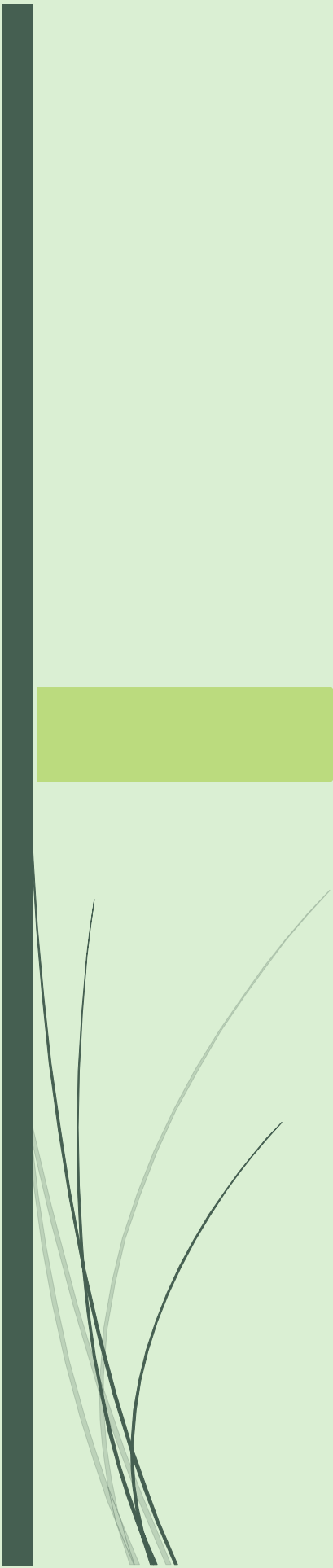
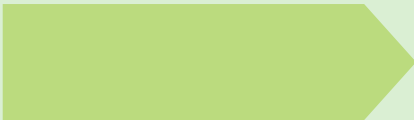




POST DIPLOMA IN AROMA PROCESS & ITS MANAGEMENT (PDAPM)



QUALIFICATION FILE

**Ministry of Micro, Small and Medium
Enterprises, New Delhi
(MSME-Technology Centre)**

NATIONAL SKILL QUALIFICATION FRAMEWORK QUALIFICATION FILE

Version 6: Draft of 08 March 2016

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Fragrance & Flavour Development Centre

Makarand Nagar

Kannauj-209727 U.P

Name and contact details of individual dealing with the submission

Name: Mr. S V Shukla

Position in the organisation: Director

Address if different from above: Same as above

Tel number(s): 9415334050

E-mail address:shaktiffdc@gmail.com

List of documents submitted in support of the Qualifications File

- 1. Curriculum Document**
- 2. Evaluation (Marking) Scheme**
- 3. Industrial Validations**

SUMMARY

Qualification Title	Post .Diploma in Aroma Process & its Management
Qualification Code	MSME/PDAPM/30
Nature and purpose of the qualification	Nature – Post. .Diploma in Aroma Process & its Management Purpose Learners who attain this qualification are competent in managing the cultivation, and processing of aromatic crops and value addition essential oil with application of it in fragrances & flavours, so that one can get a job in essential oils industry or become an entrepreneur. Qualifying learners attain skills in cultivation & processing of distillation and extraction of aroma bearing plants for essential oils with application in fragrance and flavour
Body/bodies which will award the qualification	Ministry of Micro, Small and Medium Enterprises, New Delhi (Certificate Awarded by FFDC, Kannauj)
Body which will accredit providers to offer courses leading to the qualification	Ministry of Micro, Small and Medium Enterprises, New Delhi (Certificate Awarded by FFDC, Kannauj)
Body/bodies which will carry out assessment of learners	Examination Cell of Fragrance & Flavour Development Center, Kannauj
Occupation(s) to which the qualification gives access	Aroma Manager
Licensing requirements	N/A
Level of the qualification in the NSQF	6
Anticipated volume of training/learning required to complete the qualification	1560 hours
Entry requirements and/or recommendations	B.Sc/ B.Tech or Graduation in any discipline with 2 years experience of industry
Progression from the qualification	Job Progression: After completion of course and after 3 years of field experience the trainee can work as a Senior Aroma manger and after that 5 years of experience, the person can work as a Manager Aroma Industry
Planned arrangements for the Recognition of Prior learning (RPL)	Yes.
International comparability where known	Not Known

Date of planned review of the qualification. October 2016

Title of Unit	Mandatory / Optional	Estimated Size (learning Hours)	Level
Basic Knowledge about aromatic cultivation	Mandatory	60 hours	4
Basic knowledge about aromatic herbage for distillations/extraction	Mandatory	60 hours	5
Hydro distillation techniques	Mandatory	60 hours	5
Hydro-steam Distillation	Mandatory	60 hours	5
Steam Distillation	Mandatory	60 hours	5
Solvent extraction	Mandatory	90 hours	5
Maintenance of steam generator	Mandatory	60 hours	5
Maintenance of thermic fluid heater	Mandatory	60 hours	5
Maintenance of distillation units	Mandatory	60 hours	5
Separations of oils	Mandatory	30 hours	5
Fractionation of oils	Mandatory	120 hours	5
Value addition of essential oils	Mandatory	60 hours	4
Basic analytical techniques	Mandatory	60 Hours	5
Basic Physical Properties of oil	Mandatory	60 Hours	5
Basic Chemical properties of oil	Mandatory	60 Hours	5
Basic Instrumental analysis of oil	Mandatory	120 Hours	5
Basic of perfumery	Mandatory	90 Hours	6
Basic of Flavours	Mandatory	90 Hours	6
Basic of Industrial Management	Mandatory	20 Hours	6
Financial Management	Mandatory	30 Hours	6
Govt. Policies, labour law etc	Mandatory	30 Hours	6
Project report preparations	Mandatory	20 Hours	6
Project work	Mandatory	20 Hours	6
Internship (Industry, Research. Institute etc.)	Mandatory	150 Hours	4
To understand the Quality and Quality System, ISO-9001:2008 Quality Management System and Safety Management System	OPTIONAL	30 Hours	5
	Total	1560 Hours	

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum Document or a Qualification Pack.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

SECTION 1

ASSESSMENT

Body/Bodies which will carry out assessment:

TDC-FFDC, Min. of MSME, Govt. of India, Kannauj

The assessment is carried out by assessment cell of the organization.

How will RPL assessment be managed and who will carry it out?

The RPL assessment is also managed by assessment cell of TDC-FFDC, Min. of MSME, Govt. of India) by written, skill and practical test.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

The assessment is carried out by written examination, practical outcomes, working capacity and skill test. The all outcomes of assessment will maintained in fair documents in terms of marks and grading system given by assessment body.

Please attach any documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

1. ASSESSMENT GUIDELINE:

- Criteria for assessment based on each learning outcomes, will be assigned marks proportional to its importance.

- The assessment for the theory & practical part is based on knowledge bank of questions created by trainers and approved by Examination cell (Assessment cell of FFDC.Kannauj)

- For each Individual batch, Examination cell will create unique question papers for theory part as well as practical for each candidate at each examination.

- To pass the Qualification, every trainee should score a minimum of 75% cumulatively (Theory and Practical)

- Assessment comprises the following components:

>Job carried out in labs/workshop

>Record book/ daily diary

>Answer sheet of assessment

>Viva –voce

>Progress chart

>Attendance and punctuality

2. ASSESSORS:

FFDC faculty teaching the processing of aromatic plants for the essential oils and maintenance of process plant also assesses the students as per guidelines set by assessment cell of FFDC. Faculties are been trained from time to time to upgrade their skills on various aspects such as conduction of assessments, teaching methodology etc. These training are usually conducted at FFDC, Kannauj

3. ELIGIBILITY TO APPEAR IN THE EXAM:

Minimum 75% attendance is compulsory for the students to appear for the assessments.

4. MARKING SCHEME:

Sr. No.	Method of Assessments	Weightage (Max. marks)	Evaluator
1	Written test	100	Trainer + Moderator (Head of respective divisions)+ Examiner nominated by Assessment cell (FFDC)
2	Practical test	100	

5. PASSING MARKS:

Passing criteria is based on marks obtain in attendance record, term works , assignments, practical's performance, viva or oral exam, module test, practical exam and final exam

Minimum Marks to pass practical exam – 60%

Minimum Marks to pass final exam – 40%

6. RESULTS AND CERTIFICATION:

The assessment results are backed by evidences collected by assessors. Successful trainees are awarded the certificates by FFDC, Kannauj.

ASSESSMENT EVIDENCE

Assessment evidence comprises the following components document in the form of records:

- 1) Job carried out in labs/workshop
- 2) Record book/ daily diary
- 3) Answer sheet of assessment
- 4) Viva –voce
- 5) Progress chart
- 6) Attendance and punctuality

Title of Component:

S.No.	Outcomes to be assessed	Assessment criteria for the outcome
1.	Selection of Aromatic plants for Essential	1.1 Basics cultivation of some common aroma bearing plants. 1.2 Cultivation practices of aromatic grasses like – Lemongrass, citronella, palmarosa
2.	Perform following operations for distillation of Essential oils Hydro and Hydro-steam Distillation and its maintenance	2.1 Laboratory scale distillation of aromatic crops. 2.2 Determination of oil content in the herbage of aromatic crops. 2.3 Methodology involve in hydro distillation and hydro-steam distillation. 2.4 Methodology involve in Field distillation unit and its basic operation. 2.5 Basic parts of the distillation unit 2.6 The types of boilers and basic parts of boiler and its principle. 2.7 The condensation process and equipments
3.	A- Solvent extraction and its maintenance	3.1 Basic of extraction technique and types of solvents. 3.2 Laboratory scale solvent extraction by soxhlet apparatus. 3.3 Pilot scale solvent extraction of aromatic plants etc. 3.4 Routine maintenance of the solvent extraction plants, 3.5 Safety precaution needed for the solvent extraction plant
4.	B- Steam Distillation and its maintenance	4.1 Basic of separation of liquids 4.2 Boiling point of liquid. 4.3 Separation due to the different in boiling points. 4.4 Parts of the fractionating columns. 4.5 Parts of the thermic fluid heater. 4.6 Routine maintenance of the thermic fluid heater. 4.7 Routine maintenance of fractionating columns

5.	Basic of Essential oil Chemistry	5.1 Isoprene rule, special isoprene rule, 5.2 Terpenes Chemistry 5.3 Aliphatic compounds, 5.4 Benzenoids 5.4 Eterocyclic compounds
6.	Analysis of Essential oil as per the standards. A- Physical Properties of oil B- Chemical properties of oil	specific gravity optical rotation, solubility, refractive index, congealing point, acid value, saponification value, ester value, ester value after acetylation, carbonyl value, alcohol and phenol value)
7.	C- Basic Instrumental analysis of oil	7.1 Gas liquid chromatography 7.2 GC-MS (principle, instrumentation and application) for qualitative and quantitative assessment of essential oils, aroma chemicals, fragrance & flavour.
8.	Perform evaluation of Essential oils, Aroma Chemicals for creation of Fragrances and Flavours	8.1 Basics of fragrances. 8.2 To memorize the aroma chemicals 8.3 To assess the use of aroma chemicals in different fragrances and flavours 8.4 To know the classifications of the fragrant raw materials according to the volatility and odour. 8.5 Fundamentals of Floral accords like rose, jasmine, lilac, lily of the valley, carnation, gardenia etc. 8.6 Creation of fragrance with example of Rose & Lavender. 8.7 Formulation of flavor with example of Rose & Vanilla. 8.8 Storage of fragrant raw materials 8.9 Safety & regulatory aspects of fragrance & flavour

9.	Follow safety at working area and to understand the basic of Industrial Management, Financial Management and Govt. Policies, labour law etc Project report preparations	9.1 To know the business management particularly human management. 9.2 Marketing management 9.3 Govt. Policies and procedure 9.4 Govt. Rules and regulations particularly taxation and labour laws etc.
10	Project work and preparation of reports	
11	Internship (Industry, Research. Institute etc.)	
12	To understand the Quality and Quality System, ISO-9001:2008 Quality Management System and Safety Management System	
	Means of assessment 1 and 2 The theoretical and practical knowledge will be assessed by conducting examination of particular modules and practical observation of learner by examination cell. The competence level will measured according to marks obtained in particular theory and practical. The skill development and working capacity will also observed by viva-voice and method on working.	
	Pass/Needs Improvement/Fail The word Pass/Needs improvement/Fail is applied according to the practical performance during assessment. i) Minimum Marks to pass practical exam – 60% ii) Minimum Marks to pass Theory exam – 40%	

SECTION 2

EVIDENCE OF LEVEL

Awarding bodies will enter a proposed NSQF level for the qualification in the Qualification File Summary. This section asks for the evidence on which that proposal is based. The evidence must refer to the level descriptors of the NSQF.

NSDA recommends an approach to working out the level of qualifications which starts with the level descriptor domains (Process, Professional knowledge, Professional skill, Core skill and Responsibility: see annex A). Two variants for providing the evidence of level are offered here: Option A and Option B in the following pages. Awarding bodies should choose the option which best suits the qualification.

NSQF QUALIFICATION FILE

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OPTION A

NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Professional knowledge	- Describe general aromatic crops - Describe general method of distillation of aromatic crops - Describe extraction of oil by solvent extraction process - Know the basic analysis of the essential oils - Describe different notes - Know the basic of Aroma creation	As job holder is dealing with different aroma chemicals natural and synthetic both which is to be used for creation of fragrances and flavours production., it is required that job holder should possess overall (Comprehensive) theoretical knowledge in the field of Aroma creation and production. By distillation/ extraction or fractionation techniques.. Job Holder shall apply his/her comprehensive knowledge with clear context with a broad concept in extraction of essential oils by aromatic crops distillation or extraction by solvent or fractionation techniques. Job Holder shall use basic analytical techniques to know about the quality of the oils using different analytical techniques . ob holder shall use various standard for comparison of the quality like BIS, ISO, etc., select appropriate standard as per requirement of Specification of element. Job holder shall use best manufacturing process & process capabilities, manufacturing process in extraction of the essential oils.	Level 5

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Professional skill	- Identify requirement and accordingly select the process for essential - Create and evaluate essential oils and aroma chemicals. - Standardized the process parameter for the aromatic crops - Troubleshoot the problems in distillation / extraction of the oils / aroma chemicals.	Job holder shall carry out the design and development of tool through following professional skill: gather accurate information on the requirements of the customer, create conceptual design, confirm the customer's objectives for the extraction of the essential oils from the aromatic crops.,. Job Holder shall standardize the process parameters for the extraction of the essential oils from the aromatic crops and separations of the chemical constituents from the essential oils by fractionation techniques. Job holder shall able to define the quality of the essential oils / aroma chemical using the analytical techniques. In the qualification job holder shall provide Creative solutions the abstract problems which arises during the processing of the aromatic crops for the extraction of the essential oils . Job holder shall Undertake self-study to solve the problems encountered during the project through data collection, identification of problem, defining the problem, by identifying parameters affecting on the performance and by using different Engineering Research Methodologies while doing so job holder shall demonstrates intellectual independence to	Level 5
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NSQF QUALIFICATION FILE

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NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Core skill	• Use basic health and safety practices at the workplace • Work on project • Develop entrepreneurship skills • Communicate effectively	Job holder shall work on project where he/she shall gather accurate information on project concept and requirements, Confirm the project objectives, preparation of conceptual plan, selection of process for the extraction of the oils, identify problems with work planning, procedures, output and behavior and their implications and plan for problem solving, communicate problems appropriately to others. identify sources of information and support for problem solving, seek assistance and support from other sources to solve problems, Prepare cost estimate of the project, Prepare design & development project plan with timeline and responsibilities of self and team members, economy factor calculation	Level 6

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	•	Involvement in Departmental procedural system for project , Responsibility of task completion, Validate the project outcomes with specified acceptance criteria, interpret Assembly Assign Process & Work Planning, identify Individual job operations, prepare process plan, arrange sequence of operations in logical manner, identification of Priorities in the project for timely completion of the project, Determine acceptance criteria for the required quality specified in the project, Select the required measuring methods/instruments to obtain desired quality, Try out, Inspect Quality of project, Keep record of rejection and rework and undertake self-study to eliminate the same in future project Job holder shall use protective equipment while working on computers and during working on shop floor, wear helmet, state the name and location of people responsible for health and safety in the workplace, state the names and location of documents that refer to health and safety in the workplace, identify job-site hazardous work and state possible causes of risk or accident in the workplace like slippery floor, carry out safe working practices while dealing with hazards to ensure the safety of self and others like disposal of cutting oil, state methods of accident prevention in the work environment of the job role, state location of general health and safety equipment in the workplace, inspect for faults, set up and safely use steps and ladders in general use, work safely in and around trenches, elevated places and confined areas, lift heavy objects safely using correct procedures, apply good housekeeping practices at all times, use the various appropriate fire extinguishers on different types of fires correctly, participate in emergency procedures Job holder shall develop entrepreneurship skill like Meaning and importance of entrepreneurship, Motivations and reasons to start business, Entrepreneurial process, Entrepreneurship framework, Role of information in opportunity recognition, Meaning and importance of start-up factors of entrepreneurship, Forms of ownership, Job design, Financial planning, Entrepreneurship in small firms, Intellectual property rights, Innovation as an important tool for entrepreneurship.	
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NSQF QUALIFICATION FILE

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NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Responsibility	Work independently and guide team members with full responsibility of output of group and development	Job holder shall work independently during analyzing requirements of the component, concept generation and finalizing the requirements with the customer. After receiving confirm order from the customer job holder shall prepare design and development plan with time line and with job responsibilities of team members like preparation of bill of material, preparation of plant for the extraction and will have full responsibility of output of group. Job holder shall encourage team members for continues learning and development by time to time discussing with them various issues of project like tool / die suitability to specified machine, new development in machines, selection of material, new development in the materials and manufacturing processes. Job holder shall follow work standard, specific norms and procedures laid down by the organization. Job holder shall develop moral, values and ethical practices in business operation.	Level 6

NSQF QUALIFICATION FILE

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SECTION 3 **EVIDENCE OF NEED**

What evidence is there that the qualification is needed?

The various aroma based industries and pharmaceutical manufacturing companies are in need of natural essential oil they utilized it as a raw materials in various formulations/products. The pharmaceutical, cosmetics and perfumery industries are based on essential oil mostly they distilled essential oils as raw materials from aromatic crops. Due to lack of good extraction techniques, the yield of essential oil is reduce day by day and, therefore the qualification of process plant operator for distillation or extraction of essential oils are in need in essential oil and pharma industries. If this course is approve, the skilled manpower may be produced who has good knowledge of distillation and extraction of essential oils from aromatic crops with maintenance skill of units.

What is the estimated uptake of this qualification and what is the basis of this estimate?

About 500 skilled manpower per year is needed according to the literature/published source survey and demand of aroma-based industry.

What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

We have compared the qualification available for this level training is not duplicating the existing qualification in NSQF.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

We provide the data of intake, feedback, assessment records, RPL and employment detail of the participants and discussion with industry.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

NSQF QUALIFICATION FILE

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SECTION 4 **EVIDENCE OF PROGRESSION**

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Qualifying trainee will obtain an FFDC “Post Diploma in Aroma Process & its Management “. After 2 year of experience give the opportunities to the trainees to work as Process plant Supervisor as a career progression with this position and experience of 3 years gives career scope of Plant Manager. Also he/she can become an entrepreneur in this sector after getting 3 year of experience.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.