# NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA, G.B. NAGAR

## (AN AUTONOMOUS INSTITUTE)



**Affiliated to**

**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH, LUCKNOW**



## Evaluation Scheme & Syllabus

For

### Master of Integrated Technology

### Computer Science & Engineering

### Fifth Year

**(Effective from the Session: 2024-25)**

**NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY, GREATER NOIDA, GAUTAM BUDDH NAGAR**
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## Master of Integrated Technology
# Computer Science & Engineering

## Evaluation Scheme
### SEMESTER- IX

| Sl. No. | Subject Codes | Subject | Types of Subject | Periods | | | Evaluation Schemes | | | | End Semester | | Total | Credit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | CT | TA | TOTAL | PS | TE | PE | | |
| | | | | | | | | | | | | | | |
| | | | | **3 WEEKS COMPULSORY INDUCTION PROGRAM** | | | | | | | | | | |
| 1 | AMICSE0901 | Research Process & Methodology | Mandatory | 3 | 0 | 0 | 30 | 20 | 50 | | 100 | | 150 | 3 |
| 2 | | Open Elective -IV | Open Elective | 2 | 0 | 0 | 30 | 20 | 50 | | 100 | | 150 | 2 |
| 3 | AMICSE0959 | Dissertation-I | Mandatory | 0 | 0 | 18 | | | | 100 | | 300 | 400 | 9 |
| 4 | | *Massive Open Online Courses (For B.Tech. Hons. Degree) | *MOOCs | | | | | | | | | | | |
| | | **TOTAL** | | | | | | | | | | | **700** | **14** |

| Sr. No. | Subject Code | Course Name | University / Industry Partner Name | No of Hours | Credits |
|---------|--------------|-------------|-----------------------------------|-------------|---------|
| 1 | AMC0325 | Kanban In Practice | Infosys Wingspan (Infosys Springboard) | 24h | 1.5 |

## List of open Elective IV

| Sr. No. | Subject Code | Name of Open Elective Subjects | Subject offered to Program | Types of Subject | Semester |
|---------|--------------|-------------------------------|---------------------------|------------------|----------|
| 1 | | Total Quality Management | All Programs | | 9 |
| 2 | AOE0962 | Food Nutrition for Healthy Living | All Programs except BT | Open Elective | 9 |
| 3 | AOE0966 | Sustainable Technologies | ALL the Programs | Open Elective | 9 |
| 4 | | Industry 4.0 | All Programs except ME | | 9 |

**Abbreviation Used:**

L: Lecture, T: Tutorial, P: Practical, CT: Class Test, TA: Teacher Assessment, PS: Practical Sessional, TE: Theory End Semester Exam., PE: Practical End Semester Exam, CE: Core Elective,OE:Open Elective, DE: Departmental Elective, CA: Compulsory Audit, MOOCs: Massive Open Online Courses.

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## Master of Integrated Technology
# Computer Science & Engineering

## Evaluation Scheme
### SEMESTER- X

| Sr. No. | Subject Codes | Subject | Types of Subject | Periods | | | Evaluation Schemes | | | End Semester | | | Total | Credit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | CT | TA | Total | PS | TE | PE | | |
| 1 | AMICSE1059 | Dissertation-II | Mandatory | 0 | 0 | 36 | | | | 200 | | 400 | 600 | 18 |
| 2 | | *Massive Open Online Courses (For B.Tech. Hons. Degree) | *MOOCs | | | | | | | | | | | |
| | | **TOTAL** | | | | | | | | | | | **600** | **18** |

**\* List of MOOCs Based Recommended Courses for Fifth year (Semester-X) M. Tech Int. Students**

| Sr. No. | Subject Code | Course Name | University / Industry Partner Name | No of Hours | Credits |
|---|---|---|---|---|---|
| 1 | AMC0326 | Salesforce Visualforce Pages | Infosys Wingspan (Infosys Springboard) | 22 h 45 m | 1.5 |

**Abbreviation Used:**

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A student will be eligible to get Under Graduate degree with Honours only, if he/she completes the additional MOOCs courses such as Coursera certifications, or any other online courses recommended by the Institute (Equivalent to 20 credits). During Complete B.Tech. Program Guidelines for credit calculations are as follows.

1. For 6 to 12 Hours =0.5 Credit
2. For 13 to18 =1 Credit
3. For 19 to 24 =1.5 Credit
4. For 25 to 30 =2 Credit
5. For 31 to 35 =2.5 Credit
6. For 36 to 41 =3 Credit
7. For 42 to 47 =3.5 Credit
8. For 48 and above =4 Credit

For registration to MOOCs Courses, the students shall follow Coursera registration details as per the assigned login and password by the Institute these courses may be cleared during the B. Tech degree program (as per the list provided). After successful completion of these MOOCs courses, the students shall provide their successful completion status/certificates to the Controller of Examination (COE) of the Institute through their coordinators/Mentors only.

The students shall be awarded Honours Degree as per following criterion.

i. If he / she secures 7.50 as above CGPA.
ii. Passed each subject of that degree program in the single attempt without any grace.
iii. Successful completion of MOOCs based 20 credits

| M. Tech Int. (CSE) FOURTH YEAR | |
|---|---|
| **Subject Code: AMICSE0901** | **L T P**<br>**3 0 0** |
| **Subject Name: Research Process and Methodology** | **Credits**<br>**3** |

**Course objective:** The course objective is to analyse the concept / fundamentals of research and apply research design methods to develop analysis and technical paper writing skills.

**Pre-requisites:** None

| | Course Contents / Syllabus | |
|---|---|---|
| **Unit-1** | **Introduction to Research**<br>Definition, objective and motivation of research, types and approaches of research, Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical, Research methods versus Methodology, significance of research, criteria of good research. Research Process. Conceptualization and formulation of research problems. | **8 Hours** |
| **Unit-2** | **Research Formulation and Design**<br>Research process and steps involved, Definition and necessity of research problem. Importance and objective of Literature review, locating relevant literature, Reliability of a source, writing a survey and identifying the research problem, Literature Survey, Research Design, Methods of research design. Defining the methodology: Deciding the units of analysis, Interpreting the findings. | **8 Hours** |
| **Unit-3** | **Data Collection**<br>Classification of Data accepts of method validation, Methods of Data Collection, Collection of primary and secondary data, sampling, need of sampling, sampling theory and Techniques, steps in sampling design, different types of sample designs, ethical considerations in research.<br>Data Interpretation: Descriptive statistics and inferential statistics | **8 Hours** |
| **Unit-4** | **Data Analysis**<br>Processing Operations, Data analysis, Types of analysis, Statistical techniques and choosing an appropriate statistical technique, Hypothesis Testing, Data processing software (e.g. SPSS etc.), statistical inference, Chi-Square Test, Analysis of variance (ANOVA) and covariance, Data Visualization – Monitoring Research Experiments.<br>Data processing software, Correlation and regression analysis – discriminate analysis – factor analysis – cluster analysis, measures of relationship. | **8 Hours** |
| **Unit-5** | **Technical Writing and Reporting of Research**<br>Types of research report: Dissertation and Thesis, research paper, review article, short communication, conference presentation etc., Referencing and referencing styles, Research Journals, Indexing, citation of Journals and Impact factor, Types of Indexing. Significance of conferences and their ranking, plagiarism, IPR- intellectual property rights and patent law, commercialization, copy right, royalty, trade related aspects of intellectual property rights (TRIPS); scholarly publishing- IMRAD concept and design of research paper. | **8 Hours** |

| **Course outcome:** After completion of this course students will be able to: | | |
|---|---|---|
| **CO1** | Understand the concept/ fundamentals of different types of research | K1 |
| **CO2** | Analyze relevant research design technique for research process | K3 |
| **CO3** | Apply appropriate Data Collection technique | K4 |
| **CO4** | Evaluate statistical analysis which includes various parametric test and non- parametric test | K4 |
| **CO5** | Create research paper and publish ethically | K4 |

**Textbooks:**

1. C. R. Kothari, Gaurav Garg, "Research Methodology Methods and Techniques", New Age International publishers,5th Edition, 2023.

2. Ranjit Kumar, Research Methodology: A Step-by-Step Guide for Beginners, SAGE Publication, 4th Edition, 2023.

3. Deepak Chawla, Neena Sondhi, Research Methodology, Vikas Publication,2nd Edition,2018.

**Reference Books:**

1. Donald Cooper & Pamela Schindler, Business Research Methods, TMGH, 12th edition, 2018.

2. Creswell, John W. Research design: Qualitative, quantitative, and mixed methods approach sage publications,5th Edition, 2018

**Links:**

| 1 | Research Paper "Review, analysis and classification of the literature on QFD—Types of research, Difficulties and benefits https://www.sciencedirect.com/science/article/abs/pii/S0925527308001138 Scholar.google.com (https://scholar.google.com/schhp?hl=en&as_sdt=0,5) Researchgate.net (https://www.researchgate.net/) Academia.edu (https://www.academia.edu/ |
|---|---|
| 2 | Miletus.Edu.uahttps://miletus.mnau.edu.ua/wp-content/uploads/2019/05/WP2_DEV-2.4.2_2.5.1-Research-methodology-course_PU.pdf Research Paper "Real-time data collection in Linux: A case study" https://link.springer.com/article/10.3758/bf03195362 |
| 3 | "A comparison of two data collecting methods: interviews and questionnaires". https://www.academia.edu/7607280/A_COMPARISON_OF_TWO_DATA_COLLECTING_METHODS_INTERVIEWS_AND_QUESTIONNAIRES "Guide to the Design of Questionnaires". https://nats-www.informatik.uni-hamburg.de/pub/User/InterculturalCommunication/top2.pdf |
| 4 | Software Used: Statistical Package of Social Sciences (SPSS) for statistical Analysis (https://www.ibm.com/products/spss-statistics), Konstanz Information Miner (KNIME) for Data Analytics  https://www.knime.com/ Tableau for Visualization (https://www.tableau.com/). |
| 5 | Research Paper "A Guide to Writing the Dissertation Literature Review" https://scholarworks.umass.edu/pare/vol14/iss1/13/ Research Paper "Academic Writing Guide" https://www.vsm.sk/Curriculum/academicsupport/academicwritingguide.pdf |