**P. D. E. A’s.**

**Prof. Ramkrishna More College, Akurdi, Pune 411044**

**Post Graduate Course Framework under Autonomy as per NEP-2020 With M. Voc. Software Development**

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| **Sem.** | **Major Courses** | **Major Elective**  **Courses** | **Minor**  **Courses** | **VSC** | **IKS** | **FP/OJT/CEP** | **GE/O**  **E** | **SEC** | **AEC** | **VEC** | **CC** | **Total**  **Credits** |
| **M. Voc. Software Development -I** | | | | | | | | | | | | |
| I | MVMAT-511  MVMAT-512  MVMAT-513  MVMAT-514  MVMAT-515  MVMAP-516  MVMAP-517 | MVMET-511A  MVMEP-511A  Or  MVMET-511B  MVMEP-511B | MVRMT-511  Research Methodology  (4 Credits Course) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | PGHR-511  Human Rights-I | 22 |
| II | MVMAT-521  MVMAT-522  MVMAT-523  MVMAT-524  MVMAT-525  MVMAP-526  MVMAP-527 | MVMET-521A  MVMEP-521A  Or  MVMET-521B  MVMEP-521B | 0 | 0 | 0 | MVOJP-521  On Job Training (4 Credit) | 0 | 0 | 0 | 0 | PGHR-521  Human Rights-II  / PGCST-521 Cyber Security | 22 |
| **M. Voc. Software Development -II** | | | | | | | | | | | | |
| III | MVMAT-631 MVMAT-632 MVMAT-633 MVMAP-634 MVMAP-635 | MVMET-631A MVMEP-631A  Or  MVMET-632B MVMEP-632B | 0 | 0 | 0 | MVRPP-631  Research Project (4 Credit) | 0 | PGSDT-631  Skill Development -I | 0 | 0 | 0 | 22 |
| IV | MVMAP-641 | MVMET-641A MVMEP-641A  Or  MVMET-642B MVMEP-642B | 0 | 0 | 0 | MVRPP-641  Research Project (6 Credit) | 0 | PGSDT-641  Skill Development -II | 0 | 0 | 0 | 22 |

**Codes, Generic Name and Titles of the Paper**

***Credit Framework for M. Voc. (Software Development) Part-I***

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| **Semester-I** | | | | |
| **Major Courses** | | | | |
| **Sr. No.** | **Major Courses** | **Course code** | **Title of the paper** | **Credits** |
| 1 | Major Theory Paper-1 | MVMAT-511 | Programming in Python | 2C-T |
| 2 | Major Theory Paper-2 | MVMAT-512 | Database Integration | 2C-T |
| 3 | Major Theory Paper-3 | MVMAT-513 | Software Engineering & SDLC | 2C-T |
| 4 | Major Theory Paper-4 | MVMAT-514 | Operating Systems & Shell Scripting | 2C-T |
| 5 | Major Theory Paper-5 | MVMAT-515 | Data Structures and Algorithms | 2C-T |
| 6 | Major Practical Paper-1 | MVMAP-516 | Python Lab | 2C-P |
| 7 | Major Practical Paper-2 | MVMAP-517 | Database Integration Lab | 2C-P |
| **Major Elective Courses** | | | | |
| 8 | Minor Theory Paper-1 | MVMET-511A | Web Development | 2C-T |
| Minor Theory Paper-2 | MVMET-512B | Computer Networks & Security | 2C-T |
| 9 | Minor Practical Paper-1 | MVMEP-511A | Mini Project - Web Development | 2C-P |
| Minor Practical Paper-2 | MVMEP-512B | Computer Networks Lab | 2C-P |
| **Minor Courses** | | | | |
| 10 | Research Methodology (RM) | MVRMT-511 | Research methodology | 4C-T |
| **CC** | | | | |
| 11 | Human Rights-I (HR-I) | PGHR-511 | Human Rights-I (HR-I) | 1C-T |
| **Semester-II** | | | | |
| **Major Courses** | | | | |
| **Sr. No.** | **Major/Elective paper** | **Course code** | **Title of the paper** | **credits** |
| 1 | Major Theory Paper-1 | MVMAT-521 | Statistical Methods using R | 2C-T |
| 2 | Major Theory Paper-2 | MVMAT-522 | Full-Stack Development (React & Node.js) | 2C-T |
| 3 | Major Theory Paper-3 | MVMAT-523 | Cloud Security & Compliance | 2C-T |
| 4 | Major Theory Paper-4 | MVMAT-524 | Entrepreneurship & Startup Ecosystem | 2C-T |
| 5 | Major Theory Paper-5 | MVMAT-525 | Artificial Intelligence & Neural Networks | 2C-T |
| 6 | Major Practical Paper-1 | MVMAP-526 | R Laboratory | 2C-P |
| 7 | Major Practical Paper-2 | MVMAP-527 | React & Node.js Lab | 2C-P |
| **Major Elective Courses** | | | | |
| 8 | Minor Theory Paper-1 | MVMET-521A | Java Programming | 2C-T |
| Minor Theory Paper-2 | MVMET -522B | Soft Computing | 2C-T |
| 9 | Minor Practical Paper-1 | MVMEP-521A | Java Lab | 2C-P |
| Minor Practical Paper-2 | MVMEP -522B | Soft Computing Laboratory and MOOC | 2C-P |
| **OJT** | | | | |
| 10 | On Job Training (OJT) | MVOJP-521 | On Job Training | 4C-P |
| **CC** | | | | |
| 11 | Human Rights-II (HR) | PGHR-521 | Human Rights-II (HR) | 1C-T |
| 12 | Cyber Security | PGCST-521 | Cyber Security | 2C-T |

**Codes, Generic Name and Titles of the Paper**

***Credit Framework for M. Voc. (Software Development) Part-II***

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| **Semester-III** | | | | |
| **Major Courses** | | | | |
| **Sr.**  **No.** | **Major Courses** | **Code** | **Major/Elective** | **credits** |
| 1 | Major Theory Paper-1 | MVMAT-631 | Mobile App Development (Android & Flutter) | 4C-T |
| 2 | Major Theory Paper-2 | MVMAT -632 | DevOps & CI/CD Pipeline | 4C-T |
| 3 | Major Theory Paper-3 | MVMAT -633 | Big Data & Analytics | 2C-T |
| 4 | Major Practical paper-1 | MVMAP-634 | Mobile App Development Lab | 2C-P |
| 5 | Major Practical paper-2 | MVMAP -635 | DevOps & Big Data Lab | 2C-P |
| **Major Elective** | | | | |
| 6 | Minor Theory Paper-1 | MVMET-631A | Internet of Things (IoT) | 2C-T |
| Minor Theory Paper-2 | MVMET -632B | Blockchain Technology | 2C-T |
| 7 | Minor Practical Paper-1 | MVMEP-631A | IoT Lab | 2C-P |
| Minor Practical Paper-2 | MVMEP -632B | Blockchain Technology Lab | 2C-P |
| **Research Project** | | | | |
| 8 | Research Project (RP)-1 | MVRPP-631 | Research Project-I | 4C-P |
| **Skill Development Course** | | | | |
| 9 | Skill Development -I | PGSDT-631 | Web Development: Skill Map-I | 2C-T |
| **Semester-IV** | | | | |
| **Major Compulsory** | | | | |
| 1 | Major Practical Paper-1 | MVMAP-641 | Full Time Industrial  Training / Institutional Project | 12C-P |
| **Major Elective** | | | | |
| 2 | Minor Theory Paper-1 | MVMET-641A | Digital Marketing & SEO | 2C-T |
| Minor Theory Paper-2 | MVMET -642B | Augmented Reality (AR) & Virtual Reality (VR) | 2C-T |
| 3 | Minor Practical paper-1 | MVMEP-641A | AR & VR Lab | 2C-P |
| Minor Practical paper-2 | MVMEP -642B | Digital Marketing & SEO Lab | 2C-P |
| **Research Project** | | | | |
| 4 | Research Project (RP)-2 | MVRPP-641 | Research Project | 6C-P |
| **Skill Development Course** | | | | |
| 5 | Skill Development -II | PGSDT-641 | Web Development: Skill Map-II | 2C-T |