

CPEG 340 Assignment

Total marks = 15% [Report = 8% + Individual assessment = 7%]

Consider the code shown below; this code multiplies two polynomials of order 4 i.e. each polynomial has 5 coefficients. Design a single-purpose processor for this code; your solution should provide a complete design of the processor's FSM, datapath and the control unit. Your implementation should use a minimal number of adders and multipliers. Provide a neat and clean solution; use a diagramming software such as VISIO for presenting your drawings. Provide your solution (only one submission per group) as a single PDF file and upload it via the submission link on the course page by **December 9, 2021 @ 2 pm**. Students' names should be written clearly on the cover page of the report.

Note: Students should work in groups of size 3-4 however, each student in the group will be assessed individually. Therefore, it is important that every student in a group must actively participate in solving the assignment and understand all aspects of the submitted work. You need to maintain the same group for the course project as well. Individual assessments for the course assignment and course project will be held together after the assignment and project submissions.

```
int i, j;
int A[5], B[5], C[9];

while(1)
{
    while(!go_i);
    A[0] = A0_in;
    A[1] = A1_in;
    A[2] = A2_in;
    A[3] = A3_in;
    A[4] = A4_in;
    B[0] = B0_in;
    B[1] = B1_in;
    B[2] = B2_in;
    B[3] = B3_in;
    B[4] = B4_in;

    for(i=0; i<9; i++)
    {
        C[i]=0;
    }

    for(i=0; i<5; i++)
    {
        for (j=0; j<5; j++)
        {
            C[i+j] += A[i]*B[j];
        }
    }
}
```