility, named constants, variable initialization. | 21-01-2014 | 01-02-2014 | 10 |
| 4. | Expressions and Statements: Arithmetic relational and Boolean expressions, Short circuit evaluation mixed mode assignment, Assignment Statements, Control Structures – Statement Level, Compound Statements, Selection, Iteration, Unconditional Statements, guarded commands. | 03-02-2014 | 21-02-2014 | 10 |
| 5. | Subprograms and Blocks: Fundamentals of sub-programs, Scope and lifetime of variable, static and dynamic scope, Design issues of subprograms and operations, local referencing environments, parameter passing methods, overloaded sub-programs, generic sub-programs, parameters that are sub-program names, design issues for functions user defined overloaded operators, co routines. | 22-02-2014 | 04-03-2014 | 10 |
| 6. | | | | |

| | | | | |
|---|---|---|---|---|
| | Abstract Data types: Abstractions and encapsulation, introductions to data abstraction, design issues, language examples, C++ parameterized ADT, object oriented programming in small talk, C++, Java, C#, Ada 95 Concurrency: Subprogram level concurrency, semaphores, monitors, massage passing, Java threads, C# threads. | 07-03-2014 | 08-03-2014 | 2 |
| 7 | Exception handling : Exceptions, exception Propagation, Exception handler in Ada, C++ and Java.<br>Logic Programming Language : Introduction and overview of logic programming, basic elements of prolog, application of logic programming. | | | |
| 8 | Functional Programming Languages: Introduction, fundamentals of FPL, LISP, ML, Haskell, application of Functional Programming Languages and comparison of functional and imperative Languages. | | | |

Total No. of Instructional periods available for the course: Hours / Periods

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - I | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | 1 | Preliminary Concepts: Reasons for studying, concepts of programming languages | 1 | 1. Concepts of Programming Languages Robert .W. Sebesta 6/e, Pearson Education.(TB1) |
| 2 | | 1 | Programming domains | | (TB1) |
| 3 | | 1 | Language Evaluation Criteria | | (TB1) |
| 4 | | 1 | influences on Language design | | (TB1) |
| 5 | | 1 | Language categories | | (TB1) |
| 6 | | 1 | Programming Paradigms | | (TB1) |
| 7 | | 1 | Imperative, Object Oriented | | (TB1) |
| 8 | | 1 | Functional Programming , Logic Programming. | | (TB1) |
| 9 | | 1 | Programming Language Implementation | | (TB1) |
| 10 | | 1 | Compilation and Virtual Machines, programming environments | | (TB1) |
| | | | | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.

2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | **SCHEDULE OF INSTRUCTIONS**<br><br>**UNIT - II** | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Syntax and Semantics: general Problem of describing Syntax and Semantics, | 2 | (TB1) |
| 2 | | | formal methods of describing syntax – BNF | | (TB1) |
| 3 | | | EBNF for common programming languages features | | (TB1) |
| 4 | | | parse trees, | | (TB1) |
| 5 | | | ambiguous grammars, | | (TB1) |
| 6 | | | attribute grammars, | | (TB1) |
| 7 | | | denotational semantics and axiomatic semantics for common programming language features. | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - III | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT

The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Data types: Introduction, primitive, characte | 3 | (TB1) |
| 2 | | | user defined, array, associative, record, union, pointer and reference types | | (TB1) |
| 3 | | | design and implementation uses related to these types | | (TB1) |
| 4 | | | Names, Variable, concept of binding | | (TB1) |
| 5 | | | type checking, strong typing | | (TB1) |
| 6 | | | type compatibility, named constants | | (TB1) |
| 7 | | | variable initialization | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - IV | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Expressions and Statements: Arithmetic relational and Boolean expressions | 4 | (TB1) |
| 2 | | | Short circuit evaluation mixed mode assignment | | (TB1) |
| 3 | | | Assignment Statements | | (TB1) |
| 4 | | | Control Structures – Statement Level | | (TB1) |
| 5 | | | Compound Statements | | (TB1) |
| 6 | | | Selection, Iteration | | (TB1) |
| 7 | | | Unconditional Statements | | (TB1) |
| 8 | | | guarded commands. | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - V | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Subprograms and Blocks: Fundamentals of sub-programs | 1,2 | (TB1) |
| 2 | | | Scope and lifetime of variable | | (TB1) |
| 3 | | | static and dynamic scope, | | (TB1) |
| 4 | | | Design issues of subprograms and operations | | (TB1) |
| 5 | | | local referencing environments | | (TB1) |
| 6 | | | parameter passing methods | | (TB1) |
| 7 | | | overloaded sub-programs, generic sub-programs, parameters that are sub-program names | | (TB1) |
| 8 | | | design issues for functions user defined overloaded operators, co routines. | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - VI | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Abstract Data types: Abstractions and encapsulation | 3 | (TB1) |
| 2 | | | introductions to data abstraction | | (TB1) |
| 3 | | | design issues, language examples | | (TB1) |
| 4 | | | C++ parameterized ADT | | (TB1) |
| 5 | | | object oriented programming in small talk, C++, Java, C#, Ada 95 | | (TB1) |
| 6 | | | Concurrency: Subprogram level concurrency | | (TB1) |
| 7 | | | semaphores, monitors | | (TB1) |
| 8 | | | massage passing, Java threads | | (TB1) |
| 9 | | | C# threads. | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - VII | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Exception handling : Exceptions | 4 | (TB1) |
| 2 | | | exception Propagation | | (TB1) |
| 3 | | | Exception handler in Ada, C++ and Java. | | (TB1) |
| 4 | | | Logic Programming Language : Introduction and overview of logic programming | | (TB1) |
| 5 | | | basic elements of prolog | | (TB1) |
| 6 | | | application of logic programming. | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | SCHEDULE OF INSTRUCTIONS<br><br>UNIT - VIII | 2013-14<br><br>Regulation: R11 |
|---|---|---|

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

| Sl. No. | Date | No. of Periods | Topics / Sub - Topics | Objectives & Outcome Nos. | References (Text Book, Journal…) Page No___ to ___ |
|---|---|---|---|---|---|
| 1 | | | Functional Programming Languages: Introduction | 5,6 | (TB1) |
| 2 | | | fundamentals of FPL | | (TB1) |
| 3 | | | LISP, ML | | (TB1) |
| 4 | | | Haskell | | (TB1) |
| 5 | | | application of Functional Programming Languages and comparison of functional and imperative Language | | (TB1) |

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

| | COURSE COMPLETION STATUS | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P

Subject:: PPL Subject Code6754028

Department:: IT

Actual Date of Completion & Remarks, if any

| Units | Remarks | Nos. of Objectives Achieved |
|---|---|---|
| Unit 1 | | |
| Unit 2 | | |
| Unit 3 | | |
| Unit 4 | | |
| Unit 5 | | |
| Unit 6 | | |
| Unit 7 | | |
| Unit 8 | | |

**Signature of Dean of School**
**Date:**

**Signature of Faculty**
**Date:**

NOTE: AFTER THE COMPLETION OF EACH UNIT MENTION THE NUMBER OF OBJECTIVES ACHIEVED.

| | | |
|---|---|---|
| | **TUTORIAL SHEETS - I** | 2013-14 |
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

Date:

This Tutorial corresponds to Unit Nos. Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

**Signature of Dean of School**
**Date:**

**Signature of Faculty**
**Date:**

| | | |
|---|---|---|
| | **TUTORIAL SHEETS - II** | 2013-14 |
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT
The Schedule for the whole Course / Subject is::

Date:

This Tutorial corresponds to Unit Nos. Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

**Signature of Dean of School**
**Date:**

**Signature of Faculty**
**Date:**

| | | |
|---|---|---|
| | **TUTORIAL SHEETS - II** | 2013-14 |
| | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: Prakash P
Designation: Assistant Professor
Department:: IT

Date:

This Tutorial corresponds to Unit Nos. Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

**Signature of Dean of School**
**Date:**

**Signature of Faculty**
**Date:**

| | | |
|---|---|---|
| | **ILLUSTRATIVE VERBS FOR STATING INSTRUCTIONAL OBJECTIVES** | 2013-14 |
| | | Regulation: R11 |

*These verbs can also be used while framing questions for Continuous Assessment Examinations as well as for End – Semester (final) Examinations.*

ILLUSTRATIVE VERBS FOR STATING **GENERAL OBJECTIVES**

| | | | |
|---|---|---|---|
| Know<br>Comprehend | Understand<br>Apply | Analyze<br>Design | Generate<br>Evaluate |

ILLUSTRATIVE VERBS FOR STATING **SPECIFIC OBJECTIVES:**

**A. Cognitive Domain**

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| **Knowledge** | **Comprehension Understanding** | **Application** of knowledge & comprehension | **Analysis** of whole w.r.t. its constituents | **Synthesis** combination of ideas/constituents | **Evaluation** judgement |
| Define | Convert | Change | Breakdown | Categorize | Appraise |
| Identify | Defend | Compute | Differentiate | Combine | Compare |
| Label | Describe (a | Demonstrate | Discriminate | Compile | Conclude |
| List | procedure) | Deduce | Distinguish | Compose | Contrast |
| Match | Distinguish | Manipulate | Separate | Create | Criticize |
| Reproduce | Estimate | Modify | Subdivide | Devise | Justify |
| Select | Explain why/how | Predict | | Design | Interpret |
| State | Extend | Prepare | | Generate | Support |
| | Generalize | Relate | | Organize | |
| | Give examples | Show | | Plan | |
| | Illustrate | Solve | | Rearrange | |
| | Infer | | | Reconstruct | |
| | Summarize | | | Reorganize | |
| | | | | Revise | |

| **B. Affective Domain** | | **C. Psychomotor Domain (skill development)** | | | | |
|---|---|---|---|---|---|---|
| Adhere | Resolve | Bend | Dissect | Insert | Perform | Straighten |
| Assist | Select | Calibrate | Draw | Keep | Prepare | Strengthen |
| Attend | Serve | Compress | Extend | Elongate | Remove | Time |
| Change | Share | Conduct | Feed | Limit | Replace | Transfer |
| Develop | | Connect | File | Manipulate | Report | Type |
| Help | | Convert | Grow | Move preciselyReset | | Weigh |
| Influence | | Decrease | Handle | Operate | Run | |
| Initiate | | Demonstrate | Increase | Paint | Set | |

| | LESSON PLAN<br>Unit-1 | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit** I

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Preliminary Concepts: Reasons for studying, concepts of programming languages | | TB1 | |
| 2 | Programming domains | | | |
| 3 | Language Evaluation Criteria | | | |
| 4 | influences on Language design | | | |
| 5 | Language categories | | | |
| 6 | Programming Paradigms | | | |
| 7 | Imperative, Object Oriented | | | |
| 8 | Functional Programming , Logic Programming. | | | |
| 9 | Programming Language Implementation | | | |
| 10 | Compilation and Virtual Machines, programming environments | | | |

On completion of this lesson the student shall be able to(Outcomes)

1.

2.

3.

4

| | | |
|---|---|---|
| | **ASSIGNMENT**<br>**Unit-I** | 2013-14<br>Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

| | LESSON PLAN<br>Unit-II | 2013-14 |
|---|---|---|
| | | Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit II**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Syntax and Semantics: general Problem of describing Syntax and Semantics, | 50min | TB1 | |
| 2 | formal methods of describing syntax – BNF | | | |
| 3 | EBNF for common programming languages features | | | |
| 4 | parse trees, | | | |
| 5 | ambiguous grammars, | | | |
| 6 | attribute grammars, | | | |
| 7 | denotational semantics and axiomatic semantics for common programming language features. | | | |
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On completion of this lesson the student shall be able to

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| | **ASSIGNMENT**<br>**Unit-II** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

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| | **LESSON PLAN**<br>**Unit-III** | 2013-14<br>Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit III**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Data types: Introduction, primitive, characte | 50min | TB1 | |
| 2 | user defined, array, associative, record, union, pointer and reference types | | | |
| 3 | design and implementation uses related to these types | | | |
| 4 | Names, Variable, concept of binding | | | |
| 5 | type checking, strong typing | | | |
| 6 | type compatibility, named constants | | | |
| 7 | variable initialization | | | |

On completion of this lesson the student shall be able to(Outcomes)

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| | **ASSIGNMENT**<br>**Unit-III** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

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| | **LESSON PLAN**<br>**Unit-IV** | 2013-14<br>Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit IV**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Expressions and Statements: Arithmetic relational and Boolean expressions | 50min | TB1 | |
| 2 | Short circuit evaluation mixed mode assignment | | | |
| 3 | Assignment Statements | | | |
| 4 | Control Structures – Statement Level | | | |
| 5 | Compound Statements | | | |
| 6 | Selection, Iteration | | | |
| 7 | Unconditional Statements | | | |
| 8 | guarded commands. | | | |
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On completion of this lesson the student shall be able to (Outcomes)

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| | **ASSIGNMENT**<br>**Unit-IV** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

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| | **LESSON PLAN**<br>**Unit-V** | 2013-14<br>Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit V**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Subprograms and Blocks: Fundamentals of sub-programs | 50min | TB1 | |
| 2 | Scope and lifetime of variable | | | |
| 3 | static and dynamic scope, | | | |
| 4 | Design issues of subprograms and operations | | | |
| 5 | local referencing environments | | | |
| 6 | parameter passing methods | | | |
| 7 | overloaded sub-programs, generic sub-programs, parameters that are sub-program names | | | |
| 8 | design issues for functions user defined overloaded operators, co routines. | | | |
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On completion of this lesson the student shall be able to (Outcomes)

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| | **ASSIGNMENT**<br>**Unit-V** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

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| | **LESSON PLAN**<br>**Unit-VI** | 2013-14<br>Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit Vi**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Abstract Data types: Abstractions and encapsulation | 50min | TB1 | |
| 2 | introductions to data abstraction | | | |
| 3 | design issues, language examples | | | |
| 4 | C++ parameterized ADT | | | |
| 5 | object oriented programming in small talk, C++, Java, C#, Ada 95 | | | |
| 6 | Concurrency: Subprogram level concurrency | | | |
| 7 | semaphores, monitors | | | |
| 8 | massage passing, Java threads | | | |
| 9 | C# threads. | | | |

On completion of this lesson the student shall be able to (Outcomes)

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| | **ASSIGNMENT**<br>**Unit-VI** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

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| | **LESSON PLAN**<br>**Unit-VII** | 2013-14<br>Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit VII**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Exception handling : Exceptions | 50min | TB1 | |
| 2 | exception Propagation | | | |
| 3 | Exception handler in Ada, C++ and Java. | | | |
| 4 | Logic Programming Language : Introduction and overview of logic programming | | | |
| 5 | basic elements of prolog | | | |
| 6 | application of logic programming. | | | |
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On completion of this lesson the student shall be able to

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| | **ASSIGNMENT**<br>**Unit-VII** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.

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| | **LESSON PLAN**<br>**Unit-VIII** | 2013-14<br>Regulation: R11 |

Name of the Faculty: P.Prakash

Subject PPL Subject Code 6754028

**Unit VIII**

INSTRUCTIONAL OBJECTIVES:

| Session No | Topics to be covered | Time | Ref | Teaching Method |
|---|---|---|---|---|
| 1 | Functional Programming Languages: Introduction | 50min | TB1 | |
| 2 | fundamentals of FPL | | | |
| 3 | LISP, ML | | | |
| 4 | Haskell | | | |
| 5 | application of Functional Programming Languages and comparison of functional and imperative Language | | | |

On completion of this lesson the student shall be able to

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| | **ASSIGNMENT**<br>**Unit-VIII** | 2013-14 |
| | | Regulation: R11 |

**Assignment / Questions**

**Signature of Faculty**

Note: Mention for each question the relevant objectives and outcomes.