

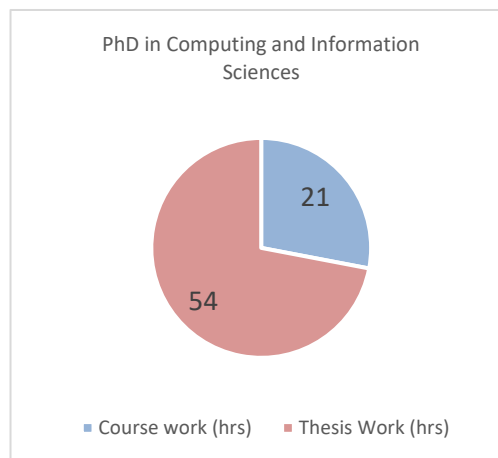
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## Doctor of Philosophy in Computing and Information Sciences

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### Program Components

| Course Type                       | CRD |
|-----------------------------------|-----|
| University Requirement (UR)       |     |
| College Requirement (CR)          |     |
| General Studies Compulsory (GSCC) |     |
| Major Requirement (MR)            | 75  |
| Major Elective (ME)               |     |
| General Studies Elective (GSE)    |     |
| Training (Internship)             |     |
| Total Credit (CRD)                | 75  |



## Detailed Study Plan

### Year 1 - Semester 1

| Course Code | Course Title          | Course Hours |      |     | Course Type | Pre requisite | Major GPA |
|-------------|-----------------------|--------------|------|-----|-------------|---------------|-----------|
|             |                       | LEC          | PRAC | CRD |             |               |           |
| ITCIS791    | Research Methods      | 3            | 0    | 3   | MR          | NONE          | YES       |
| ITCIS792    | Statistics Techniques | 3            | 0    | 3   | MR          | NONE          | YES       |
| ITCIS714    | Advanced Topics in AI | 3            | 0    | 3   | MR          | NONE          | YES       |

### Year 1 - Semester 2

| Course Code | Course Title  | Course Hours |      |     | Course Type | Pre requisite | Major GPA |
|-------------|---|--------------|------|-----|-------------|---------------|-----------|
|             |   | LEC          | PRAC | CRD |             |               |           |
| ITCIS715    | Advanced Topics in Applied Computing and Information Sciences     | 3            | 0    | 3   | MR          | NONE          | YES       |
| ITCIS716    | Advanced Topics in Theoretical Computing and Information Sciences | 3            | 0    | 3   | MR          | NONE          | YES       |
| ITCIS793    | Graduate Seminar  | 3            | 0    | 3   | MR          | NONE          | YES       |

### Year 2 - Semester 3

| Course Code | Course Title   | Course Hours |      |     | Course Type | Pre requisite   | Major GPA |
|-------------|--|--------------|------|-----|-------------|-----------------|-----------|
|             |  | LEC          | PRAC | CRD |             |                 |           |
| ITCIS717    | Selected Advanced Topics in Computing and Information Sciences | 3            | 0    | 3   | MR          | NONE            | YES       |
| ITCIS795    | PhD Thesis I   | -            | 18   | 6   | MR          | Pass 18 credits | YES       |

### Year 2 - Semester 4

| Course Code | Course Title  | Course Hours |      |     | Course Type | Pre requisite | Major GPA |
|-------------|---------------|--------------|------|-----|-------------|---------------|-----------|
|             |               | LEC          | PRAC | CRD |             |               |           |
| ITCIS796    | PhD Thesis II | 0            | 36   | 12  | MR          | ITCIS795      | YES       |

### Year 3 - Semester 5

| Course Code | Course Title   | Course Hours |      |     | Course Type | Pre requisite | Major GPA |
|-------------|----------------|--------------|------|-----|-------------|---------------|-----------|
|             |                | LEC          | PRAC | CRD |             |               |           |
| ITCIS797    | PhD Thesis III | 0            | 36   | 12  | MR          | ITCIS796      | YES       |

### Year 3 - Semester 6

| Course Code | Course Title  | Course Hours |      |     | Course Type | Pre requisite | Major GPA |
|-------------|---------------|--------------|------|-----|-------------|---------------|-----------|
|             |               | LEC          | PRAC | CRD |             |               |           |
| ITCIS798    | PhD Thesis IV | 0            | 36   | 12  | MR          | ITCIS797      | YES       |

### Year 4 - Semester 7

| Course Code | Course Title | Course Hours |      |     | Course Type | Pre requisite | Major GPA |
|-------------|--------------|--------------|------|-----|-------------|---------------|-----------|
|             |              | LEC          | PRAC | CRD |             |               |           |
| ITCIS799    | PhD Thesis V | 0            | 36   | 12  | MR          | ITCIS798      | YES       |

## Course Description

**Course Code:** ITCIS 714

**Course Title:** Advanced Topics in AI

This course explores cutting-edge research and developments in the field of AI. This course delves into advanced theories, methodologies, and applications of AI, providing a comprehensive understanding of the latest trends and challenges in the discipline.

**Course Code:** ITCIS 715

**Course Title:** Advanced Topics in Applied Computing and Information Sciences

This course covers topics related to the following areas: Distributed Systems, Advanced Computer Architecture, Parallel Computing, Advanced Computer Networking and Communications, Computer and Network Security, Cybersecurity, Advanced Software Engineering, Quantum Computing.

**Course Code:** ITCIS 716

**Course Title:** Advanced Topics in Theoretical Computing and Information Sciences

This course covers topics related to the following areas: Formal Methods in Software Development, Advanced Design and Analysis of Algorithms, Algorithmic Graph Theory, Logic in Computability Theory, Optimization Techniques.

**Course Code:** ITCIS 717

**Course Title:** Selected Advanced Topics in Computing and Information Sciences

This course covers any advanced level course proposed by the instructor and gets approval from the department committee.

**Course Code:** ITCIS 791

**Course Title:** Research Methods

This course provides an in-depth exploration of advanced research methodologies and techniques. It includes qualitative and quantitative research designs, data collection and analysis methods, statistical techniques, experimental design, survey methods, case study approaches, mixed-methods research, data visualization, and ethical considerations in research.

**Course Code:** ITCIS 792

**Course Title:** Statistics Techniques

This course provides an advanced understanding of statistical methods and their applications in computational research. The course includes probability theory, hypothesis testing, regression analysis, multivariate analysis, Bayesian statistics, time series analysis, non-parametric methods, statistical computing, and data visualization techniques.

**Course Code:** ITCIS 793

**Course Title:** Graduate Seminar

This course provides a platform for PhD students to present and discuss their research work, engage with contemporary issues in their field, and receive constructive feedback from peers and faculty. The course includes research presentations, guest lectures from experts, critical analysis of current literature, collaborative discussions, and the development of a research proposal for the thesis.

**Course Code:** ITCIS 795

**Course Title:** PhD Thesis I

This course is a research-focused requirement where it focuses on independent, original research under faculty supervision. It involves identifying a research problem, reviewing literature, designing methodology, collecting and analyzing data, and presenting findings in a formal thesis.

**Course Code:** ITCIS 796

**Course Title:** PhD Thesis II

This course is a research-focused requirement where it focuses on independent, original research under faculty supervision. It involves identifying a research problem, reviewing literature, designing methodology, collecting and analyzing data, and presenting findings in a formal thesis.

**Course Code:** ITCIS 797

**Course Title:** PhD Thesis III

This course is a research-focused requirement where it focuses on independent, original research under faculty supervision. It involves identifying a research problem, reviewing literature, designing methodology, collecting and analyzing data, and presenting findings in a formal thesis.

**Course Code:** ITCIS 798

**Course Title:** PhD Thesis IV

This course is a research-focused requirement where it focuses on independent, original research under faculty supervision. It involves identifying a research problem, reviewing literature, designing methodology, collecting and analyzing data, and presenting findings in a formal thesis.

**Course Code:** ITCIS 799

**Course Title:** PhD Thesis V

This course is a research-focused requirement where it focuses on independent, original research under faculty supervision. It involves identifying a research problem, reviewing literature, designing methodology, collecting and analyzing data, and presenting findings in a formal thesis.