**Vehicle Dynamics Model:**

**Objective:** The model should be able to simulate the motorcycle concepts and assist in the design decision (*this we can make more specific)*, based on an optimization of lap time.

**Requirements:**

* Ability/Easy to change the parameters of the bike for comparison
* Output: Lap time, acceleration/velocity profiles, forces on body
* Includes roll angle
* Motorcycle is controlled (Driver)
* Motorcycle can follow a trajectory

**Wishes:**

* Ability to insert two wheel drive and regenerative braking
* Ability to insert different tracks
* Optimization of certain parameters of the bike
* Ability to compute optimal race line
* Being able to provide animation of the bike
* User friendly to other departments

**Wishes Departments:**

* Chassis: The forces that are exerted on the complete system (centrifugal force in corners, acceleration,
* Powertrain: Acceleration/Velocity profile, maximum useful torque, 0 to 100 time
* Vehicle Dynamics:

**Deadlines:**

**20-11-2018:** Model for the motorcycle finished for described input vector(steering/torque), the motorcycle does not yet have to be controlled.  **1-12-2018:** A model finished which fits all the requirements named above.  
**21-12-2018:** Two-wheel drive and regenerative braking included.