```cpp
// PID.h

#ifndef _PID_h
#define _PID_h

#if defined(ARDUINO) && ARDUINO >= 100
    #include "wprogram.h"
#else
    #include "WProgram.h"
#endif

class PIDClass
{
  protected:
      float kP = 0.0f;
      float kI = 0.0f;
      float kD = 0.0f;

      float Error = 0.0f;
      float Last_Error = 0.0f;

      float P_Error = 0.0f, I_Error = 0.0f, D_Error = 0.0f;

      float Output = 0.0f, Last_Output = 0.0f, Delta_Output = 0.0f;


  public:
      void init_PID();
      float update_PID(float real, float desired);
      void Set_Constants(float KP, float KI, float KD);
};

#endif

```