# Preparation Guide for Certification Exam 70-489

Microsoft certification exam **70-489: Developing Microsoft SharePoint Server 2013 Advanced Solutions** covers SharePoint 2013 topics for both SharePoint on-premises and SharePoint Online in Office 365. The exam tests the skills of developers who need to design, develop, test and deploy SharePoint solutions and SharePoint apps in a SharePoint 2013 environment. This exam provides credit toward Microsoft Certified Solutions Expert (MCSE). The following outline should be used to prepare for this exam.

#### Design and implement search (15–20%)

Query search

* This objective may include but is not limited to: build search queries using FAST Query Language (FQL) and Keyword Query Language (KQL), execute search queries using client-side object model (CSOM), Web Services, and REST.

Customize search results

* This objective may include but is not limited to: create custom result sources, create display templates, create result types, create custom refiner definitions, implement query rules.

Customize content processing

* This objective may include but is not limited to: feed external content types, implement content processing extensions (entity extraction), configure out-of-the box content processing, create content mappings.

#### Implement Business Connectivity Services (BCS) (10–15%)

Create a model

* This objective may include but is not limited to: optimize queries for performance and throttling, use naming conventions, use batching, create filters, implement methods, create associations.

Create external content types

* This objective may include but is not limited to: use SQL data sources, use Windows Communication Foundation (WCF) Web Services, use OData, use .NET connector.

Implement authorization and authentication

* This objective may include but is not limited to: use pass-through, use BCS Identity and User Identity, use a custom model.

Create custom connectors

* This objective may include but is not limited to: implement methods (including Search), implement security trimming, implement configuration properties, implement caching, implement external event receiver.

Access BCS data

* This objective may include but is not limited to: use BCS Web Parts, use BCS data in workflows, use BCS CSOM, use the server-side object model, use BCS REST.

Implement client-side BCS

* This objective may include but is not limited to: use caching, use Microsoft Office apps, use Microsoft Visual Studio Tools for Office, use SQL replication, implement authorization and authentication.

#### Implement user profiles and customize social workload (15–20%)

Manage user profile properties

* This objective may include but is not limited to: create and update user profile properties, update privacy filters, map properties to external data, use managed metadata term sets, update profile picture.

Manage feeds

* This objective may include but is not limited to: use CSOM to follow documents, people, sites, get feeds, create posts, and manage like, reply, mention, tag, link, add pictures.

Access user profile data

* This objective may include but is not limited to: use CSOM, use the object model, use REST, use Web Services.

#### Implement Enterprise Content Management (ECM) and Web Content Management (WCM) (15–20%)

Implement a multilingual site

* This objective may include but is not limited to: submit a page or batch of pages for translation, publish pages, create source and target labels, create channels, implement multi-language site navigation.

Implement e-discovery

* This objective may include but is not limited to: create a new hold, integrate with Microsoft Exchange Web Services, specify content sources and Search criteria, export discovery sets, manage permissions for hold.

Implement Search Engine Optimization (SEO)

* This objective may include but is not limited to: create a site map, customize a site map, maintain SEO configuration properties, maintain robots.txt file, maintain SEO properties on term.

Implement content management

* This objective may include but is not limited to: create information management policies, create content organizer rules, create document sets, create document ID providers.

Implement a publishing page

* This objective may include but is not limited to: add field controls to a page layout, add web parts to a page layout, create a publishing page layout, inherit content types.

#### Design for performance and troubleshooting (15–20%)

Design solutions to handle a high-traffic site

* This objective may include but is not limited to: combine images, implement caching, minimize number of queries, optimize JavaScript loading, use Content Delivery Networks (CDNs), create a scalable aggregator.

Design client applications for performance

* This objective may include but is not limited to: leverage health score rules, optimize number of batch server requests, use client-side cache, minimize amount of data requested.

Monitor and mitigate performance and scalability issues

* This objective may include but is not limited to: diagnose application stability issues, debug the server side and app code on the client side, create application diagnostics, measure and test application performance.

#### Implement Managed Metadata Service (MMS) (15–20%)

Manage term sets

* This objective may include but is not limited to: import and export term sets, create multilingual labels, reuse terms, manage term properties, perform translation, create groups, and assign permissions.

Create solutions by using MMS

* This objective may include but is not limited to: use Profile Pages, use the Product Catalog, use cross-site publishing, integrate with Search, implement metadata-driven navigation.

Use an MMS API

* This objective may include but is not limited to: use CSOM in client applications, use REST in client applications, use managed fields, use server-side object model.