3.7   Module – 7: Creative Problem Solving, Innovation and Meaningful Research & Development

Performance Evaluation Rubric of FIP Phase – II in the Respective Institute
<u>by AICTE Identified Mentor</u>

Coordinator: Dr. P. K. Tulsi, Professor (Retd.), Education & Educational Management Department, NITTTR Chandigarh
Editor: Dr. Joshua Earnest, Professor of Electrical Engineering, NITTTR Bhopal

Name of Inductee Trainee Teacher: ……………………………………………………..
Name of Department: ……………………………………………………………………………
Name and address of Institution of Inductee Trainee Teacher: …………………………

A.   Major Learning Outcomes of the Module
The following are the major outcomes the inductee trainee will have to display *in three term-work* (indicated by different colours) during the on-the-job-the training in Phase – II:
1. Solve problems creatively.
2. Innovate in the processes, products and services in work life.
3. Build effective teams for R&D.
4. Build student teams.
5. Undertake research to improve the various sub-components of the technical education systems.

B.   Rubric of Module – 7

(Tick √ in relevant **cell** for each KPC and total the final marks in last row)

Sl. No.	Key Performance Criteria (KPC) of Module Outcomes Displayed by Inductee Teacher	Very good (4)	Good (3)	Fair (2)	Needs to Improve (1)	Suggestions to improve
1	a) **Identify problem**	Accurately Identifies all key elements in the problems and relationship among them	Accurately Identifies major key elements in the problems and relationship among them	Accurately Identifies some key elements in the problems and relationship among them	Unable to accurately identify any of the key elements in the problems and relationship among them	
	b) **Collect relevant information/ data**	Presents relevant, sufficient and credible data/ information	Presents relevant, sufficient and credible major data/ information	Presents relevant, somewhat sufficient and somewhat credible data/ information	Presents irrelevant, insufficient and not credible data/ information	

Sl. No.	Key Performance Criteria (KPC) of Module Outcomes Displayed by Inductee Teacher		Very good (4)	Good (3)	Fair (2)	Needs to Improve (1)	Suggestions to improve
	c)	Analysis of information/ data	Analyze all the data/information for accuracy and validity taking account of all limitations	Analyze major data/information for accuracy and validity taking into account major limitations	Analyze part of the data/information for accuracy and validity but fails to take into account limitations	Analyze insufficient data/information but fails to take into account limitations	
	d)	Develops a creative solution	Develops multi-dimensional approach based on multi-perspectives to develop creative solution to problem	Develops multi-dimensional approach based on major perspective to develop creative solution to problem	Develops the approach based on selected perspective to develop solution to problem	Unable to develop the approach to develop solution to problem	
	e)	Implement creative solution to problem	Implements the approach to arrive at logical and highly creative solution to problem	Implements the approach to arrive at logical and moderately creative solution to problem	Implements the approach to arrive at logical but not creative solution to problem	Implements the approach but fails to arrive at logical and creative solution to the problem	
2	a)	Define problem	Exhibits clear understanding of problem from multi-perspectives	Exhibits clear understanding of problem from majority of perspectives	Exhibits understanding of problem from limited perspectives	Exhibits no understanding of problem	
	b)	Identify innovative solution	Identifies innovative solution technically feasible	Identifies innovative solution, technically feasible but with minimal risk	Identifies innovative solution, technically feasible but with maximum risk	Identifies solution neither innovative nor technically feasible	
	c)	Align innovation to institute Objectives	Innovation is completely aligned to objectives of institute improvement	Innovation is directly aligned to objectives of institute improvement	Innovation is indirectly aligned to objectives of institute improvement	Innovation is not at all aligned to objectives of institute improvement	

Sl. No.	Key Performance Criteria (KPC) of Module Outcomes Displayed by Inductee Teacher	Very good (4)	Good (3)	Fair (2)	Needs to Improve (1)	Suggestions to improve
	d) **Impact on student learning**	Innovation having high impact on student learning	Innovation having moderate impact on student learning	Innovation having some impact on student learning	Innovation having least impact on student learning	
	e) **Applicability of innovation**	Innovation is applicable across disciplines	Innovation is applicable across majority of disciplines	Innovation is applicable across limited disciplines	Innovation is not all applicable across disciplines	
3	a) **Contribution to ideas**	Contributes original ideas on his/ her own	Contributes ideas on his/ her own	Express agreement with ideas given by others	Does not contribute ideas or express agreement	
	b) **Individual responsibility & standards**	Completes individual responsibilities and exceeds the desired standards	Completes individual responsibilities to the desired standards	Completes individual responsibilities but not to the desired standards	Does not complete individual responsibilities	
	c) **Interaction with other and recognition to others**	Always Interact with others and give respect and recognition to others	Most of the time Interacts with others with respect and recognition to others	Sometimes interact with others with respect and recognition to others	Never interacts with others with respect and recognition to others	
	d) **Support to others**	Supports others in accomplishing assigned responsibilities without asking	Supports others, when asked in accomplishing assigned responsibilities	supports others half-heartedly when asked, in accomplishing assigned responsibilities	Neither supports others on his own nor when asked for	
	e) **Facilitate decision making/ resolving conflicts**	Helps in taking decisions and resolving conflicts	Helps in taking decisions and when asked for helps in resolving conflicts	Helps in taking decisions	Neither facilitates decision taking nor resolving conflicts	
4	a) **Building Student teams**	Constitutes teams with members having	Constitutes teams with members having	Constitutes teams with members	Constitutes teams without any	

Sl. No.	Key Performance Criteria (KPC) of Module Outcomes Displayed by Inductee Teacher	Very good (4)	Good (3)	Fair (2)	Needs to Improve (1)	Suggestions to improve
		complementary skills	complementary skills but some having similar skills	having similar skills	consideration of skills	
	b) **Accessibility to student teams**	Remains accessible to team for facilitation throughout the work	Remains accessible most of the time to teams for facilitation	Remains accessible to teams sometimes for facilitation	Is not accessible to team during the work	
	c) **Monitor progress**	Continuously monitors progress of teams	Frequently Monitors progress of team	Sometime monitors progress of team	Never monitors progress of team	
	d) **Evaluate team performance**	Evaluates team performance based on self, peer and teacher assessment	Evaluates team performance based on peer and teacher assessment	Evaluates team performance based on teacher assessment	Does not evaluate team performance	
5	a) **Define a research problem**	Selects and defines a significant problem	Selects a significant problem	Selects and defines a problem	Selects a problem but fails to adequately define it.	
		Both are same				
	b) **State research questions**	States adequate number of research questions accurately	States majority of the research questions accurately	States some research questions accurately	States research questions inaccurately	
	c) **Select research design and describe research procedure**	Selects relevant method, adequate sample, appropriate tools and statistical techniques	Select relevant method, adequate sample, somewhat relevant tools and statistical techniques	Select relevant method, inadequate sample, appropriate tools and statistical techniques	Select relevant method, adequate sample, tools and statistical techniques	
	d) **Collect data/ information**	Collect relevant and reliable data/ information from all sources	Collect relevant and reliable data/ information from majority of sources	Collect relevant data/ information from selected sources	Collect data/ information from limited sources	

Sl. No.	Key Performance Criteria (KPC) of Module Outcomes Displayed by Inductee Teacher	Very good (4)	Good (3)	Fair (2)	Needs to Improve (1)	Suggestions to improve
e)	Analysis of data/ information	Interprets the data/ information using appropriate statistical techniques	Interprets major data/ information using appropriate statistical techniques	Interprets part of the data/ information using appropriate statistical techniques	Interprets the data/ information using inappropriate statistical techniques	
f)	Interpretation of Results	Interpret the findings correctly and draw logical conclusions	Interpret majority of the findings correctly and draw logical conclusions	Interpret some of the findings correctly and draw logical conclusions	Interpret the findings incorrectly and draw illogical conclusions	
g)	Research Report	Write a well-planned and organized research report	Write reasonably planned and organized research report	Write a research report omitting some details	Write a research report omitting major details	
	Total Score of 'B'					

C. Attainment of Competency Module - 7

Module - 7 Competency based on NITTT Policy (2019)	Total Score of 'B'
Undertakes research and development activities to find innovative solutions to the problems in teaching-learning situations and in their respective domain areas required by the society.	

Note: Qualifying Score for Each Module is 50%

D. Comments/Suggestions about team work/leadership/inter-personal communication and any other

………………………………………………………………………………

………………………………………………………………………………

E. Evidences of Module 7 to be Maintained by Inductee Teacher

Sl. No.	Evidences Maintained in E-portfolio files by Inductee Teacher	Yes	No
1	a) Creative Problem solving: Anecdotal record of/ documentation related to problem(s) solved creatively		

Sl. No.		Evidences Maintained in E-portfolio files by Inductee Teacher	Yes	No
	b)	Creative Problem solving: Photographs of problem(s) solved, if available, if any		
	c)	Creative Problem-solving: Recognition at institute level, etc.		
2	a)	Innovations in teaching learning- Product available (Teaching-learning strategy, Media/ evaluation tool, assignment, etc.), documented record.		
	b)	Innovations in Recognition at institute level		
	c)	Innovations leading to Patent		
3	a)	Documentation related to team work		
	b)	R&D: through Teamwork Research reports, Papers published, Photographs or video recording if any		
	c)	Peer assessment related to team work, if any		
4	a)	Reports of Research		
	b)	Experimental set-ups of Research		
	c)	Tools used of Research		
	d)	Product as an outcome of Research		
	e)	Paper published on the basis of research undertaken		

Signature…………………………………………………………………………………………

Name of the Mentor..

AICTE Faculty Code: …………………………………………………………………………

Designation of the Mentor...

Name and address of Institution of Mentor: ……………………………………………………

Place: …………………………

Date: ……………………...