Syllabus and Program of the Diploma in Cardiac Pacing

1. The conductive system of the heart (1 hour):
   Study the anatomical and functional properties of the different components of the conductive system of the heart.

2. Cardiac cycle (1 hr):
   Basic knowledge of the generation of the cardiac cycle and the physiological changes underlying it.

3. Electrical properties of the myocardial cells (1 hour):
   Study the action potential and the generation of the different ECG wave forms.

4. 12 lead ECG (2 hours):
   Study the physiology of cardiac tracing and the ECG.

5. 12 lead ECG.

6. Pathophysiology of tachy-arrhythmias (4 hours):
   In this part the candidates will discuss and learn how the different tachycardia arise and the pathophysiology underlying them. Special emphasis on re-entry arrhythmia and treatment options.

7. Pathophysiology of brady-arrhythmias (4 hours):
   This will discuss the causes and ECG changes and treatment of bradycardia. Supra-ventricular arrhythmias (2 hours): this will discuss the different supraventricular arrhythmias in terms of causes, pathophysiology and treatment, special emphasis on atrial flutter and atrial fibrillation.

8. Supra-ventricular arrhythmias.

9. Ventricular arrhythmias (2 hours):
   This will discuss the different ventricular arrhythmias in terms of causes, pathophysiology and treatment, special emphasis on ventricular tachycardia and fibrillation.

10. Ventricular arrhythmias

11. Brady-arrhythmias (2 hours):
   The different types of heart block will be discussed in details together with treatment options.
13. Overview of pacemakers (total 8 hours):

In this section the candidate will learn the different components of the pacemakers and its electric circuit, how it works, and how to troubleshoot its function, test it and programme it. Implantation technique will also be discussed.

15. Overview of pacemakers.
17. Overview of ICDs (8 hours):

In this section the candidate will learn the different components of the ICD pacemakers and its electric circuit, how it works, and how to troubleshoot its function, test it and programme it. Implantation technique will also be discussed.

18. Overview of ICDs.
19. Overview of ICDs.
20. Overview of biventricular pacemakers (4 hours):

In this section the candidate will learn the different components of the biventricular pacemaker and its electric circuit, how it works, and how to troubleshoot its function, test it and programme it. Implantation technique will also be discussed.

22. Technique of Implantation of pacemakers.
23. Technique of Implantation of ICDs.
24. Technique of Implantation of Biventricular pacemakers
25. Pacemaker check and follow up: (2 hours):

This is a practical session in which the candidate will be introduced to the different programmers to learn its different components and how it
functions. The candidate will be taught how to run a basic pacemaker check and programming.

26. Pacemaker check and follow up (2 hours):

This is a practical session in which the candidate will be introduced to the different programmers to learn its different components and how it functions. The candidate will be taught how to run a basic ICD check and programming.

27. ICD check and follow up

28. Biventricular pacemaker check and follow up (2 hours):

This is a practical session in which the candidate will be introduced to the different programmers to learn its different components and how it functions. The candidate will be taught how to run a basic ICD check and programming.

29. The programmer

30. Commercial programmers (lecture by Company) (4 hours):

In this part all the manufacturers of devices and programmers will be invited to give talks about their devices and the technology they used in their industry.

31. Commercial programmers (lecture by Company)

32. Commercial programmers (lecture by Company)

33. Commercial programmers (lecture by Company)

34. Heart monitoring and arrhythmia detection (2 hours):

The candidates will be introduced to the technology of distant heart monitoring and the interpretation of the rhythm strip of these devices.

35. The Holter monitor (2 hours):

Candidates will be shown the components and the technology and indications of the holter monitor.
36. The Holter monitor.

37. Telemetry (1 hour):
   Heart monitoring by telemetry and trans telephonic pacemaker check and monitoring will be discussed
   Practical sessions: all candidates will rotate in different cardiac departments to learn the practice of pacing, troubleshooting and programming. Each candidate will be supervised and monitored in each these rotations and a secrete report will be submitted by the supervisor by the end of each session for each candidate, this will carry 20 % of the final exam score.
Assessment:

1/ Year One:
By the end of year one the candidate will have a written exam in the form of multiple choice questions which will constitute 70% of the final score, 30% will be granted to the supervisors report. Pass mark is 60%. Those who would fail will be transferred to the next year but will sit the first year exam in the second year and has to pass both tests to be awarded the degree.

2/ year Two:
By the end of year 2 the candidate will have a final multiple choice questions exam which constitute 40% of the final score. Candidates will undergo a practical exam as well this will constitute 40% of the final score.

20% will be allocated to the supervisors report.

Successful candidates will be awarded the diploma in cardiac pacing and those who fails will re-sit for a final substitute exam in 3 months time.