# BPM504 Advanced Construction Technologies for Productivity

**Level:** 5

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY JAN

**Synopsis:**

This course aims to provide an insight into how advanced construction technologies such as design for manufacturing and assembly (DfMA) can be adopted to enhance the productivity and performance in construction projects. At the end of the course, students will gain knowledge in concepts and implementation of various productive construction technologies as well as their advantages and limitations. Case studies will be shared for the best practices and lessons learnt.

**Topics:**

- Buildability Framework and Advanced Construction Technologies
- Principles of Integrated Digital Delivery (IDD) and Lean Construction
- Concepts and Principles of Design for Manufacturing and Assembly
- Prefabricated Prefinished Volumetric Construction (PPVC) – Design Consideration
- Prefabricated Prefinished Volumetric Construction (PPVC) – Fabrication and Installation
- Mass Engineered Timber (MET)
- Advanced Precast Construction System
- Prefabricated Mechanical-Electrical-Plumbing (MEP) System
- Structural Steel
- Manufacturer Accreditation Scheme
- Emerging Technologies
- Case Studies

**Learning Outcome:**

- Appraise the benefits and challenges in adopting DfMA
- Compare various DfMA technologies
- Propose strategies for DfMA adoption
- Analyse the impact of DfMA adoption on timelines of building construction stages
- Recommend suitable DfMA technologies and techniques during design phase
- Appraise the impact of DfMA adoption on design and project management
- Propose guidance on diagnostic and quality check
- Discuss safety consideration in design of DfMA processes

**Assessment Strategies - Regular Semester (Evening Class):**

| Components | Description | Weightage Allocation (%) |
|---|---|---|
| Overall Continuous Assessment | QUIZ 1 | 10 |
| | TUTOR-MARKED ASSIGNMENT 1 | 20 |

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|---|---|---|
| Overall Continuous Assessment | TUTOR-MARKED ASSIGNMENT 2 | 20 |
| Overall Examinable Components | Written Exam | 50 |
| **Total** | | **100** |

*The information listed is subject to review and change.