

## EVALUATION GUIDELINES

### PG-DAC August 2018

#### 1. Evaluation

Evaluation is a necessary and essential part of conducting the PG-Diploma in Advanced Computing, as it provides important feedback and inputs to both the institute as well as the student. The institute gets an idea about the relative performance of each student, which also serves as feedback about the design and conduct of the course. The student gets a clear picture of his academic standing, individually and in comparison to his fellow students.

In order to ensure timely and efficient evaluation and certification of all students, the following guidelines are being issued and should be followed religiously.

#### 2. Evaluation Methodology

2.1 Each centre should have a Designated Responsible Member (DRM) for Evaluation.

2.2 The DRM Evaluation would be responsible for coordinating all activities relating to evaluation at the training centre and for communicating with CDAC ACTS Pune.

2.3 Evaluation is a compulsory part of the process of obtaining the PG-DAC. All students are required to pass each module of the course in order to be eligible to receive the PG-Diploma Certificate.

2.4 The faculty of every module should outline the objectives of the evaluation to be conducted for that module, so as to enable the student to prepare himself or herself properly.

#### 3. Modular Evaluation

3.1 Credit System: The credit-based training and grading system essentially implies a redefining of the curriculum into smaller measurable entities or '**modules**' with the hours required for '**learning**' these being at the primary focus and the development of a mechanism whereby these modules can be combined in different ways so as to qualify for a certificate Diploma. In a sense, therefore, the completion of a single 'module' of learning can pave the way for learning other modules and a combination of modules in keeping with the needs and interests of the learners illustrates the much talked about 'cafeteria approach' to learning with the Learner at the centre state of all academic transactions. Following are the features of Credit System.

3.1.1 Learner-centric approach

3.1.2 Workload estimated on time invested on learning rather than time invested on teaching

3.1.3 Workload=Theory classes + Practical Classes + Assignments + Seminar + Individual Learning + Preparation for examination

3.1.4 A program is divided into various modules or units and credit is assigned to each module/unit based on its learn ability.

3.1.5 Number of credit points assigned to a module depends upon the number of hours required to learn that module.

3.1.6 Credit Transfer Mechanism: Horizontal credit transfer(between similar level programs like Diploma to Diploma), Vertical Credit Transfer (credit transfer to higher level programs like certificate to diploma)

3.1.7 Inter institution credit transfer and intra institution credit transfer

3.1.8 Assumption: 1 credit = 25 hours of learner's load

3.1.9 Credit based evaluation will have following marking system:

- 40% end term examination + 40% Practical assessment + 20% internal assessment.
- Between 1-2 credit = 50 marks evaluation,
- Between 3-6 credit = 100 marks, if there is no lab then 50 marks evaluation (T-40+IA-10)
- Between 7-10 credit = 150 marks

3.2 Grading system:

The academic performance of a student shall be graded on a ten point scale. The letter Grades awarded to a student in all the courses shall be converted into Overall Grade Point Average (OGPA) respectively.

The method of evaluation of students in the course and the actual grading of a student's performance are based on the following guidelines.

3.3 Subject wise Evaluation

3.3.1 A separate evaluation process is to be conducted for every module of the course.

3.3.2 The evaluation for each module must be completed as per guidelines given below. The mid-module /surprise test evaluation is mandatory and can be taken after discussion with the concerned faculty.

3.3.3 Students are evaluated on a continuous and throughout the duration of the course to make a fair assessment of the skills acquired by them. To have a very uniform and fair assessment. The evaluation process is divided into two parts:

- ☐ Continuous Assessment - CA (60 marks)
- ☐ Course End Examination - CE (40 marks)

Continuous Assessment: This is being done primarily by the respective faculty in the form of Lab tests, assignments, quizzes etc conducted (with the help of the respective course coordinators) at regular intervals and as and when the portions of the modules are completed. These are basically internal exams and local to the centre. This process is further categorized into two parts.

- Lab test (40 marks)
- Internal test (20 mark): Assignment/Case Studies /quiz and other valuation methods like case study, viva, group discussion depending on the subject and the faculty (20 marks)

3.3.4 It is recommended to conduct the Effective Communications & Aptitude sessions for the benefit of the students and also conduct some surprise test for Effective Communications & Aptitude sessions.

3.3.5 The figures shown below indicate the weightage of each module in the final performance statement. The examination(s) for each module must be conducted for at least that number of marks. However, the centre may conduct evaluation for a higher number of marks, in which case the marks will be scaled down. For example, if the examination for the Operating

Systems Concepts module is conducted for 100 marks, the marks earned by the student will be scaled down to out of 40.

3.3.6 The weight age for each component will normally be:

Theory 40% (Through Centralized Course End Examination i.e. CCEE)

Laboratory 40%

Internal 20%

(Internal Assessment: Through Lab Assignment Evaluation, Surprise Tests, attendance, Viva, Seminars)

Note: Where a module does not have a practical component, the practical component weight age will be merged with the Internal Assessment component weight age.

3.3.7 A student must score a minimum of 40 percent marks in each component of the evaluation, and also in the aggregate score, in order to successfully clear the module. If a student scores more than 40% on aggregate but has scored less than 40% in one component of the evaluation, he will not be declared as passed.

3.3.8 The figures shown below indicate the weightage of each subject in the final performance statement for PG-DAC.

Subject Code	Module Name	Contact Hours			Total Workload	No of Questions	Credits	Marks			
		Theory	Lab	Total				Theory (CCEE)	Lab	IA	Total Marks
DAC01	Operating System Concepts	30	30	60	100	OS: 30, Linux: 10	4	40	40	20	100
DAC02	OOPs with C++ Programming	30	30	60	100	OOPs Concepts: 10, C++: 30	4	40	40	20	100
DAC03	Algorithm & Data structures	30	30	60	100	Problem Solving: 10 Data Structures: 30	4	40	40	20	100
DAC04	Software Application Development Tools & Techniques	40	-	40	75	SADT: 15, OOAD: 2, UML: 3	3	40	40	20	50
	Application Security & Testing	20	20	40	75	AST:20	3				
DAC05	Advanced Web Programming	24	26	50	75	Architecture of Web: 2, HTML5: 4, CSS: 4, PHP: 10, XML: 8, JSON: 6, Web Security: 4, UI: 2	3	40	40	20	100
DAC06	JavaScript Framework	30	30	60	100	JavaScript: 40	4	40	40	20	100
DAC07	Database Technologies	30	30	60	75	DBMS: 10, SQL: 16, SQL Programming: 10, NoSQL: 4	3	40	40	20	100
DAC08	Java Technologies-	34	36	70	125	Core Java: 40	5	40	40	20	100

	I (Core Java)										
DAC09	Java Technologies- II (Web Based Java)	42	48	90	150	Advanced Java: 40	6	40	40	20	100
DAC10	Microsoft .NET 2010	32	38	70	100	Framework: 5, C#.NET: 15, ASP.NET: 20	4	40	40	20	100
DAC11	Effective Communication	50	-	50	75	-	3	-	-	50	50
DAC12	Aptitude & General English	50	-	50	75	-	3	-	40	10	50
DAC13	Project	-	120	120	275	-	11	-	-	200	200
	<b>Total</b>			<b>900</b>	<b>1500</b>	<b>-</b>	<b>60</b>	<b>480</b>	<b>400</b>	<b>570</b>	<b>1350</b>

3.3.9 Overall 70% attendance is required for a student to become eligible for the CCEE.

### 3.4 General guidelines for award of grades:

The marks of all the components of a subject shall be added to get total marks out of 100. The rounding off shall be done on the higher side.

The grades shall be awarded on the basis of absolute marks, as mentioned in

Table-1.

Marks	Grade Points	Grade
90 and above	10	A
80 to Less than 90	9	B
65 to Less than 80	8	C
50 to less than 65	7	D
40 to less than 50	6	E
Less than 40	0	F

### 3.5 Calculation of Overall Grade Point Average:

**OGPA will be calculated by following formula:**

$$OGP = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

Where  $C_i$  is number of credit hours assigned to a module  $i$  and grade point secured by the students is ( $G_i$ ) in that module.

OGPA is calculated by multiplying the number of credit hours assigned to a module by the value of the grade earned in that module.

**Formula of conversion of equivalent Percentage of OGPA:**

$$\text{Percentage marks} = (OGPA - 0.5) * 10$$

**Illustrations of Calculation:** - The illustration for the conversion of marks into grades in theory & practical, if any in individual module are as shown below as :-

Subject Code	Module Name	Secured Marks	Total Marks	Credits (C)	Earned Grade	Earned Grade point (G)	C *G	OGPA= $\sum C *G / \sum C$
DAC01	Operating System Concepts	90	100	4	A	10	40	524/60=8.33
DAC02	OOPs with C++ Programming	85	100	4	B	9	36	
DAC03	Algorithm & Data structures	70	100	4	C	8	32	
DAC04	Software Application Development Tools & Techniques	40	50	3	B	9	27	
DAC05	Advanced Web Programming	75	100	3	C	8	24	
DAC06	JavaScript Framework	70	100	4	C	8	32	
DAC07	Database Technologies	80	100	3	B	9	27	
DAC08	Java Technologies-I (Core Java)	75	100	5	C	8	40	
DAC09	Java Technologies-II (Web Based Java)	85	100	6	B	9	54	
DAC10	Microsoft .NET	75	100	4	C	8	32	
DAC11	Application Security & Testing	75	100	4	C	8	32	
	Upcoming Technology (Parallel Computing)							
DAC12	Effective Communication	70	50	3	C	8	24	
DAC13	Aptitude & General English	70	50	3	C	8	24	
DAC14	Project	190	200	10	A	10	100	
	Total	1150	1350	$\sum C =60$			$\sum C * G=524$	

Then conversion of equivalent Percentage of OGPA =  $(OGP-0.5)*10 = (8.33-0.5)*10 = 78.3 \%$

#### 4. Centralized Course End Examination (CCEE):

After completion of the all module of PG-DAC, a written examination CCEE (Centralized Course End Examination) will be held, which will test the knowledge of the students about the theoretical concepts of each module and it is a compulsory part of the evaluation. Conducting CCEE involves performing duty with responsibility. A small mistake in the process may hamper the whole system. Everyone has to play their role in an effective manner. It is a joint effort work which has to be carried out in a combined way. Right from receiving the question paper from the national resource centres (NRCs) to sending the answer sheet for evaluation dealt with lot of responsibility.

##### 4.1 Guidelines of CCEE:

CCEE will be conducted normally before the commencement of Project work of PG-DAC.

The written examination should be of 60 minutes duration. It should consist of objective questions. A typical objective type exam paper should contain the following types of questions: –

- ° Multiple choice
- ° Yes or No
- ° True or False

Objective questions are useful in testing the recognition and recall abilities of students. They also help in keeping the exam short and easier to evaluate.

For the pure objective type question papers, there will be 50 objective type questions with 4 maximum answer options having only one correct option. The value of each objective type question is of one mark only. There will not be any negative marks for the wrong answers given by the students.

#### 4.2 Guidelines for setting Question Papers

While setting the question papers for theory Exam the following weightages should be assigned as per the difficulty level of the questions.

Levels	Requirements	Weightage
Level A - Easy	Requires elementary knowledge which may be obtained by attending all lectures and completion of mandatory lab assignments	25%
Level B - Intermediate	Requires thorough study of all course material, attendance at all lectures and completion of mandatory assignments	50%
Level C - difficult	Requires study and lab work beyond the prescribed course material and mandatory assignments	25%

#### 4.3 Guidelines for generating theory questions

- 4.3.1 Question paper setter has to use sample paper format provided by C-DAC, ACTS Pune
- 4.3.2 Mention the module name without fail.
- 4.3.3 Language of the question should be easy to understand.
- 4.3.4 The answers must have relevant objective type choices and “only one” correct answer.
- 4.3.5 The questions must be prepared by referring appropriate books, reference books, reference material, and course material having good information.
- 4.3.6 The question must be created by the domain expert afresh and should not be copied directly from any book, website, existing previous question papers etc.
- 4.3.7 The question should be unique and should have not been published anywhere.
- 4.3.8 Please mention the source of the question wherever possible, as it may help us in referring the same for detailing if required.
- 4.3.9 The caliber of the question should suffice the growing need of competition.
- 4.3.10 The question paper should have questions covering the entire syllabus.
- 4.3.11 The questions have to be typed in MS Word with “Arial” having letter size 12 point. Do not bold any letter, word or sentence in any part of the question paper.
- 4.3.12 It is essential to give password to the word document and send/tell the password separately.
- 4.3.13 It is essential that utmost care is taken at your end to maintain the secrecy of the soft copy at all time.
- 4.3.14 An expert team will review all questions. The questions will be filtered as per following:

- If the question is incomplete
- If the answer of the question is wrong
- If the question is not there in the syllabus
- If the question appears more than once
- If the question is too lengthy
- If the question is irrelevant
- If the options to the questions are irrelevant

#### 4.4 Template for generation of Questions

Date:

Question generated by: Mr. /Ms.

Topic / Module:

Q. No.

Question:

<Text of the question>

Format Type 1 (If answer choices are lengthy, one or more than one line)

Answer Choices

A:

B:

C:

D:

Format Type 2 (If answer choices are short, two to three words)

Answer Choices

A:

B:

C:

D:

Format Type 3 (If answer choices are very short, one word only)

Answer Choices

A:

B:

C:

D:

Difficulty Level: Easy / Intermediate / Difficult

Reference: (Name of books)

(If question taken from book) (Mention name of the book, Author, ISBN)

Total Number of Questions Generated: \_\_\_\_\_

#### 4.5 Template for Answer Key:

Module name			
Question No.	Answer Keys	Question No.	Answer Keys
1		21	
2		22	
3		23	
4		24	
5		25	
6		26	
7		27	
8		28	
9		29	
10		30	
11		31	
12		32	
13		33	
14		34	
15		35	

16		36	
17		37	
18		38	
19		39	
20		40	

#### 4.6 Evaluation of Lab Exam should be based on the following criteria:

Criteria	Details	Max Marks	Marks Obtained
Algorithm	Documentation of Algorithm and Flowchart	2	
	Program adheres to the algorithm and flowchart	2	
Efficiency	Program is using only the required number of variables /conditions/loops/pointers etc and is optimal	2	
Correctness	The program produces desired output for a given input	20	
	The program handles all valid and Invalid inputs		
Software Engineering Principles	The program has meaning variable/function names	2	
	The program is commented properly (At least 20% of the code should be commented)	2	
Viva		10	
<b>Total Marks</b>		<b>40</b>	

#### 5. Evaluation of answer papers:

Use of OMR sheets will be useful for processing the result of multiple choice exams. OMR is an effective way to collect data, process for the result and also it takes less time with greater accuracy in less effort. Centres need to follow the best way for scanning the OMR sheets, process the result and publish the result. Centres which are not using OMR can use OCR to conduct the exams and evaluate the students. Centre which are not using OMR or OCR can evaluate the students manually and process the result.

If a student requests for re-evaluation then the student has to pay Rs. 150 /- for each module and it should be routed through training centre. The Re-evaluation fee should be paid to the respective C-DAC training Centres, in case of Authorized Training Centres associated to C-DAC, Pune, payment to be made in favour of "C-DAC, ACTS" and payable at Pune. (This is applicable only for theory exam)

#### 6. Moderation:

Grace marks would be awarded as per the methodology below:

- Maximum of 4% of total course end theory exam marks can be awarded to a candidate.
- Maximum of 8% of individual course end module test marks (maximum marks) can be awarded per module.

S No.	Name of the course	Total Marks	Maximum grace marks for the course	Maximum Marks per module	Maximum grace marks per module
1	PG-DAC	480	19	40	3

On completion of the moderation exercise the revised marks should be updated in the marks database.

#### 7. Re-examinations:

The following conditions will be applicable for the course end re-exam:



- 7.1. Students who do not appear for an exam on the scheduled date will not have an automatic right to reexamination. Only those students who, in the opinion of the centre/course coordinator have a genuine reason for being absent may be allowed to appear for a re-exam.
- 7.2. Students who have failed an exam may be allowed to appear for a re-exam.
- 7.3. The re-exam should be conducted following the same process as the regular examination.
- 7.4. Students, who failed/remained absent in the Course End Examination conducted by C-DAC, shall be allowed to appear in the re-examination only once.
- 7.5. Students who remain absent or fail in the re-examination will not get any further chance for appearing for the re-examination. In such case the candidate can receive the Performance Statement and the certificate of participation without any grade.
- 7.6. On evaluation of their answer sheets 20% of the marks obtained by the students will be deducted (towards de-rating for re-examination) for arriving at the final score, i.e. in order to clear the module test the student has to score a minimum of 48% marks instead of 40%.
- 7.7. The fee for the re-exam is currently NIL.
- 7.8. There will be no re-exam for the re-exam

## **8. Evaluation Guidelines for Effective Communication**

There should be module end exam in Effective Communications (EC) for the benefit of the students. Total marks for evaluation will be 100 for Effective Communication/Presentation / Seminar / GD / Attendance. After evaluation marks need to be converted to grades as per the scale given below, which will be given in the mark sheet.

### **8.1 Evaluation method:**

Sl. No.	Module Name	CCEE Marks	IA Marks	Total Marks
1	Communication skills	0	50	100
2	Presentation / Seminar/GD	0	40	
3	Attendance for EC sessions	0	10	

### **8.2 Internal evaluation Method for Effective Communication**

The examination for this module must be conducted for at least that number of marks. However, the centre may conduct evaluation for a higher number of marks, in which case the marks will be scaled down. For example, if the examination for Presentation is conducted for 100 marks, the marks earned by the student will be scaled down to out of 40.

It is recommended to conduct some surprise tests for Effective Communications as Internal marks.

Centres can evaluate on Test/Assignment/Presentation/Seminar/Group discussion and may depend on subject & faculty.

### **8.3 Guidelines for Presentation/Seminar/Group Discussion Evaluation**

Evaluation of Presentation, Seminar and Group Discussion needs to be carried out as per the following guidelines.

- a. Submission of their seminar topic along with the references.
- b. Two presentations each for 15 minutes on the seminar restricted to 15 – 20 slides followed by evaluation.
- c. Presentation/Seminar evaluation for 100 marks will be split up as follows:
  - i. Communication skills – 20
  - ii. Use of verbal and non verbal language – 10
  - iii. Presentation skills – 20
  - iv. Contents of the seminar/GD – 10
  - v. Contents Flow of Presentation – 10
  - vi. Depth of Knowledge in the topic – 10
  - vii. Viva Voce – 10
  - viii. Attendance – 10

#### **9. Project Module:**

- 9.1. Project work should be start at the time of Software Application Development Tools & Techniques Module and database design should be complete at the time of Database Technologies Module.
- 9.2. At the end of first half student should be ready with all mandatory documents with database design and in the second half he will decide the language on which he wants to do the project.
- 9.3. Performance in the Project module will be awarded in grade. The Project grade will be mentioned separately on the Performance Statement and will have no effect on the overall grade obtained by a student.
- 9.4. Students may do industry-sponsored projects, but will be required to do the project work within the centre.
- 9.5. Evaluation of the Project module will take place as following:
  - 9.5.1. Internal evaluation will be take place at mid of the module
  - 9.5.2. External evaluation will take place at the end of the moduleBased on both evaluations, final grade will be awarded & communicated to C-DAC ACTS, Pune

#### **10. Ensuring Security of Evaluation data/records:**

- 10.1. Ensure that all data relating to evaluation of students is stored in a secure place that cannot be accessed by unauthorized personnel.
- 10.2. All question papers must be prepared and stored in a separate area specifically designated for the purpose.
- 10.3. Whenever any external faculty sets a question paper, ensures that he should follows the guidelines given by C-DAC ACTS Pune.
- 10.4. Ensure that only one copy of any question paper is prepared in physical (printed) form for review and revision.
- 10.5. When the question paper is finalized, print out one master copy and gets it signed by the paper setter, Reviewer and DRM Evaluation.
- 10.6. Prepare required number of photocopies of the question paper and store them in a safe and secure location before the exam.
- 10.7. The data relating to evaluation of students, such as soft copies of question papers and answer keys, student marks database and performance statements etc. must be kept in a separate domain/directory which is accessible only to authorized personnel. Ensure that the data is regularly backed up.

- 10.8. The question papers for the theory as well as the laboratory examinations at all the centres will be set by CDAC, ACTS Pune. The centres according to guidelines provided by C-DAC, ACTS Pune, will conduct the evaluation of the laboratory and assignments locally.