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# Curriculum

For

## Post Graduate Diploma in Clinical Cardiology (PGDCC) Program

# 2015

Being Offered by

### International University School of Medicine (IUSOM) – Michigan Clinical Campus

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## Table of Contents

<b>No.</b>	<b>Subject</b>	<b>Page No.</b>
	<i>Preface</i>	3
	<i>Summary</i>	4
1.	Introduction to Post Graduate Diploma in Clinical Cardiology (PGDCC) Curriculum	5
2.	Teaching and Learning Methods	6
3.	Experiential Learning Opportunities	6
4.	Training in Practical Procedures	7
5.	Small Group Learning Opportunities	7
6.	One-to-One Teachings	8
7.	Formal Training	8
8.	Personal Study	8
9.	Teaching Others	9
10.	Clinical Research	9
11.	Learning Venues/Activities	9
	11.1 Scheduled Conferences	9
	11.2 Clinical Cardiology Ward Service/Coronary Care Unit	9
	11.3 Schedule 1 Monday through Friday	9
	11.4 Weekends and Holidays	10
	11.5 Clinical Cardiology Consultation Service	10
	11.6 Schedule 2 Monday through Friday	10
	11.7 Cardiology Clinic	10
12.	Elective Rotations	10
13.	Learning Resources	10
14.	Evaluation Methods	11
15.	Educational Goals – Ward Service/Coronary Care Unit	11
	15.1 Patient Care via Ward Service/Coronary Care Unit	11
	15.2 Clinical Medical Knowledge	12
16.	Educational Goals – Consultation Service	13
	16.1 Patient Care via Consultation Service	13
	16.2 Medical Knowledge	13
	16.3 Practice-Based Learning and Improvement 1	13
	16.4 Interpersonal and Communication Skills	13
	16.5 Professionalism	13
	16.6 Practice-Based Learning and Improvement 2	14
	16.7 Systems-Based Practice	15
17.	PGDCC Program Structure	15
18.	Criteria for Admissions	15
19.	Process Used to Select Students for IUSOM PGDCC Program	16
20.	IUSOM Codes for PGDCC Program	16
21.	PGDCC Awarding Institution	16
22.	Admission Applications for PGDCC Program	17
23.	Fees	17
24.	Paying IUSOM Admission Application Fees for PGDCC Program and/or All Other Fees	17
25.	Further Enquiries	18

## *Preface*

This document presents a complete curriculum for the Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered by the International University School of Medicine (IUSOM) – Michigan Clinical Campus (in Dearborn, Michigan, USA) at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia; which is the result of several years' careful thinking, hard work, expert advices and suggestions of medical professionals and educationalists at the health sciences faculties and schools as well as at both academic and non-academic hospitals all located in USA, Canada, and EU including The Netherlands and Caribbean Netherlands. This IUSOM – Michigan Clinical Campus's PGDCC curriculum document was eventually prepared by Prof. Hamid Sattar (Chief Cardiologist) MD, FACC, FSCAI, Vice President – Clinical Sciences at IUSOM – Michigan Clinical Campus (Overall Responsible for PGDCC Program) and by Prof. Dewa Ramlu, MD, IMD, PhD, MPH, AFCHSE, MACRP (PGDCC International Program Director).

After brief Introduction to Post Graduate Diploma in Clinical Cardiology (PGDCC) Curriculum in the Section 1 of this document; Teaching and Learning Methods; Experiential Learning Opportunities; Training in Practical Procedures; Small Group Learning Opportunities; One-to-One Teachings; Formal Training; Personal Study; Teaching Others; and Clinical Research are cited in Sections 2 – 10. Learning Venues/Activities (Section 11) describes Scheduled Conferences; Clinical Cardiology Ward Service/Coronary Care Unit; Schedule 1 Monday through Friday; Weekends and Holidays; Clinical Cardiology Consultation Service; Schedule 2 Monday through Friday; and Cardiology Clinic (Subsection 11.1 through Subsection 11.7). Elective Rotations; Learning Resources; and Evaluation Methods of the PGDCC Course being offered by IUSOM at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA are mentioned in Section 12 through Section 14. Educational Goals – Ward Service/Coronary Care Unit (Section 15) includes Patient Care via Ward Service/Coronary Care Unit; and Clinical Medical Knowledge (Subsection 15.1 and Subsection 15.2). Likewise, Educational Goals – Consultation Service (Section 16) of this PGDCC Course Document describes Patient Care via Consultation Service; Medical Knowledge; Practice-Based Learning and Improvement 1; Interpersonal and Communication Skills; Professionalism; Practice-Based Learning and Improvement 2; and Systems-Based Practice (Subsection 16.1 through Subsection 16.7). Finally, Sections 17-25 of this PGDCC Curriculum being offered by IUSOM at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA together with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia includes PGDCC Program Structure; Criteria for Admissions; Process Used to Select Students for IUSOM PGDCC Program; IUSOM Codes for PGDCC Program; PGDCC Awarding Institution; Admission Applications for PGDCC Program; Fees; Paying IUSOM Admission Application Fees for PGDCC Program and/or All Other Fees; and Further Enquiries, respectively.

In brief, in order to acquire a Post Graduate Diploma in Clinical Cardiology (PGDCC) via IUSOM – Michigan Clinical Campus, USA, a medical student is required to complete 48 weeks of Theory & Clinical Rotations/Clerkships (comprising of 2 Semesters; and duration of such each Semester being 24 weeks) at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA together with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia.

This extensive curriculum has been constructed not only to enable students to achieve a PGDCC via IUSOM – Michigan Clinical Campus in USA through Clinical Training at AMC and at AMC-Affiliated Hospitals in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia but also to convert trainee-doctors (already in possession of minimum qualification of MD or MBBS (Upper Second Class Pass) or Arts (Dutch Degree in Medicine) or an equivalent overseas qualification acceptable to IUSOM) into Fully-Experienced Cardiologists enabling them to impart Clinical Cardiology Services to Heart & cardiovascular Patients in their choice of country where they wish to continue to practice a Medical Profession.

Finally, this document is open to constructive criticism and comments from prospective students, academic staff members, potential competitors and alliances, medical educational institutions, governmental and non-governmental organizations and any other such associations and societies, and it shall be time to time modified accordingly.

Bonaire, Caribbean Netherlands (Formerly Netherlands Antilles), February 1, 2015



Prof. Dr. Ghulam G. Choudhry, Ph.D., D.Sc., President, International University School of Medicine (IUSOM)

## *Summary*

In order to obtain a Post Graduate Diploma in Clinical Cardiology (PGDCC), at the International University School of Medicine (IUSOM) – Michigan Clinical Campus in Dearborn, Michigan, USA, the students are required to successfully complete two semesters (duration of such each semester being six months (24 weeks)) covering Theory & Clinical Rotations/Clerkships at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia.

This Post Graduate Diploma in Clinical Cardiology (PGDCC) Program is available as a 48 weeks (two Semesters in total) full-time course. IUSOM – Michigan Clinical Campus Students will gain knowledge and experience in the theory and clinical application of evidence-based cardiology practice at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia. The PGDCC Program covers the complete spectrum of the management of cardiovascular diseases including full cardiac investigations and preventions. In this PGDCC Course, most of the learning occurs as a result of clinical experience (experiential learning and on-the-job learning) and self-directed study. The degree of self-direct learning will increase as IUSOM students become more experienced. Lectures and formal educational sessions make up only a small part of this course. Students will be able to interact with their tutors and fellow students via an online virtual learning environment. Clinical placements are completed across key areas of cardiology practice providing the opportunity for students to be immersed in the practicalities of provision of complete medical care rather than learning only about the theory.

IUSOM – Michigan Clinical Campus & AMC together with MIOT Hospital in Chennai (India) and other Cardiology Hospitals & Institutes situated in Asia believe that their PGDCC Course offers a truly unique and highly fulfilling student experience as we offer a comprehensive program that includes all aspects in the management of cardiovascular diseases and risk factors. This course encompasses both theory and clinical elements thereby developing skills and competences necessary for proper cardiac intervention. IUSOM – Michigan Clinical Campus's & AMC's as well MIOT Hospital's and other Asian Cardiology Hospitals' & Institutes' Faculty includes International and National Leaders in Cardiology who have contributed to the development of guidelines on cardiovascular intervention.

IUSOM – Michigan Clinical Campus works and collaborates with Ark Medical Center in USA, MIOT Hospital in Chennai, India, and other Cardiology Hospitals & Institutes in Asia which allows its students' access to clinical visits and observations of procedural treatments such as coronary intervention, peripheral vascular intervention, limb salvage, carotid artery stenting, diagnostic cardiac catheterization, intracoronary stenting, percutaneous transluminal coronary angioplasty, PFO/ASD closure, IVC filter, and pace maker placement. IUSOM – Michigan Clinical Campus's PGDCC students also have access to cardiac testing and interpretation of echo, vascular, EKG, event monitor, holter monitor, and heart catheterization.

Course Codes for the Semester 1 and Semester 2 of Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia are IUSOM—MI—PGDCC—01—01 and IUSOM—MI—PGDCC—02—01, respectively.

After successful completion of Clinical Cardiology (PGDCC) Program at a Branch Campus, namely, International University School of Medicine (IUSOM) – Michigan Clinical Campus in USA with 48 weeks' Theory & Clinical Rotations at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals in Michigan, USA together with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the International University School of Medicine (with its Head Quarters situated in Bonaire, Caribbean Netherlands) awards this PGDCC to IUSOM students.

## **1. Introduction to Post Graduate Diploma in Clinical Cardiology (PGDCC) Curriculum**

The objective of this Post Graduate Diploma in Clinical Cardiology (PGDCC) Program (being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia) is to develop a systemic understanding of management principles of cardiovascular diseases and cardiovascular risk factors. Cardiology is generally thought to be based on invasive and interventional skills, however, competence in non-invasive and pharmacological management are equally as important. Indeed pharmacological management of patients with cardiovascular diseases and cardiovascular risk factors such as heart failure, cardiomyopathies, atrial fibrillation, diabetes mellitus, and hypertension are as rewarding as surgical intervention demanded of the coronary or electrophysiological interventionist. The training is designed to develop both the generic and specialty-specific attributes necessary to practice independently as cardiologists.

The Theory & Clinical Rotations/Clerkships training model of IUSOM Post Graduate Diploma in Clinical Cardiology (PGDCC) Program is evidence-based care using diagnostic and therapeutic modalities. The main feature of this IUSOM Program is that it covers all modalities that a typical cardiologist might reasonably be expected to know and demonstrate in the management of cardiovascular diseases and cardiovascular risk factors. Experienced Faculty Cardiologists shall provide close supervision and oversight of all patient care giving students chance to interact with some of the World's Leading Cardiologists. The Cardiology Ward and Consultation Services offer students the opportunity to evaluate and manage patients with various forms of cardiovascular diseases and risk factors for cardiovascular diseases, including but not limited to acute coronary syndromes, valvular heart disease, congestive heart failure, dysrhythmias, and others. There will be major emphasis on electrocardiographic and echocardiographic interpretation in the diagnosis of cardiovascular diseases and the practice of preventive cardiology will be encouraged.

This IUSOM PGDCC Program covers the complete spectrum of cardiovascular diseases including preventive cardiology from patients with established atherosclerotic disease to asymptomatic people including those with high multi-factorial cardiovascular risks. The aim of this program is to train individual doctors to provide the highest standard of care to patients with cardiovascular disorders and risk factors. This Clinical Training Program includes the development of positive attitudes towards lifelong learning and the ability to adapt to future technological advances and the changing expectations of the community at reducing premature deaths and disability due to cardiovascular diseases and cardiovascular risk factors.

This IUSOM PGDCC Program is ideal for Medical Graduates who intend to specialize in cardiology or endeavor to provide comprehensive management and prevention of cardiovascular diseases and cardiovascular risk factors. On successful completion of this IUSOM Post Graduate Diploma in Clinical Cardiology (PGDCC) Program at International University School of Medicine (IUSOM) – Michigan Clinical Campus being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the students would have acquired the qualification and experience to manage cardiovascular diseases and risk factors.

## 2. Teaching and Learning Methods

Adults learn by:

- Reflecting and building upon their own experiences;
- Identifying what they need to learn;
- Being involved in planning their education and training; and
- Evaluating the effectiveness of their learning experiences.

For IUSOM cardiovascular medicine trainees at IUSOM – Michigan Clinical Campus in USA via Ark Medical Center (AMC) and via AMC-Affiliated Hospitals located in Michigan, USA together with via MIOT Hospital in Chennai (India) and via other Cardiology Hospitals & Institutes situated in Asia, to maximize their learning opportunities, it is important that trainees work in a ‘good learning environment’. This includes encouragement for self-directed learning as well for recognizing the learning potential in all aspects of day to day work. There should be a positive attitude to training with learning from peers being encouraged. There should be active involvement in group discussion as this is an important way for doctors to share their understanding and experiences. IUSOM – Michigan Clinical Campus in USA, Ark Medical Center (AMC) & via AMC-Affiliated Hospitals located in Michigan, USA as well MIOT Hospital in Chennai (India) and other Cardiology Hospitals & Institutes situated in Asia believe that a supportive open atmosphere should be cultivated, while questions being welcomed.

During IUSOM’s this Post Graduate Diploma in Clinical Cardiology (PGDCC) Program Course at International University School of Medicine (IUSOM) – Michigan Clinical Campus, being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the bulk of learning occurs as a result of clinical experience (experiential learning, on-the-job learning) and self-directed study. The degree of self-direct learning will increase as trainees become more experienced. Lectures and formal educational sessions make up only a small part of IUSOM’s Post Graduate training at IUSOM – Michigan Clinical Campus in USA in cardiovascular medicine to be offered at its Collaborating Ark Medical Center (AMC) and AMC-Affiliated Hospitals in Michigan, USA as well MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes in Asia.

The list of Learning Opportunities to IUSOM’s Post Graduate Diploma in Clinical Cardiology (PGDCC) Program Course students at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia (cited below in next section) offers guidance only, as there are other opportunities for learning that are not listed here. IUSOM Trainees for PGDCC Program in USA & Asia will learn in different ways according to their level of experience. Trainees should regularly update their personal portfolio to keep a personal record, and be able to present to others, the evidence of the learning methods used.

## 3. Experiential Learning Opportunities

As guidance some of the Experiential Learning Opportunities being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus to IUSOM’s Post Graduate Diploma in Clinical Cardiology (PGDCC) Program Course students at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals in Michigan, USA along with at MIOT Hospital

in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, includes:

- At Ark Medical Center (AMC) and its Affiliated Hospitals in Michigan USA as well as MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, every patient seen, on the ward or in out-patients, provides a learning opportunity to IUSOM's PGDCC students that will be enhanced by following the patient through the course of their illness. Patients seen should provide the basis for critical reading around clinical problems.
- Every time a trainee observes another doctor, consultant or fellow trainee, seeing a patient or their relatives there is an opportunity for learning.
- Ward-based learning including ward rounds, including those post-take, should be led by a consultant and include feed-back on clinical and decision making skills.
- Supervised consultations in outpatient clinics - trainees should have the opportunity to assess both new and follow-up patients and discuss each case with the supervisor so as to allow feedback on diagnostic skills and gain the ability to plan investigations.
- IUSOM's trainees need to learn to make increasingly independent decisions on diagnosis, investigations, and treatment consistent with their level of experience and competence and with maintaining patient safety. These decisions should be reviewed with their supervising consultant.
- During IUSOM PGDCC Training Program, there are many situations where clinical problems are discussed with clinicians in other disciplines, such as cardiac surgical multidisciplinary meetings. These provide excellent opportunities for observation of clinical reasoning.

It should be added that there are other opportunities too for learning (during PGDCC Program Course) that are not listed above. IUSOM Trainees at IUSOM – Michigan Clinical Campus via Ark Medical Center (AMC) and via AMC-Affiliated Hospitals located in Michigan, USA together with via MIOT Hospital in Chennai (India) and via other Cardiology Hospitals & Institutes situated in Asia will learn in different ways according to their level of experience.

#### **4. Training in Practical Procedures**

Observing practical procedures in Cardiology with a consultant or more senior trainee, including the care and counseling of the patient/caregivers before and after the procedure, is the key method of gaining competence in these aspects of the curriculum (apprenticeship learning). Also with advances in technology, the use of simulators will play an increasing part in the training of practical procedures. IUSOM Trainees at IUSOM – Michigan Clinical Campus for Post Graduate Diploma in Clinical Cardiology (PGDCC) Program should maintain a logbook of experience being acquired at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA together with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia. Where appropriate the PGDCC curriculum indicates the likely minimum number of procedures thought necessary to encompass a sufficiently broad spectrum of clinical experience to define performance.

#### **5. Small Group Learning Opportunities**

For Post Graduate Diploma in Clinical Cardiology (PGDCC) Program Training being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA together with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, Small Group Learning Opportunities are also available to IUSOM PGDCC students, as

described below:

- Case presentations and small group discussion, particularly of difficult cases, including presentations at clinical and academic meetings at Ark Medical Center (AMC) and its Affiliated Hospitals in Michigan USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, which should include critical incident analysis.
- Small group bedside teaching, particularly covering problem areas identified by IUSOM trainees.
- Small group sessions of data interpretation, particularly covering problem areas identified by IUSOM trainees and including participation in audit meetings, journal clubs and research presentations, etc.

## **6. One-to-One Teachings**

For its Post Graduate Diploma in Clinical Cardiology (PGDCC) Program at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, IUSOM – Michigan Clinical Campus also offers to PGDCC students One-to-One Teachings such as:

- Review of out-patients, ward referrals or in-patients with supervising consultant.
- Review/case presentations with educational supervisor including selected notes, letters and summaries.
- Critical incident analysis.
- Discussion between trainee and trainer of knowledge of local protocols.
- Feedback following assessments provides excellent teaching opportunities.

## **7. Formal Training**

The Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered by Ark Medical Center (AMC) and by AMC-Affiliated Hospitals located in Michigan, USA as well by MIOT Hospital in Chennai (India) and by other Cardiology Hospitals & Institutes situated in Asia, also includes Formal training, which is organized both locally and internationally. IUSOM Trainees will be required to plan so that they can attend these formal training sessions. Trainees will also be expected to provide feedback on this training so that the quality of the training can be assessed and the format and content modified. The details of feedback should be recorded in the trainee's portfolio. Trainees must attend two-thirds of formal training sessions both locally and internationally in order to progress through the training program.

## **8. Personal Study**

At Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, IUSOM Clinical trainees enrolled for the Post Graduate Diploma in Clinical Cardiology (PGDCC) Program offered by IUSOM – Michigan Clinical Campus are also required to conduct Personal Study, for instance covering:

- Personal study including computer-based learning.
- Practice examination questions and subsequent reading.
- Reading journals.



- Writing reviews and other teaching material.

## 9. Teaching Others

During Post Graduate Diploma in Clinical Cardiology (PGDCC) Program, IUSOM clinical trainees are also able for Teaching Others because IUSOM – Michigan Clinical Campus and Ark Medical Center (AMC) & AMC-Affiliated Hospitals located in Michigan, USA as well MIOT Hospital in Chennai (India) and other Cardiology Hospitals & Institutes situated in Asia believe that:

- Teaching undergraduate medical students and students in allied health professions and postgraduate doctors provides excellent learning opportunities for the teacher.
- Presenting cases at grand rounds or similar clinical meetings provides the opportunity to review the literature relating to the clinical case. This provides the opportunity for in depth study of one clinical problem as well as learning important critical thinking and communication skills.
- Journal club presentations allow development of critical thinking and in depth study of particular areas.

## 10. Clinical Research

For Post Graduate Diploma in Clinical Cardiology (PGDCC) Program (being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia), the Development of Research competencies forms an important part of the Clinical Cardiology curriculum as they are an essential set of skills for effective Clinical Practice. Undertaking research helps to develop critical thinking and the ability to review medical literature. Clinical Research also allows development of particular expertise in one area of cardiovascular medicine allowing more in depth knowledge and skills and helping to focus long term career aims and interests.

## 11. Learning Venues/Activities

For the Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered by IUSOM – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, Learning Venues/Activities are detailed in the following 7 Subsections:

### 11.1 Scheduled Conferences

Tuesday 7:30 a.m.	Cardiac Catheterization/ Morbidity and Mortality Conference
Wednesday 7:30 a.m.	Clinical case conferences or didactic lectures/videotapes on core curriculum topics
Thursday 7:30 a.m.	Clinical case conferences, journal clubs, ECG/echo conferences, or research conferences
Last Friday of each month	Combined Cardiology and Cardiothoracic surgery clinical case conference

### 11.2 Clinical Cardiology Ward Service/Coronary Care Unit

At Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as

well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the Clinical Cardiology inpatient team cares for patients admitted to both the Cardiology ward service and the Coronary Care Unit. Students will be assigned to these services and work closely with subspecialty fellow and faculty attending cardiologists. Patient care responsibilities are similar to those of General Medicine ward teams, but details of the process of care will be determined by the attending cardiologists and the fellow. The Chief of Clinical Cardiology and Program Director will set limits on the number of patients that may be assigned to these teams. Students assigned to the Clinical Cardiology team must attend Morning Report and in addition may attend conferences of the Cardiology section.

### **11.3 Schedule 1 Monday Through Friday**

7:00 – 8:00 a.m.	Work rounds (exact time set by resident and fellow)
8:00 – 9:00 a.m.	Morning report
9:30 – 11:30 a.m.	Attending rounds (exact time set by attending Cardiologists)
12:00 – 1.00 p.m.	Noon conference
1:00 – 5:00 p.m.	Ward responsibilities and Continuity clinic as scheduled

### **11.4 Weekends and Holidays**

The attending fellow and upper level resident will set time of rounds.

### **11.5 Clinical Cardiology Consultation Service**

The attending Faculty Cardiologist assigned to the service will determine IUSOM PGDCC students' schedule and responsibilities. In addition to answering consultations and working in the Stress Lab, students also attend conferences.

### **11.6 Schedule 2 Monday through Friday**

8:00 a.m. – 12:00 noon	Perform stress tests
12:00 – 1:00 p.m.	Noon conference (Department of Medicine)
1:00 – 5:00 p.m.	Consult rounds/Heart Station activities (including, but not limited to interpreting stress tests, electrocardiograms, echocardiograms, and ambulatory electrocardiograms) and Continuity clinic as scheduled

### **11.7 Cardiology Clinic**

Wednesday 1:00 – 4:30 p.m., Medicine Specialty Clinic, IUSOM PGDCC students may attend if there is no conflict with their Continuity Clinic or Consultation Service rounds.

## **12. Elective Rotations**

IUSOM PGDCC Students at IUSOM – Michigan Clinical Campus, who have completed at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the standard rotation Consultation Service rotation may request an elective rotation that focuses on any aspect of the Clinical Activities of the Cardiology Section. Requests must be approved by the Chief of the Clinical Cardiology or the Program Director. All prerequisites for approval of Electives must be fulfilled.

## **13. Learning Resources**

For following the Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being

offered by IUSOM – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the following Learning Resources can be utilized:

- Standard Medical and Clinical Cardiology Textbooks
- Consensus guidelines of the American Heart Association/American College of Cardiology, available through the websites of these organizations:  
<http://americanheart.org>.  
<http://www.acc.org>.
- ECG Wave-Maven Self-Assessment Program for Students and Clinicians  
<http://ecg.bidmc.harvard.edu/maven/mavenmain.asp>.
- References for articles and reading lists will be distributed during orientation.

## 14. Evaluation Methods

The internal examiner system and Boards of Examiners are central to the process by which the International University School of Medicine (IUSOM) – Michigan Clinical Campus monitors the reliability and validity of its assessment procedures and academic standards, for its Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, as cited below:

- Global faculty evaluation at end of rotation (all competencies)
- Clinical evaluation exercises: interviewing skills, examination skills, counseling skills
- Specific medical knowledge, medical knowledge, and diagnostic interpretation exercises may focus on, but are not limited to:
  - Electrocardiogram interpretation
  - Cardiac enzyme interpretation

## 15. Educational Goals – Ward Service/Coronary Care Unit

During its Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, IUSOM – Michigan Clinical Campus's Educational Goals regarding Ward Service/Coronary Care Unit are mentioned in next two Subsections:

### 15.1 Patient Care via Ward Service/Coronary Care Unit

For PGDCC Program, IUSOM – Michigan Clinical Campus's, Ark Medical Center's (AMC's), and AMC-Affiliated Hospitals' located in Michigan, USA along with MIOT Hospital's in Chennai (India) and at other Cardiology Hospitals' & Institutes' situated in Asia, Educational Goals concerning Patient Care via Ward Service/Coronary Care Unit are to enable Clinical Trainees to:

- Learn to perform a detailed cardiovascular examination properly; recognize and interpret common pathologic findings, including murmurs
- Learn to evaluate patients with chest pain appropriately
- Learn to assess patients with acute coronary syndrome appropriately

- Learn to manage systolic and diastolic heart failure appropriately
- Learn to manage atrial fibrillation appropriately
- Learn to order appropriate pharmacotherapy for chronic stable angina
- Learn the appropriate focused evaluation of patients with syncope
- Learn to evaluate patients with acute myocardial infarction appropriately, and interpret laboratory markers of cardiac disease properly
- Learn to manage patients with acute coronary syndrome appropriately
- Learn to select appropriate cardiac stress tests and myocardial imaging studies or various categories of patients
- Learn the indications for pacemakers and implantable defibrillators
- Learn to order cardiac rehabilitation programs appropriately
- Learn to evaluate patients for cardiac transplantation appropriately

## 15.2 Clinical Medical Knowledge

For PGDCC Program, IUSOM – Michigan Clinical Campus's, IUSOM – Michigan Clinical Campus's, Ark Medical Center's (AMC's), and AMC-Affiliated Hospitals' located in Michigan, USA along with MIOT Hospital's in Chennai (India) and at other Cardiology Hospitals' & Institutes' situated in Asia, Educational Goals regarding Clinical Medical Knowledge are to enable Clinical Trainees to:

- Recognize the electrocardiographic patterns in acute myocardial infarction
- Learn to differentiate systolic and diastolic heart failure and understand the pathophysiology of each.
- Recognize cardiac murmurs and their differential diagnosis
- Understand the indications, evidence for expected benefits, and adverse effects of pharmacologic agents used in the management of congestive heart failure
- Learn to interpret echocardiogram reports appropriately
- Understand the pathophysiology of chronic angina, acute coronary syndrome, and acute myocardial infarction
- Understand the pathophysiology of neurocardiogenic syncope
- Understand the pathophysiology of congestive heart failure
- Interpret electrocardiography and telemetry rhythm strips appropriately
- Understand the pathophysiology of valvular heart diseases
- Understand the pathophysiology of adult congenital heart disease
- Understand the pharmacokinetics, pharmacodynamics, indications, and adverse reactions to the following agents or classes of agents: Aspirin, clopidogrel, IIb-IIIa glycoprotein receptor inhibitors, antithrombin agents, thrombolytic agents, beta-adrenergic blocking agents, ACE inhibitors, nitrates, and statins.
- Understand the differential diagnosis of pericardial disease
- Understand the pathophysiology of atrial fibrillation
- Understand the pathophysiology and rationale for treatment of ventricular arrhythmias
- Understand the pathophysiology and rationale for treatment of bradyarrhythmias
- Understand the differential diagnosis of right heart failure and pulmonary hypertension

## **16. Educational Goals – Consultation Service**

Many of the problems and disease processes encountered on the Cardiology ward service will also be seen on the Consultation Service. Therefore, the educational goals of both clinical rotations overlap. PGDCC Students from IUSOM – Michigan Clinical Campus assigned to this rotation (being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia) should review and be guided by the applicable ward service goals. Educational goals specific to the Consultation service are listed below in next seven Subsections:

### **16.1 Patient Care via Consultation Service**

For PGDCC Program, IUSOM – Michigan Clinical Campus's, Ark Medical Center's (AMC's), and AMC-Affiliated Hospitals' located in Michigan, USA along with MIOT Hospital's in Chennai (India) and at other Cardiology Hospitals' & Institutes' situated in Asia, Educational Goals regarding Patient Care via Consultation Service are to enable Clinical Trainees to:

- Learn to administer and interpret cardiac stress tests appropriately
- Learn to manage perioperative cardiac arrhythmias appropriately
- Learn the appropriate perioperative management for patients with coronary artery disease

### **16.2 Medical Knowledge**

For PGDCC Program, IUSOM – Michigan Clinical Campus's, Ark Medical Center's (AMC's), and AMC-Affiliated Hospitals' located in Michigan, USA along with MIOT Hospital's in Chennai (India) and at other Cardiology Hospitals' & Institutes' situated in Asia, Educational Goals regarding Medical Knowledge via Consultation Service are to enable Clinical Trainees to:

- Understand the indications for transesophageal echocardiography
- Learn to interpret cardiac nuclear cardiac imaging reports appropriately
- Understand the cardiac risks of non-cardiac surgery

### **16.3 Practice-Based Learning and Improvement 1**

For PGDCC Program, IUSOM – Michigan Clinical Campus's, Ark Medical Center's (AMC's), and AMC-Affiliated Hospitals' located in Michigan, USA along with MIOT Hospital's in Chennai (India) and at other Cardiology Hospitals' & Institutes' situated in Asia, Educational Goal regarding Practice-Based Learning and Improvement via Consultation Service is to enable Clinical Trainees to do:

- Research one or more key clinical question related to a learning objective under the Patient Care and Medical Knowledge competencies

### **16.4 Interpersonal and Communication Skills**

For PGDCC Program, IUSOM – Michigan Clinical Campus's, Ark Medical Center's (AMC's), and AMC-Affiliated Hospitals' located in Michigan, USA along with MIOT Hospital's in Chennai (India) and at other Cardiology Hospitals' & Institutes' situated in Asia, Educational Goals regarding Interpersonal and Communication Skills via Consultation Service are to enable Clinical Trainees to:

- Develop skill in interviewing patients with problems in the scope of the subspecialty, with attention to education and culturally-sensitive language.
- Develop skill in giving a focused presentation of clinical findings to the attending faculty.
- Develop skill at communicating findings and recommendations of consultations to primary physicians, both verbally and in writing
- Learn to communicate appropriate information to patients who are seen in consultation, and in obtaining informed consent for procedures performed by the subspecialty.

### **16.5 Professionalism**

For PGDCC Program, IUSOM – Michigan Clinical Campus’s, Ark Medical Center’s (AMC’s), and AMC-Affiliated Hospitals’ located in Michigan, USA along with MIOT Hospital’s in Chennai (India) and at other Cardiology Hospitals’ & Institutes’ situated in Asia, Educational Goals regarding Professionalism via Consultation Service are to enable Clinical Trainees to:

- Demonstrate a commitment to excellence and continuous professional development.
- Demonstrate punctuality and preparation for consultation rounds.
- Demonstrate courteous and professional behavior during encounters with patients and families.
- Demonstrate appropriate professional relationships with colleagues, faculty, and other members of consultation team.
- Demonstrate respect for patients’ primary physicians in discussions with patients and within the consult team.
- Demonstrate a habit of evaluating consultations patients and conveying information in a timely manner

### **16.6 Practice-Based Learning and Improvement 2**

For PGDCC Program, IUSOM – Michigan Clinical Campus’s, Ark Medical Center’s (AMC’s), and AMC-Affiliated Hospitals’ located in Michigan, USA along with MIOT Hospital’s in Chennai (India) and at other Cardiology Hospitals’ & Institutes’ situated in Asia, Educational Goals regarding Practice-Based Learning and Improvement via Consultation Service are to enable Clinical Trainees to:

- Demonstrate a pattern of self-evaluation of performance, identifying gaps in medical knowledge during the evaluation and management of patients, and incorporating feedback into performance.
- Demonstrate a pattern of replicating the effective clinical decision making of faculty and fellows
- Demonstrate a pattern of independent reading and study related to the diseases encountered in the clinics and through hospital consultations.
- Demonstrate a pattern of using library and Internet resources to appraise the literature related to problems encountered during the rotation, and of applying evidence to patient care.
- Learn to critically appraise articles in the subspecialty.

## 16.7 Systems-Based Practice

For PGDCC Program, IUSOM – Michigan Clinical Campus’s, Ark Medical Center’s (AMC’s), and AMC-Affiliated Hospitals’ located in Michigan, USA along with MIOT Hospital’s in Chennai (India) and at other Cardiology Hospitals’ & Institutes’ situated in Asia, Educational Goals regarding Systems-Based Practice via Consultation Service are to enable Clinical Trainees to:

- Develop an understanding of the hospital resources available to the evaluation and management of patients with problems encountered by the subspecialty.
- Demonstrate sensitivity to health care costs, and insight into balancing costs and quality care.
- Demonstrate sensitivity in working with case managers, clinical coordinators, technicians, and other paramedical personnel to enhance the effectiveness of patient care.
- Demonstrate a knowledge of and commitment to the rules governing confidentiality of patient information.

## 17. PGDCC Program Structure

Postgraduate Diploma Certification requires successful completion of Post Graduate Diploma in Clinical Cardiology (PGDCC) Program over a period of 48 weeks (two semesters; duration of such each Semester being 24 weeks) full-time. PGDCC Program is being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia. This diploma course uses Multi-Faceted Learning Modules. This course has a rolling start, i.e., it can commence anytime of the year but will run for 48 weeks in total. The PGDCC is based on a series of lectures, ward rounds, clinical observations, clinical assessments, interactive seminars, tutorials, and case presentations. Each component is assessed and contributes to the final result. Prof. Hamid Sattar (Chief Cardiologist), Vice President – Clinical Sciences at IUSOM – Michigan Clinical Campus has the overall responsibility for this course assisted by Prof. Dewa Ramlu, IUSOM’s PGDCC International Program Director.

## 18. Criteria for Admissions

For acquiring an admission for Post Graduate Diploma in Clinical Cardiology (PGDCC) Program (total two Semesters; duration of each Semester being 6 months (24 weeks)) at International University School of Medicine (IUSOM) – Michigan Clinical Campus in Dearborn, Michigan, USA, being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, the minimum qualification requirements include Doctor of Medicine (MD) or Upper Second Class Pass in Bachelor of Medicine, Bachelor of Surgery (MBBS) or Arts (Dutch Degree in Medicine) or an equivalent overseas qualification acceptable to IUSOM. All applicants must normally be registered or certified in USA or in their country of origin/residency. All applicants must have two suitable references and required proficiency in English. The applicants can enroll at IUSOM – Michigan Clinical Campus **without** TOEFL, IELTS, SAT, ACT, or MCAT or any other Equivalent Standardized Test; such tests are **not** required **at all**.

## 19. Process Used to Select Students for IUSOM PGDCC Program

The process used to select students by International University School of Medicine (IUSOM) – Michigan Clinical Campus, located in Dearborn, Michigan, USA for its Post Graduate Diploma in Clinical Cardiology (PGDCC) Program (being offered at Ark Medical Center (AMC) and at AMC-Affiliated Hospitals located in Michigan, USA along with at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia) is detailed below:

- Applications are assessed on an individual basis by the course management team;
- Subject to meeting the academic entrance criteria students will be subsequently interviewed; and
- Students not meeting the academic entry requirements but with significant relevant clinical experience may be offered a special qualifying examination entrance route.

## 20. IUSOM Codes for PGDCC Program

Course Codes for the Semester 1 (**Duration:** 24 Weeks Clinical Rotation) and Semester 2 (**Duration:** 24 Weeks Clinical Rotation) of Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered by International University School of Medicine (IUSOM) – Michigan Clinical Campus at Ark Medical Center (AMC) and at AMC-Affiliated hospitals located in Michigan, USA) as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia are IUSOM—MI—PGDCC—01—01 and IUSOM—MI—PGDCC—02—01, respectively.

## 21. PGDCC Awarding Institution

For IUSOM – Michigan Clinical Campus's Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered with collaboration of Ark Medical Center (AMC) & AMC-Affiliated Hospitals in Michigan, USA and those of other Cardiology Hospitals & Institutes in Asia, PGDCC Awarding & Teaching Institutions and Related Facts are tabulated below:

<b>Awarding Institution</b>	International University School of Medicine (IUSOM)
<b>Teaching Institution</b>	Ark Medical Center (AMC) & AMC-Affiliated Hospitals situated in Michigan, USA; and MIOT Hospital, Chennai (India) and other Cardiology Hospitals & Institutes located in Asia.
<b>Name of Award</b>	Post Graduate Diploma in Clinical Cardiology (PGDCC)
<b>Name of Department</b>	Post Graduate Medical Education
<b>Name of Faculty</b>	Cardiology
<b>Mode of Study</b>	Full-time
<b>Language of Study</b>	English
<b>Date of Launching</b>	April 2013



## 22. Admission Applications for PGDCC Program

For receiving an Admission Application Forms for Post Graduate Diploma in Clinical Cardiology (PGDCC) Program for following medical education at International University School of Medicine (IUSOM) – Michigan Clinical Campus in Michigan, USA, please, either send an E.-Mail to IUSOM at:

[info@InternationalUniversity-SchoolOfMedicine.org](mailto:info@InternationalUniversity-SchoolOfMedicine.org)

or download the on-line / electronically fill-in version of this form by clicking at:

[http://www.InternationalUniversity-SchoolOfMedicine.org/files/IUSOM\\_PGDCCLADMISSION\\_APPLICATION\\_FORM\\_2.pdf](http://www.InternationalUniversity-SchoolOfMedicine.org/files/IUSOM_PGDCCLADMISSION_APPLICATION_FORM_2.pdf)

which then can electronically be filled-in on-line, be signed, be saved on a computer, and then be emailed (along with supporting documents) to IUSOM using its E.-Mail address given on the top of page 1 of this form.

## 23. Fees

Students are required to pay all IUSOM – Michigan Clinical Campus’s fees and related expenses (if applicable) 30 days prior to the start of PGDCC Program at IUSOM. All IUSOM Tuition Fees and other IUSOM Fees are Non-Refundable. Financial Information concerning IUSOM – Michigan Clinical Campus’s PGDCC Program is detailed below:

### Post Graduate Diploma in Clinical Cardiology (PGDCC) Fees and Related Expenses (Semesters 1 through 2)

Description	Amount*
Tuition Fee (For Each Semester) in US dollars	US \$35,200.00
Liability Insurance (For Each Semester) in US dollars	US \$ 600.00
Application Fee (One Time Only) in US dollars	US \$ 50.00
Others (For Each Semester) in US dollars	US \$ 500.00
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<b>TOTAL</b>	<b>US \$36,350.00</b>

\*All fees are non-refundable

## 24. Paying IUSOM Admission Application Fess for PGDCC Program and/or All other Fess

Non-Refundable IUSOM – Michigan Clinical Campus’s Admission Application Fee of US \$50.00 for Post Graduate Diploma in Clinical Cardiology (PGDCC) Program and/or all other Fees in US dollars funds can be paid to "**International University School of Medicine**" (Address: Kaya Mòfi 1-A, Bonaire, Caribbean Netherlands (Formerly Netherlands Antilles); Telephone: + 599 - 717 - 6792) either via a Demand Draft or preferably via a Wire Transfer to IUSOM Bank Account. To view the details on the procedure for Wire Transferring of Money to IUSOM Bank Account, please visit:

[http://internationaluniversity-schoolofmedicine.org/files/IUSOM - FEES PAYMENT - BANK TRANSFER INFO - RBC.2.pdf](http://internationaluniversity-schoolofmedicine.org/files/IUSOM_-_FEES_PAYMENT_-_BANK_TRANSFER_INFO_-_RBC.2.pdf)

## **25. Further Enquiries**

For further information and enquiries concerning IUSOM – Michigan Clinical Campus’s Post Graduate Diploma in Clinical Cardiology (PGDCC) Program being offered at Ark Medical Center (AMC) and at AMC-Affiliated hospitals located in Michigan, USA as well at MIOT Hospital in Chennai (India) and at other Cardiology Hospitals & Institutes situated in Asia, please contact:

Prof. Dewa Ramlu (International Course Director)

Tel: +1 (734) 223 9245

Email: [prof\\_dewa\\_ramlu@internationaluniversity-schoolofmedicine.org](mailto:prof_dewa_ramlu@internationaluniversity-schoolofmedicine.org)