**POKHARA UNIVERSITY**

**Master of Science in Structural Engineering Program**

**Curricular Structure**

The Master of Science in Structural Engineering program focuses in providing students adequate knowledge and skills that allow them to have a meaningful career in structural analysis, design and construction, including earthquake resistant, economic design in industrial and academic fields. The duration of a program is two years consisting of 60 credit hour courses spread over 4 semesters.

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| **Semester I** | | | **Semester II** | | | |
| Course Code | Course Description | Credit Hours | Course Code | Course Description | Credit Hours |
| STR 501 | Advanced Structural Analysis | 4 | STR 506 | Finite Element Method | 3 |
| STR 502 | Dynamics of Structures | 3 | STR 507 | Earthquake Resistant Design | 3 |
| STR 503 | Solid Mechanics | 3 | ACT 508 | Advanced Concrete Technology | 3 |
| MTH 504 | Numerical Methods and Analysis | 3 |  | Elective I | 3 |
| GTH 505 | Foundation Analysis and Design | 4 |  | Elective II | 3 |

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| **Semester III** | | | **Semester IV** | | |
| Course Code | Course Description | Credit Hours | Course Code | Course Description | Credit Hours |
| STR 509 | Advanced Structural Design | 4 | STR 511 | Thesis | 12 |
| STR 510 | Structural Engineering Laboratory | 3 |  |  |  |
|  | Elective III | 3 |  |  |  |
|  | Elective IV | 3 |  |  |  |
|  | Elective V | 3 |  |  |  |

**Elective Courses**

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| **Elective I & II** (Each 3 credits) | | | |
| Course Code | Course Description | Course Code | Course Description |
| STR 601 | Applied Seismology | MSE 605 | Research Methodology |
| STR 602 | Rock Mechanics | SHA 606 | Seismic Hazard Analysis |
| STR 603 | Theory of Plates and Shells | DSM 607 | Disaster Management |
| CAD 604 | Computer Added Design |  |  |

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| **Elective III, IV & V** (Each 3 credits) | | | |
| STR 701 | Bridge Analysis and Design | STR 710 | Fracture Mechanics of Concrete |
| MSE 702 | Pre-Stressed Concrete | STR 711 | Health Monitoring of Structures |
| MSE 703 | Design of Industrial structure | STR 712 | Advanced Design of Steel Structures |
| HYD 704 | Hydraulic Structures | STR 717 | Tunnel Engineering |
| MSE 705 | Design of high-rise building | STR 714 | Optimization in Structural Design |
| MSE 706 | Geotechnical Earthquake Engineering | STR 709 | Repair and Rehabitation of Structures |
| STR 707 | Design of Thin Shell Structure | STR 715 | Seismic Assessments and Retrofitting of Structures |
| STR 708 | Design of Masonry Structures | SRA 716 | Seismic Risk Analysis |
| STR 713 | Non-Linear Analysis of Structures | | |