Bachelor of Computer Applications (Honours with Research) with Industry-Oriented Specialisation in Artificial Intelligence and Machine Learning Curriculum

| 2 | Semester I | | | | | |
|--|--|---|---|---|--|---|
| 2 | Name of the Course | L | T | P | S | С |
| | Mathematics for Computing | 3 | 0 | 0 | 0 | 3 |
| | Computer System Organisation | 3 | 0 | 0 | 0 | 3 |
| 3 | Programming for Problem Solving | 3 | 0 | 1 | 1 | 5 |
| | Office Automation Tools | 3 | 0 | 1 | 0 | 4 |
| | Business Communication & Report Writing | 3 | 0 | 0 | 0 | 3 |
| | Total Credits | 15 | 0 | 2 | 1 | 18 |
| SN | Semester II Name of the Course | L | Т | P | S | С |
| | Discrete Mathematics | 3 | 0 | 0 | 0 | 3 |
| | First Aid & Health | 3 | 0 | 0 | 0 | 3 |
| | Data Structures | 3 | 0 | 1 | 0 | 4 |
| 4 | Object Oriented Programming using C++ | 3 | 0 | 1 | 1 | 5 |
| 5 | Database Management Systems | 3 | 0 | 1 | 0 | 4 |
| 6 | Web Design | 3 | 0 | 1 | 0 | 4 |
| | Total Credits | 18 | 0 | 4 | 1 | 23 |
| CNI | Semester III | T | T | n | C | C |
| SN 1 | Name of the Course | <u>L</u> | T | P 0 | S | C |
| | Computer Networks Operating Systems | 3 | 0 | 1 | 0 | 4 |
| | Full Stack Development using React & Node.js | 3 | 0 | 1 | 0 | 4 |
| | Entrepreneurship/ E-Business (MOOC) | 3 | 0 | 0 | 0 | 3 |
| | Java Programming | 3 | 0 | 1 | 1 | 5 |
| | ML Tools and Platforms | 3 | 0 | 1 | 0 | 4 |
| | Total Credits | 18 | 0 | 3 | 1 | 23 |
| Semester IV | | | | | | |
| | Name of the Course | L | T | P | S | C |
| | Python Programming | 3 | 0 | 1 | 0 | 4 |
| | Machine Learning | 3 | 0 | 1 | 1 | 5 |
| | Mobile Application Development | 3 | 0 | 0 | 1 | 5 |
| | Environmental Studies/ Understanding India/Cognitive Computing Natural Language Processing | 3 | 0 | 1 | 0 | 3 |
| | Total Credits | 15 | 0 | 4 | 2 | 21 |
| | Semester V | 10 | Ū | | _ | |
| SN | Name of the Course | L | Т | P | S | С |
| 1 | Design and Analysis of Algorithms | 3 | 0 | 1 | 0 | 4 |
| 2 | Software Engineering and Testing | 3 | 0 | 0 | 0 | 3 |
| 3 | Deep Learning | 3 | 0 | 1 | 0 | 4 |
| | Professional Readiness | 0 | 0 | 2 | 0 | 2 |
| | | | | _ | | 2 |
| | Minor Project | 0 | 0 | 0 | 5 | 5 |
| 6 | Internship | 0 | 0 | 0 | 5 | 5 5 |
| 6 | Internship Total Credits | _ | 0 | 0 | 5 | 5 |
| 6 | Internship Total Credits Semester VI | 0 9 | 0 0 | 0 0 4 | 5 5 10 | 5 5 23 |
| 6 SN | Internship Total Credits | 0 | 0 | 0 | 5 | 5 5 |
| 6 SN 1 | Internship Total Credits Semester VI Name of the Course | 0 9 L | 0 0 0 | 0 0 4 P | 5 5 10 S | 5 5 23 C |
| 5N 1 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII | 0 9 L 0 | 0 0 0 | 0 0 4 P 0 | 5 5 10 8 15 | 5 5 23 C 15 |
| 6 SN 1 SN | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course | 0 9 L 0 0 | 0 0 0 T 0 | 0 0 4 P 0 0 | 5 5 10 8 15 15 | 5 5 23 C 15 15 |
| 5N 1 SN 1 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology | 0 9 L 0 0 | 0 0 0 T 0 0 | 0 0 4 P 0 0 | 5 5 10 8 15 15 15 | 5 5 23 C 15 15 C 3 |
| SN 1 1 2 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques | 0 9 L 0 0 | 0 0 0 0 0 0 | 0 0 4 P 0 0 | 5 5 10 8 15 15 15 0 0 | 5 5 23 C 15 15 2 3 |
| SN 1 2 3 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms | 0 9 L 0 0 | 0 0 0 T 0 0 | 0 0 4 P 0 0 | 5 5 10 8 15 15 15 0 0 | 5 5 23 C 15 15 15 3 4 |
| SN 1 2 3 4 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics | 0 9 L 0 0 | 0 0 0 0 0 0 | 0 0 4 P 0 0 | 5 5 10 8 15 15 15 0 0 0 | 5 5 23 C 15 15 C 3 3 4 2 |
| SN 1 2 3 4 5 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms | 0 9 L 0 0 L 3 3 3 | 0 0 0 0 0 0 0 | 0 0 4 P 0 0 0 | 5 5 10 8 15 15 15 0 0 | 5 5 23 C 15 15 15 3 4 |
| SN 1 2 3 4 5 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I | 0 9 L 0 0 1 3 3 3 2 0 | 0 0 0 0 0 0 0 | 0 0 4 P 0 0 0 | 5 5 10 8 15 15 15 0 0 0 0 8 | 5 5 23 C 15 15 15 C 3 3 4 2 8 |
| SN 1 2 3 4 5 SN | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course | 0 9 L 0 0 L 3 3 3 2 0 11 | 0 0 0 0 0 0 0 0 0 0 0 | 0 0 4 P 0 0 0 1 0 0 | 5 5 10 8 15 15 15 0 0 0 0 8 8 | 5 5 23 C 15 15 15 2 3 3 4 4 2 8 20 |
| SN 1 2 3 4 5 5 SN 1 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium | 0 9 L 0 0 L 3 3 3 2 0 11 | 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 0 0 1 1 P 0 0 | \$ 15 15 0 0 0 0 8 8 8 \$ 5 | 5 5 23 C 15 15 C 3 3 4 2 8 20 |
| SN 1 2 3 4 5 5 SN 1 2 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) | L 0 0 0 111 L 0 0 | 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 4 P 0 0 0 1 1 0 0 | \$ 15 15 S 0 0 0 0 8 8 8 S 5 15 | 5 5 23 C 15 15 C 3 3 4 2 8 20 |
| SN 1 2 3 4 5 5 SN 1 2 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits | 0 9 L 0 0 L 3 3 3 2 0 11 | 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 0 0 1 1 P 0 0 | \$ 15 15 0 0 0 0 8 8 8 \$ 5 | 5 5 23 C 15 15 C 3 3 4 2 8 20 |
| SN 1 2 3 4 5 SN 1 2 2 3 4 5 5 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket | L 0 0 0 L 3 3 3 2 0 11 L 0 0 | 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 4 4 P 0 0 0 0 1 0 0 1 P 0 0 0 | 5 5 10 8 15 15 15 0 0 0 0 8 8 8 | 5 5 5 23 C 15 15 15 2 8 20 C C 3 3 4 2 8 20 C 5 5 15 15 15 15 15 15 15 15 15 15 15 15 |
| SN 1 2 3 4 5 5 SN 1 2 2 SN 1 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course | L 0 0 0 111 L 0 0 0 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P P O O O O O O O O O O O O O O O O O O | 5 5 10 8 15 15 0 0 0 0 8 8 8 5 15 15 | 5 5 5 23 C 15 15 15 2 8 20 C C 3 3 4 2 8 20 C C C C C C C C C C C C C C C C C C |
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| SN 1 2 3 4 5 5 SN 1 2 2 SN 1 2 S | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course Business Communication & Report Writing First Aid & Health | L 0 0 0 1 L 3 3 2 0 11 L 0 0 0 L 3 3 3 3 2 0 11 L 3 3 3 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 P 0 0 0 P P 0 0 0 0 0 0 0 0 | \$ 15 15 0 0 0 8 8 8 \$ 5 15 20 0 0 0 | 5 5 5 23 C 15 15 15 2 8 20 C 5 15 15 2 0 C 3 3 3 4 2 2 5 1 5 2 0 1 5 1 5 2 0 1 5 1 5 2 0 1 5 2 0 1 5 2 0 1 5 2 0 1 5 2 0 1 5 2 0 2 0 1 0 1 |
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| SN 1 2 3 4 5 SN 1 2 SN 1 5 SN | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course Business Communication & Report Writing First Aid & Health Food Nutrition & Hygiene | L 3 3 2 0 111 L 0 0 0 L 3 3 3 3 3 3 3 3 3 3 3 | T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 P 0 0 0 0 0 0 0 0 0 0 0 | \$ 15 15 0 0 0 0 8 8 8 \$ 5 15 20 0 0 0 0 0 0 | 5 5 5 23 C 15 15 2 8 20 C 5 15 20 C 5 15 20 |
| SN 1 2 3 4 5 5 6 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course Business Communication & Report Writing First Aid & Health Food Nutrition & Hygiene NCC/NSS Human Values | L 3 3 2 0 111 L 0 0 0 L 3 3 3 3 3 3 3 3 3 3 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | \$ 15 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 5 5 5 23 C 15 15 2 8 20 C 5 15 20 C 3 3 3 4 2 2 8 20 C 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 |
| SN 1 2 3 4 5 5 6 7 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course Business Communication & Report Writing First Aid & Health Food Nutrition & Hygiene NCC/NSS Human Values Yoga & Meditation | 0 9 0 0 11 L 3 3 3 2 0 111 L 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 | \$ 15 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 5 5 5 23 C 15 15 2 8 20 C 5 15 20 C 3 3 3 4 2 2 8 20 C 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 |
| SN 1 2 3 4 5 5 6 7 7 8 9 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course Business Communication & Report Writing First Aid & Health Food Nutrition & Hygiene NCC/NSS Human Values Yoga & Meditation Entrepreneurship (MOOC) E-Business (MOOC) Understanding India | L 0 0 0 11 L 3 3 3 2 0 11 L 0 0 0 0 0 11 3 3 3 3 3 3 3 3 3 3 3 3 3 | T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | \$ 15 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 5 5 5 23 C 15 15 2 8 20 C 5 15 20 C 3 3 3 4 2 8 20 C 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 |
| SN 1 2 3 4 5 5 6 7 7 8 9 10 | Internship Total Credits Semester VI Name of the Course Capstone Project Total Credits Semester VII Name of the Course Research Methodology Optimization Techniques Advanced Data Structures and Algorithms Responsible AI & Tech Ethics Research Project-I Total Credits Semester VIII Name of the Course Colloquium Research Project -II (Scopus Indexed Research Paper) Total Credits Open Elective Basket Name of the Course Business Communication & Report Writing First Aid & Health Food Nutrition & Hygiene NCC/NSS Human Values Yoga & Meditation Entrepreneurship (MOOC) E-Business (MOOC) | L 3 3 2 0 111 L 0 0 0 L 3 3 3 3 3 3 3 3 3 3 3 3 3 | T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | P 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | \$ 15 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 5 5 5 23 C 15 15 2 8 20 C 5 15 20 C 3 3 3 4 2 2 8 20 C 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 |