**Outlook**

---

## M. Tech. Software Engineering | Elective Courses Preference for Specialization

---

**From** BITS WILP Pilani <communications@wilp.bits-pilani.ac.in>
**Date** Tue 2024-10-08 16:53
**To**     RHARMALKAR97@GMAIL.COM <RHARMALKAR97@GMAIL.COM>

Dear Student,

Greetings from BITS Pilani Work Integrated Learning Programmes (WILP) Division!

As you are aware, in your M.Tech. Software Engineering degree programme, we offer choices of courses for you to choose your specialization in line with your educational background and your company requirements.

Please find below the proposed set of core courses and elective courses for your programme. Please note that the Core Courses are compulsory while the other Elective Courses slots have options for you to select from the given set of courses. Usually, the examination schedule of all the courses in each course slot will clash and hence we recommend you select only one course from each course slot.

**Key Points:**
**Specializations in M.Tech. (Software Engineering)**

1. Specializations are optional. The offering of any specialization or elective is subject to viability.

2. You may choose electives for a specialization among the elective courses offered. Based on completion of requirements for specialization, the specialization will be awarded.

3. The specialization, if any, will be mentioned only at the end of the Transcript, but not on the Provisional Certificate or Degree Certificate.

4. Please note that, in case you decide to not opt for any specialization, then you may choose any electives from the general pool or across the specializations.

5. Please make a note that based on your selection of courses in 3 semesters, eligibility for a particular specialization will be decided.

6. **In case you are eligible for more than one specialization, you can opt only one.**

7. Please ensure that total no. of units for course work should be minimum 48.

**Classification:** There are two types of Specialization in M.Tech. Software Engineering.

| Requirement For Specialization | | | |
|---|---|---|---|
| Specialization | Total Specialization Elective | Required To complete | Mandatory Elective Course |

| Full Stack Engineering (FSE) | 12 | 4 | 3 |
|---|---|---|---|
| Software Product Management (SPM) | 9 | 4 | 3 |

## Requirements for a Specialization:

1. Minimum 4 electives are to be chosen from the designated pool of electives for that specialization. The remaining three electives may be chosen from the same specialization, general pool of electives or across the specializations.

2. Only four courses can be taken in each semester, with one course in each examination session. For registration in each semester, a student must choose only one course from each course group corresponding to one session.

3. Please note that the offering of any specialization or elective is subject to viability. Some specializations or some electives within electives may not be offered.

4. Please check the course description and M.Tech. Software Engineering brochure through the link appended below:

**Please choose the elective courses carefully. The option chosen by you and the courses selected by you would be treated as final and the choice of specialization ( or non-specialization) or electives cannot be changed later.**

**M.Tech. Software Engineering Curriculum:**

**Core Courses**

| Course No. | Course Title | Units |
|---|---|---|
| SE* ZG651 | Software Architecture | 5 |
| SE* ZG527 | Cloud Computing | 5 |
| SE* ZG544 | Agile Software Processes | 4 |
| SE* ZG685 | Software Product Management | 5 |
| SE* ZG501 | Software Quality Assurance and Testing | 4 |

**General Pool of Electives**

| Course No. | Course Title | Units |
|---|---|---|
| SE* ZG519 | Data Structures & Algorithms Design | 5 |
| SE* ZG555 | Data visualization and Interpretation | 5 |
| SE* ZG557 | Artificial and Computational Intelligence | 5 |
| SE* ZG569 | Blockchain Technologies & Systems | 4 |
| SE* ZG681 | Cyber Security | 4 |

| SE* ZG515 | Data Warehousing | 5 |
|---|---|---|
| SE* ZG568 | Applied Machine Learning | 4 |
| SE* ZG566 | Secure Software Engineering | 5 |
| SE* ZG589 | Middleware Technologies | 4 |
| SE* ZG502 | Advanced topics in Software Engineering | 4 |

## Specialization for M.Tech. Software Engineering

**The following specializations are proposed for M.Tech. in Software Engineering**

| Specializations | Existing/New Specialization |
|---|---|
| Full Stack Engineering (FSE) | New |
| Software Product Management (SPM) | New |

**Specialization Requirements:**

a. For any specialization, 4 courses (including mandatory electives marked #) are to be selected for that specialization.
b. For graduating without a specialization, at least 3 courses from those marked # (from either specialization) to be selected.

**Note:**

a. Student can also obtain the degree without any specialization.
b. # indicates mandatory elective for this specialization

**Pool of Electives for specialization 1: Full Stack Engineering (FSE) (12)**

| Course No. | Course Title | Units |
|---|---|---|
| SE* ZG585 | Cross Platform Application Development | 4 |
| SE* ZG514 | Introduction to DevOps# | 4 |
| SE* ZG583 | Scalable Services# | 5 |
| SE* ZG552 | Software Testing Methodologies | 4 |
| SE* ZG503 | Full-stack Application Development# | 4 |
| SE* ZG518 | Database Design & Applications | 5 |
| SE* ZG504 | API-based Products | 4 |
| SE* ZG505 | User Experience Design | 4 |
| SE* ZG530 | Design of Conversational Experiences | 4 |
| SE* ZG506 | API-driven Cloud Native Solutions | 5 |
| SE* ZG587 | Open Source Software Engineering | 4 |
| SE* ZG512 | Object Oriented Analysis and Design | 4 |

Note: 4 courses are required including those marked with #

**Pool of Electives for specialization 2: Software Product Management (SPM) (9)**

| Course No. | Course Title | Units |
|---|---|---|
| SE* ZG507 | Product Discovery and Requirements Engineering# | 4 |
| SE* ZG508 | Product Strategy and Planning# | 4 |
| SE* ZG509 | Communication, Estimation and Negotiation# | 4 |
| SE* ZG510 | Product Analytics | 5 |
| SE* ZG504 | API-based Products | 4 |
| SE* ZG505 | User Experience Design | 4 |
| SE* ZG410 | Marketing | 4 |
| SE* ZG622 | Software Project Management | 4 |
| SE* ZG587 | Open Source Software Engineering | 4 |

Note: 4 courses are required including those marked with #

**Semester-wise pattern of courses**

| Year | First Semester | | | Second Semester | | |
|---|---|---|---|---|---|---|
| | Course No. | Course Title | U | Course No. | Course Title | U |
| I | SE* ZG651 | Software Architecture | 5 | SE*ZG501 | Software Quality Assurance and Testing | 4 |
| | SE* ZG527 | Cloud Computing | 5 | | Elective 1 | |
| | SE* ZG544 | Agile Software Processes | 4 | | Elective 2 | 12 (min) |
| | SE* ZG685 | Software Product Management | 5 | | Elective 3 | |
| | | Total | 19 | | Min Total | 16 |
| II | | Elective 4 | 16 (min) | SE*ZG628T | Dissertation | 16 |
| | | Elective 5 | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Elective 6 | | | | | |
| | Elective 7 | | | | | |
| | Min Total | 16 | | | Total | 16 |

Regards

WILPD

BITS Pilani

---

unsubscribe