Course Structure and Course Code

1. Introduction

The Far Western University (FWU) is offering the course in Bachelors Degree in Computer Engineering. The objective of this course is to produce skilled, qualified Computer Engineers that works for software development, network design and implementation, hardware and software trouble shooting, network security policies, etc. The strong theoretical foundation with sufficient practical exposure prepares students to solve real world problems. The details of this course include as follows:

1.1 Title of the Course
Bachelors Degree in Computer Engineering.

1.2 Duration of the Course
Duration of the Course is four (4) years. Each year consists of two semesters. The duration of each semester will have a minimum of ninety working days (15 weeks). The medium of instruction is English.

2. Course Structure

This course is divided into eight (8) semesters. The first year courses include fundamental common subjects. The second and third year courses generally include specific courses of the related discipline. The fourth year courses include professional and application type courses.

The course structure provides subject wise information about lecture, tutorial and practical hours per week, full marks and pass marks for the internal and final examination, and the duration of final examination.

3. Credit Hours

This is a full time course with 144 credit hours. Each student has to choose 2 elective subjects equivalent to 6 credit hours and one minor project of 3 credit hours. A field based major project of 6 credit hours should be taken.

4. Course Code

A course code is a combination of letters and numbers. Course code for Bachelors Degree in Computer Engineering is specified for each subject consisting of two letters followed by three digits for core courses and four digits for elective courses.

The first two letters of the Course Code denote respective discipline, eg. AR: architecture; CE: civil; CT: computer; EE: electrical; EX: electronics; GE: geomatic; ME: mechanical; SH: science and humanities.

The first digit denotes the year on which the subject is offered (1 for first year, 2 for second year, 3 for third year, and 4 for fourth year respectively).

The second digit denotes the semester on which the subject is offered (1 for first semester, 2 for second semester, 3 for third semester, 4 for fourth semester, 5 for fifth semester, 6 for sixth semester, 7 for seventh semester and 8 for eighth semester respectively). Third digit of core courses denotes the paper.

The elective courses scheduled as "Elective I" are taught in the fourth year/seventh semester and "Elective II" in the fourth year/eighth semester respectively. The first digit of the code of the elective courses indicates the year (such as 4 for fourth), second digit indicates the

semester (such as 7 for seventh semester and 8 for eighth semester) and third and fourth digit such as 01, 02, 03, 04, 05, 06, and 07 indicates the individual elective courses taught in the semesters.

5. Instruction Method

Each course is specified with lecture, tutorial and practical hours per week. The method of instruction is lecture, enhanced by tutorials and/or practical depending upon the relevancy of the course. Tutorials are used to widen the concepts stated in the course. Practical and laboratory classes are used to develop necessary concepts and basic skills.

6. Internal Assessment and Final (End Semester) Examination

The student's performance in each subject is evaluated by internal and final examination.

6.1 Internal Assessment.

40 % of the total marks is allocated for internal assessment for theory part of all subjects. Internal assessment mark should include class attendance and performance, timely submission and correctness of assignments, class tests, quizzes, etc.

Evaluation of practical part of most of the subjects is done through continuous assessment. It includes lab performance, report submission, presentation, viva etc. However, for few courses final examinations are also conducted.

70 % attendance is mandatory to qualify for the final examination.

6.2 Final Examination

Examinations of theoretical subjects are conducted as per academic calendar of FWU. Duration of final examination will be 3 hours for most of the subjects.

6.3 Pass Marks

Each student must obtain 45 % in both internal assessment and final examination of each subject to pass in a particular subject. Only students who have passed the internal assessment of a particular subject are allowed to appear in the final examination of that subject.

7. Evaluation System

Students are evaluated on a continuous basis throughout the semester. Evaluation is done by the faculty, a consequence of the autonomous status granted to the faculty of engineering. Project work is evaluated on the basis of the review by internal and external examiners. For successful completion of the course, students should pass all the components of all subjects in all semesters. The overall performance of each student is measured by cumulative grade point average.

Depending upon the final weightage aggregate percentage scored by a student, a division is awarded as follows:
CGPA > 3.6: Distinction Division
CGPA < 3.6 and ≥ 3.0: First Division
CGPA < 3.0 and ≥ 2.0: Second Division
CGPA < 2.0 and ≥ 1.0: Pass Division

B.E. Degree in Computer Engineering

FIRST YEAR					
Semester I	**Course Code**	**15 Credits**	**Semester II**	**Course Code**	**18 Credits**
Engineering Drawing	AR 111	2	Engineering Math II	SH 121	3
Engineering Math I	SH 112	3	Engineering Chemistry	SH 122	3
Engineering Physics	SH 113	3	Thermodynamics	ME 123	3
Basic Electrical Engineering	EE 114	3	Applied Mechanics	CE 124	3
Programming in C	CT 115	3	Object Oriented Programming	CT 125	3
Workshop Technology	ME 116	1	Discrete Structure	CT 126	3
SECOND YEAR					
Semester III	**Course Code**	**18 Credits**	**Semester IV**	**Course Code**	**18 Credits**
Engineering Math III	SH 231	3	Applied Mathematics	SH 241	3
Data Structure and Algorithm	CT 232	3	Microprocessor	EX 242	3
Theory of Computation	CT 233	3	Algorithmic Mathematics	CT 243	3
Electrical Circuit Theory	EE 234	3	Electrical machine	EE 244	3
Digital Logic	EX 235	3	Electronic Device and Circuit	EX 245	3
Electromagnetics	EX 236	3	Communication English	SH 246	3
THIRD YEAR					
Semester V	**Course Code**	**18 Credits**	**Semester VI**	**Course Code**	**20 Credits**
Probability and Statistic	SH 351	3	Project and Organization Management	CT 361	3
Instrumentation	EX 352	3	Research Methodology	CT 362	2
Computer Graphics	EX 353	3	Artificial Intelligence	CT 363	3
Object Oriented Software Engineering	CT 354	3	Database Management System	CT 364	3
Computer Architecture and Design	CT 355	3	Communication System	EX 365	3
Operating System	CT 356	3	Engineering Economics	SH 366	3
			Minor Project	CT 367	3
FOURTH YEAR					
Semester VII	**Course Code**	**19 Credits**	**Semester VIII**	**Course Code**	**18 Credits**
Computer Networks	CT 471	3	Digital Signal Analysis and Processing	CT 481	3
Distributed Computing	CT 472	3	Engineering Professional Practice	CE 482	2
Information System	CT 473	2	Information security	CT 483	3
Data Mining and Data Warehousing	CT 474	3	Big Data	CT 484	3
Simulation and Modelling	CT 475	3	Elective -II	CT	3
Elective -I	CT	3	Project - Part B	CT 485	4
Project - Part A	CT 476	2			

Electives

Elective I			Elective II		
Subject	**Code No**	**Credits**	**Subject**	**Code No**	**Credits**
Multimedia System	CT 4701	3	Enterprise Application Design and Development	CT 4801	3
Image Processing and Pattern Recognition	CT 4702	3	Internet of Things	CT 4802	3
Networking with IPV6	CT 4703	3	Distributed and Object Oriented Database	CT 4803	3
Geograhical Information System	CT 4704	3	e-Government system	CT 4804	3
Agile Software Development	CT 4705	3	Web Technology	CT 4805	3
Embedded System	CT 4706	3	Machine Learning	CT 4806	3
Software Project Management	CT 4707	3			
Internet and Intranet	CT 4708	3			