Model Curriculum

QP Name: Fundamentals of Artificial Intelligence (AI) in Retail

QP Code: RAS/MCr-0001

QP Version: 1.0

NSQF Level: 4

Model Curriculum Version: 1.0

Retailers Association's Skill Council of India,703-704 Sagar Tech Plaza - A, Andheri-Kurla Road, Sakinaka Junction, Sakinaka, Andheri (E) Mumbai-400072.

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Training Parameters

Sector	Retail
Sub-Sector	Retail operations; E-Commerce
Occupation	Store operations; Sales operations
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NA
Minimum Educational Qualification and Experience	• 12th Grade pass or equivalent • 10th Grade pass with 3 years of relevant experience • Previous relevant Qualification of NSQF Level 3.0 with 3 -year relevant experience • Previous relevant Qualification of NSQF Level 3.5 with 1.5-year relevant experience
Pre-Requisite License or Training	NIL
Minimum Job Entry Age	18 years
Last Reviewed On	27/08/2024
Next Review Date	27/08/2027
NSQC Approval Date	27/08/2024
QP Version	1.0
Model Curriculum Creation Date	23/01/2024
Model Curriculum Valid Up to Date	27/08/2027
Model Curriculum Version	1.0
Minimum Duration of the Course	30 hours
Maximum Duration of the Course	30 hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Elucidate core principles and fundamental concepts of Artificial Intelligence (AI)
- Outline the various applications of AI in retail.
- Identify the role of data in unleashing the power of AI.
- Explain the role AI can play in personalising the customer shopping experience.
- Identify the benefits of application of AI in various functions of retail operations management.
- Discuss the ethical and privacy considerations in implementing AI based interventions.
- Analyse real-world examples and case studies of successful AI implementations in the retail sector.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Module 1: Basics of AI	**01:00**	**02:00**	-	-	**03:00**
Module 2: AI Applications in Retail	**02:00**	**02:00**	-	-	**04:00**
Module 3: Customer Insights and Personalization	**02:00**	**03:00**	-	-	**05:00**
Module 4: Role of AI in Inventory and Supply Chain Management	**03:00**	**06:00**	-	-	**09:00**
Module 5: Pricing Strategies and AI	**03:00**	**00:00**	-	-	**03:00**
Module 6: Customer Service and Chatbots	**02:00**	**02:00**	-	-	**04:00**
Module 7: Ethical and Privacy Considerations	**01:00**	**00:00**	-	-	**01:00**
Module 8: Future Trends	**01:00**	**00:00**	-	-	**01:00**
Total Duration	**15:00**	**15:00**	-	-	**30:00**

Module Details

Module 1: Basics of Artificial Intelligence (AI)

Terminal Outcomes:

- Define artificial intelligence (AI) and its fundamental concepts.
- Explain the difference between narrow (or weak) AI and general (or strong) AI.
- Describe how machine learning is a subset of AI.
- Demonstrate the relationship between AI and machine learning through illustration and presentations.

Duration: 01:00	*Duration: 02:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define artificial intelligence (AI) and its core concepts and fundamental principles. • List various types of AI applications. • Distinguish between Narrow AI and general AI. • Discuss the relationship between AI and machine learning. • Explain how machine learning functions as a crucial subset of AI.	• Prepare and presentation the history and evolution of AI. • Review and summarize an article or research paper on machine learning applications in retail.
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, and duster	
Tools, Equipment and Other Requirements	

Module 2: Applications of AI in Retail

Terminal Outcomes:

- Articulate the applications and uses of AI in organised retail.
- Describe the concept of data mining and how it can uncover insights from retail data
- Show practical applications of AI in data mining in retail to demonstrate understanding through research and presentation

Duration: 02:00	*Duration: 02:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Outline the role of AI in the retail sector. • Discuss the role of AI in recommendation systems for product suggestions in the retail industry. • Discuss various ways artificial intelligence (AI) is being used in the retail industry, with a focus on demand forecasting, inventory control, pricing optimization, and customer service. • Explain the role of data in AI applications within the retail sector. • Explain the concept of data mining, and its ability and the techniques to uncover meaningful insights of retail data	• Research and present a real-world example of how a retail company has used data mining to uncover significant business insights performance.
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, and duster	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop	

Module 3: Customer Insights and Personalization

Terminal Outcomes:

- Explain how AI is used to analyse customer data and create personalized shopping experiences.
- Discuss the concept of customer segmentation and how it can be enhanced with AI.
- Research and analyze a retail case study where AI-driven customer segmentation has been implemented.

Duration: 02:00	*Duration: 03:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the concept of customer segmentation and its significance in organised retail. • Explain the principles and elements of artificial intelligence (AI) that aid in analyzing customer data to create personalized shopping experience. • Discuss the impact of AI-driven customer data analysis and segmentation on the overall shopping experience, considering factors such as customer satisfaction and loyalty.	• Research and present a retail company's successful customer segmentation strategy and outcomes. • Prepare a report on key AI principles used in customer data analysis with industry examples. • Analyze and present the impact of AI-driven segmentation on customer satisfaction in a retail case study
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop	

Module 4: Role of AI in Inventory and Supply Chain Management

Terminal Outcomes:

- Explain how AI helps in optimizing inventory management and supply chain operations.
- Explain how AI can be used to enhance productivity in logistics and delivery processes.
- Research and analyze a case study of a retail company that utilizes AI for inventory management and supply chain optimization

Duration: 03:00	*Duration: 06:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the aspect of AI that contributes towards optimizing inventory management and supply chain operations. • Discuss the impact of AI on efficiency, cost-effectiveness, and overall supply chain performance. • Discuss the role of predictive analytics in the context of stock management. • Discuss the impact of AI-driven inventory optimization and predictive analytics on stock efficiency, considering factors such as cost reduction, improved order fulfillment, and enhanced customer satisfaction. • Describe the role of AI in improving Logistics and delivery processes in retail. • Describe the ways through which supply chain improvement is achieved through applications of AI Technologies. • Discuss the use of AI in route optimization and demand forecasting. • Describe the several ways through which the AI address challenges such as inventory management, order fulfillment, and delivery scheduling.	• Prepare a report by analyzing a case study of a retail company using AI for inventory management and supply chain optimization, identifying key AI technologies used and their benefits. • Prepare a report comparing traditional stock management methods with AI-driven predictive analytics in a retail scenario. • Analyze various retail scenarios where AI is used to tackle inventory management, order fulfillment, and delivery scheduling and submit a report
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop	

Module 5: Pricing Strategies and AI

Terminal Outcomes:

- Describe how AI can be used to set dynamic and competitive pricing strategies.
- Explain the concept of price elasticity.
- Discuss how AI can optimize pricing based on demand.

Duration: 03:00	*Duration: 00:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the concept of dynamic pricing and the use of artificial intelligence (AI) in setting pricing strategies. • Explaining the use of AI technologies that contribute towards setting competitive pricing strategies. • Define the concept of price elasticity. • Explain the concept of price elasticity in the context of pricing strategies. • Describe various AI techniques used to optimize pricing based on demand fluctuations. • Discuss the impact of AI-driven pricing strategies on efficiency, revenue, and customer satisfaction, considering factors such as responsiveness to market changes and competitiveness.	
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop	

Module 6: Customer Service and Chatbots

Terminal Outcomes:

- Discuss the role of AI-powered chatbots and virtual assistants in providing customer support.
- Explain the benefits of chatbots in handling customer inquiries and resolving issues.
- Evaluate an AI-powered chatbot implemented in a retail customer support setting

Duration: 02:00	*Duration: 02:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the role of artificial intelligence (AI) in customer support, specifically focusing on the contributions of AI-powered chatbots and virtual assistants in enhancing customer interactions and support services. • Explain the functionalities and capabilities of AI-powered chatbots and virtual assistants. • Discuss the benefits and limitations of using AI in addressing customer concerns. • Discuss the impact of AI-powered chatbots and virtual assistants on customer support services, considering factors such as response time, accuracy, and customer feedback.	• Write a detailed report summarizing the chatbot's effectiveness, including metrics on resolution rates, customer satisfaction, and workload reduction.
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop, access to chatbots online	

Module 7: Ethical and Privacy Considerations

Terminal Outcomes:

- Discuss the ethical concerns related to AI in retail, such as data privacy and bias in algorithms.
- Explain the importance of transparency and fairness in AI applications.

Duration: 01:00	*Duration: 00:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the ethical concerns associated with the integration of AI in the retail sector. • Explain the ethical principles to address concerns related to AI in retail. • Explain the importance of data privacy in AI applications. • Explain the importance of transparency in AI applications, emphasizing the need for clear communication and fairness in AI applications. • Discuss the ethical impact of AI applications in retail, considering factors such as fairness, transparency, and the protection of user rights.	
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop	

Module 8: Future Trends

Terminal Outcomes:

- Discuss the emerging trends in AI for retail in,
    - use of computer vision in cashier less stores and
    - AI-powered virtual try-ons.
- Discuss the potential for AI to revolutionize the retail industry in the future.

Duration: 01:00	*Duration: 00:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the emerging trends in AI for retail industry. Examples: cashier less stores and AI-powered virtual try-ons. • Explain the application of computer vision in cashier less stores, showcasing how AI can enable hassle free shopping experiences without the need for traditional checkouts. • Explaining the use of AI-powered virtual try-ons in retail, showcasing how these technologies enhance the customer experience by allowing virtual exploration of products before purchase. • Discuss strategic approaches for integrating AI technologies into various aspects of retail operations. • Discuss the potential future developments and advancement in AI for retail.	
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards	
Tools, Equipment and Other Requirements	
Hi-speed internet connection, Computer/Laptop	

Annexure

Trainer Requirement

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
For Trainers						
Graduate/ Diploma in Computer Science.		5	Implementation of AI/ Machine Learning and Data Science in Sales and Service operations	-	-	-
OR						
Graduate/ Diploma in Computer Science.		-	-	5	AI/ Machine Learning and Data Science	-

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Micro credentials: "Fundamentals of Artificial intelligence (AI) in Retail "mapped to Micro-credential: with minimum score of 80%.	Recommended that the Trainer is certified for the micro credential Fundamentals of Artificial Intelligence (AI) for Retail: "Trainer (VET and skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". The minimum accepted score is 80%.

Assessor Requirements

Assessors Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
For Assessor						
Graduate/ Diploma in Computer Science.		5	Implementation of AI/ Machine Learning and Data Science in Sales and Service operations	-	-	-
OR						
Graduate/ Diploma in Computer Science.		-	-	5	AI/ Machine Learning and Data Science	-

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Micro credentials: "Fundamentals of Artificial intelligence (AI) in Retail "mapped to Micro-credential: with minimum score of 80%.	Recommended that the Assessor is certified for the micro credential Fundamentals of Artificial Intelligence (AI) for Retail: "Assessor (VET and skills)", mapped to the Qualification Pack: "MEP/Q2701, v2.0". The minimum accepted score is 80%.

Assessment Strategy

This section includes the processes involved in identifying, gathering and interpreting information to evaluate the learner on the required competencies of the program.

Assessment will be done by RASCI-affiliated assessment agencies. The assessors / proctors will be trained & certified by SSC through Training of Assessors / Proctors program. The emphasis will be on practical skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME), as per the assessment criteria mentioned in the Qualification Pack. The assessment papers are also checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement, etc. The assessment sets are then reviewed by SSC official for consistency.

Testing Tools

- Carry out assessments under realistic work pressures that are found in the normal industry workplace.
- Ensure that the range of materials, equipment and tools that learners use are current and of the type routinely found in the normal industry workplace environments.

Assessment Type	Formative or Summative	Strategies
Theory	Summative	(Web proctoring/Paper pencil/Tab based): Written test will be Multiple Choice Questions (MCQ) based. In case of availability of internet connectivity, the test will be hosted on web (online). In case of absence of internet connectivity, the test will be administered in offline mode on a tablet or via paper pencil.
Practical	Summative	This test will be administered through online digital assessment platform in the form of situation based / case based multiple choice questions

The assessment results are backed by evidences collected by assessors.

1. The assessor / proctor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the in charge / Head of the Training Centre.
2. The assessor / proctor needs to verify the authenticity of the candidates by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.

3. The assessor / proctor needs to punch the trainee's roll number on all the evidences.
4. The assessor / proctor can take a photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.
5. The assessor also needs to carry his/her photo ID card.

The assessment agencies are instructed to hire assessors / proctors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understandand be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards