**SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT**

**DEPARTMENT OF CIVIL ENGINEERING**

**Computational Hydraulic Laboratory**

TThe Computational Hydraulic Laboratory is developed under the Centre of Excellence on “Water Resources and Flood Management” in the Department of Civil Engineering. 

Following Softwares are available in the said Laboratory:

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| Sr No. | Name of Equipment/ Software's |
| 1 | Desktop PCs (45 Nos) |
| 2 | MIKE 11  |
| 3 | MIKE FLOOD |
| 4 | MIKE 21 FM |
| 5 | MIKE HYRDO BASIN |
| 6 | MIKE SHE |
| 7 | GMS |
| 8 | ESRI ArcGIS 10.6 |
| 9 | ERDAS IMAGINE |
| 10 | Bentley Water Gem |
| 11 | Bentley Storm CAD |
| 12 | Bentley Sewer Gem |
| 13 | Bentley Hammer |
| 14 | Auto CAD |
| 15 | Statistica |
| 16 | ANSYS |
| 17 | MATLAB |
| 18 | HEC-RAS |
| 19 | HEC-HMS |
| 20 | RiverCAD Professional |
| 21 | HEC-2 |
| 22 | Origin Lab Pro V 2021b |
| 23 | MIKE 21C |

Following computation laboratory work is carried out in this laboratory:

1. Analysis of steady state water surface profile using HEC-RAS.
2. Analysis of unsteady state flood wave using HEC-RAS.
3. Hydrologic modelling of catchment using HEC-HMS.
4. Integration of hydrologic (HEC-HMS) and hydraulic models (HEC-RAS).
5. Water Distribution network analysis using LOOP.
6. Water distribution network analysis using Water GEMs.
7. Water hammer analysis using Bentley Hammer.
8. Reservoir optimization through linear programming solution using LINGO.

Apart from above laboratory work, UG, PG and PhD students are carried out their seminar, dissertation and doctoral thesis work using the resources of this laboratory. The CHL is also utilized for the consultancy purposes.