LOGO POLITEKNIK

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| Assessment | Quantity | Percentage (%) |
| Quiz | 1 | 5% |
| Test | 2 | 25% |
| Tutorial Assignment | 1 | 20% |

**JABATAN/ *DEPARTMENT OF* XXX RANGKA KURSUS/ *COURSE OUTLINE***

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| 1. | NAME OF COURSE | MECHANICS OF CIVIL ENGINEERING STRUCTURES |
| COURSE CODE | DCC XXXX |
| 2. | SYNOPSIS | MECHANICS OF CIVIL ENGINEERING STRUCTURES covers  knowledge of facts and basic principles of types of forces, strength of materials and behavior of loaded structures. This course provides exposure to the impact of loaded structures on direct and shear stresses, slope and deflection. This exposure will be the pre requisite  to understand other courses in Civil Engineering |
| 3. | CREDIT VALUE | 3 |
| 4. | PREREQUISITE/  CO-REQUISITE (IF ANY) | None |
| 5. | COURSE LEARNING OUTCOMES (CLO):  Upon completion of this course, students should be able to: | |
| CLO1 | Apply the fundamental knowledge and principles in mechanic structure clearly. (C3, PLO1) |
| CLO2 | Analyze structure behavior in determinate structure precisely. (C4, PLO2) |
| CLO3 | Construct the diagram related to bending stress and deflection of determinate beam. (P3, PLO10) |
| PROGRAMME LEARNING OUTCOMES (PLO):  PLO 1 : Apply knowledge of applied mathematics, applied science, engineering fundamentals and engineering specialization as specified in DK1 to DK4 respectively to wide practical procedures and practices.  PLO 2 : Identify and analyze well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4).  PLO 10: Communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions | |
| 6. | ASSESSMENT METHOD:  The course assessment consist of:   1. Continuous Assessment (CA) – 50% 2. Final Examination (FE) – 50% | |

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| 7. | TEACHING SCHEDULE: | | | | | | | |
|  | Topic No. | Topic/Content | | Recommended Contact Hours | Assessment Method | Week |  |
| 1.0 | INTRODUCTION TO MECHANICS OF STRUCTURES  This topic covers the basic knowledge of structural mechanics, definition of structure in civil engineering, types of forces,  supports, and reactions in beams. | | 2 hours Lecture | Quiz 1 | W2 |  |
| 2.0 | EQUILIBRIUM FORCES,SHEAR FORCES & BENDING MOMENT  This topic introduces the students to the equilibrium principles, relationship between forces and reactions. It also covers the calculation of shear force and bending moment for a loaded beam. | | 10 hours Lecture  7 hours Tutorial | Test 1 | W3 - W7 |  |
| 3.0 | DIRECT STRESS  This topic introduces the relationship  between stress and strain, Hooke’s law and elastic modulus. | | 5 hours Lecture | Test 2 | W8 – W10 |  |
| 4.0 | BENDING STRESS IN BEAM  This topic introduces the determination of the neutral axis and second moment of area for a section and covers the calculation of the maximum value of bending stress and draw the distribution. | | 6 hours Lecture  6 hours Tutorial | Tutorial Assignment 1 | W10 - W13 |  |
| 8. | REFERENCES | | | Main :  1. R. C. Hibbeler. 2013. *Mechanics of Materials*. 9th Edition: Pearson Education Inc.  Additional :   1. Ferdinand P. Beer. 2015, *Mechanics of Materials*. 7th Edition: McGraw-Hill International Edition. 2. R. C. Hibbeler. 2004. *Static and Mechanics of Materials*. 2nd Edition: Upper Saddle River, NJ, Prentice Hall. | | | | |

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| Prepared by:  ……………….…………………………  (Tandatangan dan Nama Pensyarah Kursus)  Date : | Verified by :  …………………………………………………….  ( Tandatangan dan Nama TP(A)/TP/KJ/KPro/KUPA/KK **)**  Date : |