# Curricula for MS in Farm Structure

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| **October-March (Winter) Semester** |
| **Compulsory Courses**  (9 Credits) | **Credits** |
| FS 501 Soil Engineering  | 2 |
| FS 503 Farmstead Planning and Design | 2 |
| FS 505 Environmental Pollution and Control | 2 |
| CSM 533 Engineering Mathematics | 3 |
| **Elective Courses** (4 Credits) |  |
| FS 515 Hydraulic and Foundation Structure  | 2 |
| FS 517 Construction Management  | 2 |
| FS 519 Wastewater Engineering Design  | 2 |
| FS 521 Lineal and Neural Analysis | 2 |
| FS 523 Water Supply and Sanitation  | 2 |
| FS 502 Research work (3 Credits) |  3 (S/U) |
| Total Credit  | 16 |
| **April-September (Summer) Semester** |
| Compulsory Courses (8 Credits) | **Credits** |
| FS 507 Concrete Technology  | 2 |
| FS 509 Agricultural Waste Management  | 2 |
| FS 511 Greenhouse Principles and Design | 2 |
| FS 513 Research Methodology and Analysis | 2 |
| **Elective Courses**  (4 Credits) |  |
| FS 525 Packaging and Storage Engineering  | 2 |
| FS 527 Industrial Waste Management  | 2 |
| FS 529 Rural Infrastructure Development  | 2 |
| FS 531 Structural Analysis and Computation  | 2 |
| FS 533 Timber Technology | 2 |
| FS 502 Research work (3 Credits) |  3 (S/U) |
| **Total Credit**  | 15 |
| **Thesis Semester** |
| FS 502 Research Work (2 Credits)FS 504 Evaluation of Thesis (5 Credits)FS 506 Thesis Defense (3 Credits) |  2 (S/U)53 |
| **Total Credits**  | 10 |
| GRAND TOTAL  | 41 |

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| Odd Number= Theory  | Even Number = Practical |
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# Curricula for MS in Farm Power and Machinery

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| **October-March (Winter) Semester** |
| **Compulsory Courses**  (8 Credits) | **Credits** |
| FPM 501 Farm Power  | 3 |
| FPM 503 Bio-resources Engineering  | 2 |
| CSM533 Engineering Mathematics | 3 |
| **Elective Courses** (4 Credits) |  |
| FPM 511 Equipment and Implement Design | 2 |
| FPM 513 Renewable Energy systems  | 2 |
| FPM 515 Operation Research  | 2 |
| FPM 517 Greenhouse Technology  | 2 |
| FPM 519 Agricultural Machinery Testing Evaluation and Maintenance  | 2 |
| FPM 521 Modeling of Bio-systems  | 2 |
| FPM 502 Research work (3 Credits) |  3 (S/U) |
| Total Credit  | 15 |
| **April-September (Summer) Semester** |
| Compulsory Courses (8 Credits) | **Credits** |
| FPM 505 Farm Machinery  | 3 |
| FPM 507 Instrumentation and Research Design | 2 |
| FPM 509 Advanced Agricultural Process Engineering  | 3 |
| **Elective Courses**  (4 Credits) |  |
| FPM 523 Agricultural Systems Engineering | 2 |
| FPM 525 Plant Protection Mach. and Equipment  | 2 |
| FPM 527 Soil Implements Mechanics | 2 |
| FPM 529 Computational Fluid Dynamics | 2 |
| CSM 561 Computer Programming and Application | 2 |
| IWM 531 Irrigation System Evaluation | 2 |
| Stat 543 Engineering Statistics | 2 |
| FPM 502 Research work (3 Credits) |  3 (S/U) |
| **Total Credit**  | 15 |
| **Thesis Semester** |
| FPM 502 Research Work (2 Credits)FPM 504 Evaluation of Thesis (5 Credits)FPM 506 Thesis Defense (3 Credits) |  2 (S/U)53 |
| **Total Credits**  | 10 |
| GRAND TOTAL  | 40 |

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**Curricula for MS in** **Irrigation and Water Management**

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| **October-March (Winter) Semester** |
| **Compulsory Courses**  (9 Credits) | **Credits** |
| IWM 501 Irrigation System Design | 2 |
| IWM 503 Surface Water Hydrology | 2 |
| IWM 505 Economics of Water Resources Projects | 2 |
| CSM 537 Mathematics for Water Engineering | 3 |
| **Elective Courses** (4 Credits) |  |
| IWM 515 Soil−Water−Plant Relationship | 2 |
| IWM 517 River Engineering and Flood Management | 2 |
| IWM 519 Hydraulic Design | 2 |
| IWM 521 Flow and Transport Through Porous Media | 2 |
| IWM 523 Water and Environment | 2 |
| IWM 525 GIS in Water Resources | 2 |
| CSM 561 Computer Programming and Application | 2 |
| IWM 502 Research work (3 Credits) |  3 (S/U) |
| Total Credit  | 16 |
| **April-September (Summer) Semester** |
| Compulsory Courses (8 Credits) | **Credits** |
| IWM 507 Drainage Engineering | 2 |
| IWM 509 Groundwater Development | 2 |
| IWM 511 Open Channel Flow | 2 |
| IWM 513 Irrigation System Planning and Management | 2 |
| **Elective Courses**  (4 Credits) |  |
| IWM 527 Crop Climatology | 2 |
| IWM 529 Water Resources Planning  | 2 |
| IWM 531 Irrigation System Evaluation | 2 |
| IWM 533 Watershed Management | 2 |
| IWM 535 Statistical Hydrology | 2 |
| SS 521 Soil, Plant and Water Analysis | 2 |
| IWM 502 Research work (3 Credits) |  3 (S/U) |
| **Total Credit**  | 15 |
| **Thesis Semester** |
| IWM 502 Research Work (2 Credits)IWM 504 Evaluation of Thesis (5 Credits)IWM 506 Thesis Defense (3 Credits) |  2 (S/U)53 |
| **Total Credits**  | 10 |
| GRAND TOTAL  | 41 |

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# Curricula for MS in Food Engineering

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| **October-March (Winter) Semester** |
| **Compulsory Courses**  (8 Credits) | **Credits** |
| FTRI 501 Advanced Dairy Engineering | 2 |
| FTRI 503 Advanced Food and Industrial Microbiology | 2 |
| FTRI 505 Reaction Kinetics and Reactor Design | 2 |
| FTRI 502 Food Process Engineering Laboratory | 2 |
| **Elective Courses** (4 Credits) |  |
| FTRI 515 Technology of Cereal Products | 2 |
| FTRI 517 Technology of Fruits and Vegetable Products | 2 |
| FTRI 519 Novel Food Processing Technique | 2 |
| FTRI 521 Fermentation and Food Biotechnology  | 2 |
| FTRI 523 Computation and Modeling in Food Industry | 2 |
| FTRI 525 Food Machinery Design | 2 |
| FTRI 504 Research work (3 Credits) |  3 (S/U) |
| Total Credit  | 15 |
| **April-September (Summer) Semester** |
| Compulsory Courses (8 Credits) | **Credits** |
| FTRI 507 Advanced Unit Operations in Process and Food Engineering | 2 |
| FTRI 509 Thermal Processing and Freezing of Food  | 2 |
| FTRI 511 Food Quality Assurance and Safety | 2 |
| FTRI 513 Advanced Food Chemistry and Nutrient Technology | 2 |
| **Elective Courses**  (4 Credits) |  |
| FTRI 527 Technology of Animal Products | 2 |
| FTRI 529 Organic Food Production and Processing | 2 |
| FTRI 531 Food Additives and Toxicology | 2 |
| FTRI 533 Food Industry Wastes Management  | 2 |
| FTRI 504 Research work (3 Credits) |  3 (S/U) |
| **Total Credit**  | 15 |
| **Thesis Semester** |
| FTRI 504 Research Work (2 Credits)FTRI 506 Evaluation of Thesis (5 Credits)FTRI 508 Thesis Defense (3 Credits) |  2 (S/U)53 |
| **Total Credits**  | 10 |
| GRAND TOTAL  | 40 |

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# Curricula for MS in Food Technology

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| **October-March (Winter) Semester** |
| **Compulsory Courses**  (8 Credits) | **Credits** |
| FTRI 535 Food Science | 2 |
| FTRI 537 Food Plant Design and Management | 2 |
| FTRI 539 Food Quality Control and Packaging | 2 |
| FTRI 541 Food Chemistry and Nutrition | 2 |
| **Elective Courses** (4 Credits) |  |
| FTRI 549 Sugar Engineering and Technology | 2 |
| FTRI 551 Dairy Engineering | 2 |
| FTRI 517 Technology of Fruits and Vegetable Products  | 2 |
| CSM 533 Engineering Mathematics | 2 |
| FTRI 512 Research work (3 Credits) |  3 (S/U) |
| Total Credit  | 15 |
| **April-September (Summer) Semester** |
| Compulsory Courses (8 Credits) | **Credits** |
| FTRI 543 Technology 0f Food Products | 2 |
| FTRI 545 Food Engineering | 2 |
| FTRI 547 Food Microbiology  | 2 |
| FTRI 510 Food Process Laboratory | 2 |
| **Elective Courses**  (4 Credits) |  |
| FTRI 515 Technology of Cereal Products | 2 |
| FTRI 527 Technology of Animal Products | 2 |
| FTRI 553 Technology of Plant Products | 2 |
| FTRI 555 Food Biotechnology  | 2 |
| Stat 543 Engineering Statistics | 2 |
| CSM 561 Computer Programming and Application | 2 |
| FTRI 512 Research work (3 Credits) |  3 (S/U) |
| **Total Credit**  | 15 |
| **Thesis Semester** |
| FTRI 512 Research Work (2 Credits)FTRI 514 Evaluation of Thesis (5 Credits)FTRI 516 Thesis Defense (3 Credits) |  2 (S/U)53 |
| **Total Credits**  | 10 |
| GRAND TOTAL  | 40 |

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# Curricula for MS in Computer Science

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| **October-March (Winter) Semester** |
| **Compulsory Courses**  (8 Credits) | **Credits** |
| CSM 501 Structured Programming Language | 3 |
| CSM 503 Advanced Database Systems | 3 |
| CSM 505 Discrete Mathematics | 2 |
| **Elective Courses** (4 Credits) |  |
| CSM 513 Mathematical Analysis for Computer Science | 2 |
| CSM 515 Numerical Methods | 2 |
| CSM 517 Computer Arithmetic | 2 |
| CSM 519 Advanced Artificial Intelligent | 2 |
| CSM 521 Symbolic Machine Learning – I | 2 |
| CSM 523 Advanced Syntactic Pattern Recognition | 2 |
| CSM 525 Data Mining | 2 |
| CSM 527 Computer Communication and Networks | 2 |
| CSM 529 Multimedia Systems | 2 |
| CSM 531 Project Management | 2 |
| CSM 533 Engineering Mathematics\* | 3 |
| CSM 535 Computer Application\* | 2 |
| CSM 537 Mathematics for Water Engineering\* | 3 |
| CSM 502 Research work (3 Credits) |  3 (S/U) |
| Total Credit  | 15 |
| **April-September (Summer) Semester** |
| Compulsory Courses (8 Credits) | **Credits** |
| CSM 507 Computer Graphics and Animation | 3 |
| CSM 509 Advanced Data Structures and Algorithms | 3 |
| CSM 511 Graph Theory | 2 |
| **Elective Courses**  (4 Credits) |  |
| CSM 539 Simulation and Modeling | 2 |
| CSM 541 Symbolic Machine Learning – II | 2 |
| CSM 543 Speech Recognition | 2 |
| CSM 545 Machine Translation | 2 |
| CSM 547 Distributed Computing Systems | 2 |
| CSM 549 Elements of Cryptography | 2 |
| CSM 551 Computational Geometry | 2 |
| CSM 553 Mathematical Programming | 2 |
| CSM 555 Neural Networks | 2 |
| CSM 557 Petri Net Theory and Modeling of System | 2 |
| CSM 559 Fuzzy System | 2 |
| CSM 561 Computer Programming and Application\* | 2 |
| CSM 502 Research work (3 Credits) |  3 (S/U) |
| **Total Credit**  | 15 |
| **Thesis Semester** |
| CSM 502 Research Work (2 Credits)CSM 504 Evaluation of Thesis (5 Credits)CSM 506 Thesis Defense (3 Credits) |  2 (S/U)53 |
| **Total Credits**  | 10 |
| GRAND TOTAL  | 40 |

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 Note: \* Mark indicates course for other departments