**NATURAL LANGUAGE PROCESSING**  
[As per Choice Based Credit System (CBCS) scheme]  
(Effective from the academic year 2016-2017)  
**SEMESTER – VII**  

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>IA Marks</th>
<th>Number of Lecture Hours/Week</th>
<th>Exam Marks</th>
<th>Total Number of Lecture Hours</th>
<th>Exam Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>15CS741</td>
<td>20</td>
<td>3</td>
<td>80</td>
<td>40</td>
<td>03</td>
</tr>
</tbody>
</table>

**CREDITS – 03**

**Course objectives:** This course will enable students to

- Learn the techniques in natural language processing.
- Be familiar with the natural language generation.
- Be exposed to Text Mining.
- Understand the information retrieval techniques

**Module – 1**


<table>
<thead>
<tr>
<th>Teaching Hours</th>
<th>8 Hours</th>
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**Module – 2**


<table>
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<tr>
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<th>8 Hours</th>
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**Module – 3**

**Extracting Relations from Text: From Word Sequences to Dependency Paths:**
Introduction, Subsequence Kernels for Relation Extraction, A Dependency-Path Kernel for Relation Extraction and Experimental Evaluation.

**Mining Diagnostic Text Reports by Learning to Annotate Knowledge Roles:**
Introduction, Domain Knowledge and Knowledge Roles, Frame Semantics and Semantic Role Labeling, Learning to Annotate Cases with Knowledge Roles and Evaluations.

**A Case Study in Natural Language Based Web Search:** InFact System Overview, The GlobalSecurity.org Experience.

<table>
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<tr>
<th>Teaching Hours</th>
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**Module – 4**


**Automatic Document Separation: A Combination of Probabilistic Classification and Finite-State Sequence Modeling:** Introduction, Related Work, Data Preparation, Document Separation as a Sequence Mapping Problem, Results.

**Evolving Explanatory Novel Patterns for Semantically-Based Text Mining:** Related Work, A Semantically Guided Model for Effective Text Mining.
Module – 5

**INFORMATION RETRIEVAL AND LEXICAL RESOURCES:** Information Retrieval: Design features of Information Retrieval Systems-Classical, Non classical, Alternative Models of Information Retrieval – valuation Lexical Resources: World Net-Frame Net- Stemmers-POS Tagger- Research Corpora. 8 Hours

**Course outcomes:** The students should be able to:

- Analyze the natural language text.
- Generate the natural language.
- Do Text mining.
- Apply information retrieval techniques.

**Question paper pattern:**
The question paper will have ten questions.
There will be 2 questions from each module.
Each question will have questions covering all the topics under a module.
The students will have to answer 5 full questions, selecting one full question from each module.

**Text Books:**


**Reference Books:**

<table>
<thead>
<tr>
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<th>Exam Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>15CS742</td>
<td>20</td>
<td>80</td>
<td>03</td>
</tr>
</tbody>
</table>

**CREDITS – 03**

**Course objectives:** This course will enable students to
- Explain the fundamentals of cloud computing
- Illustrate the cloud application programming and aneka platform
- Contrast different cloud platforms used in industry

<table>
<thead>
<tr>
<th>Module – 1</th>
<th>Teaching Hours</th>
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</table>

<table>
<thead>
<tr>
<th>Module – 2</th>
<th>Teaching Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud Computing Architecture, Introduction, Cloud Reference Model</td>
<td>8 Hours</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Module – 3</th>
<th>Teaching Hours</th>
</tr>
</thead>
</table>

### Module – 4


### Module – 5


### Course outcomes:
The students should be able to:
- Explain cloud computing, virtualization and classify services of cloud computing
- Illustrate architecture and programming in cloud
- Describe the platforms for development of cloud applications and List the application of cloud.

### Question paper pattern:
The question paper will have ten questions.
There will be 2 questions from each module.
Each question will have questions covering all the topics under a module.
The students will have to answer 5 full questions, selecting one full question from each module.

### Text Books:

### Reference Books:
INFORMATION AND NETWORK SECURITY [As per Choice Based Credit System (CBCS) scheme]
(Effective from the academic year 2016 -2017)

SEMESTER – VII

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>15CS743</td>
<td>20</td>
<td>40</td>
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</table>

CREDITS – 03

Course objectives: This course will enable students to
- Analyze the cryptographic processes.
- Summarize the digital security process.
- Indicate the location of a security process in the given system.

Module – 1

Module – 2.

Module – 3

Module – 4
Key management fundamentals Key lengths and lifetimes Key generation Key establishment Key storage Key usage Governing key management Public-Key Management Certification of public keys The certificate lifecycle Public-key management models Alternative approaches.

Module – 5

Course outcomes: The students should be able to:
- Analyze the Digitals security lapses
- Illustrate the need of key management

Question paper pattern:
The question paper will have ten questions.
There will be 2 questions from each module.
Each question will have questions covering all the topics under a module.
The students will have to answer 5 full questions, selecting one full question from each module.
# UNIX SYSTEM PROGRAMMING

| [As per Choice Based Credit System (CBCS) scheme] |
| (Effective from the academic year 2016 -2017) |
| SEMESTER – VII |

| Subject Code | 15CS744 |
| Number of Lecture Hours/Week | 3 |
| IA Marks | 20 |
| Total Number of Lecture Hours | 40 |
| Exam Marks | 80 |
| Exam Hours | 03 |

**CREDITS – 03**

**Course objectives:** This course will enable students to

- Explain the fundamental design of the unix operating system
- Familiarize with the systems calls provided in the unix environment
- Design and build an application/service over the unix operating system

| Module – 1 | Teaching Hours |
| 8 Hours |

| Module – 2 | Teaching Hours |
| 8 Hours |

| Module – 3 | Teaching Hours |
| 8 Hours |

| Module – 4 | Teaching Hours |
| 8 Hours |

| Module – 5 | Teaching Hours |
| Interprocess Communication : Overview of IPC Methods, Pipes, popen, pclose Functions, Coprocesses, FIFOs, System V IPC, Message Queues, Semaphores. |
| 8 Hours |
### Course outcomes:
The students should be able to:
- Ability to understand and reason out the working of Unix Systems
- Build an application/service over a Unix system.

### Question paper pattern:
The question paper will have ten questions. There will be 2 questions from each module. Each question will have questions covering all the topics under a module. The students will have to answer 5 full questions, selecting one full question from each module.

### Text Books:

### Reference Books: