CMT LEVEL I CURRICULUM

2021 CHARTERED MARKET TECHNICIAN EXAM

AN INTRODUCTION TO TECHNICAL ANALYSIS
## 2020 Curriculum

### Level I. An Introduction to Technical Analysis

### Section I: Theory and History of Technical Analysis

1. **The Basic Principle of Technical Analysis — The Trend**
   - Define what is meant by a trend in technical analysis
   - Explain why determining the trend is important to analysts
   - Identify primary, secondary, short-term, and intraday trends
   - Describe the basic beliefs behind the art of technical analysis
   - Define “fractal” as used in describing price action

2. **Dow Theory**
   - Describe the history of the development of Dow Theory
   - Discuss the basic principles of Dow Theory
   - Identify the three basic types of trends identified in Dow Theory as defined by time: primary, secondary and minor
   - Identify the three basic trend patterns of all prices: upward, downward and sideways
   - Describe the “ideal market picture” according to Dow Theory
   - Express the concept of confirmation in Dow Theory
   - Explain the role of volume in Dow Theory

### 2021 Curriculum

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   - Explain the role of volume in Dow Theory
3. History and Construction of Charts

   List advantages of reviewing price information in chart format
   Review the data points required to construct line, bar, and candlestick charts
   Describe how to construct line, bar, and candlestick charts
   Explain the differences between arithmetic and logarithmic scales and their uses

*NEW Lesson*

3. Introduction to Charts Part 1

   Explain how a technical analyst uses charts to summarize price action
   Discuss the advantages of reviewing price information in chart format
   Identify the four basic price points represented in charting
   Describe how to construct line, bar, and candlestick charts
   Identify the components of individual candles - real body and shadows
   Review the information available in line, bar, and candlestick charts
   Describe what is meant by “data interval”
   Define “range” as it applies to prices on a bar or candlestick
   Define “fractal” and how it relates to chart construction

*NEW Lesson*

4. Introduction to Charts Part 2

   Identify the variables plotted on the axes in a conventional price chart
   Explain the differences between arithmetic and logarithmic scales and their uses
   Describe typical methods for displaying volume in a price chart
   Discuss volume as an alternative to time on the x-axis of a chart
### 2020 Curriculum

**Section II: Charts, Trends, and Patterns**

<table>
<thead>
<tr>
<th>Lesson</th>
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</tr>
</thead>
<tbody>
<tr>
<td>4. Trends — The Basics</td>
<td>Explain why trend identification is important to achieve profits. Recognize an uptrend, a downtrend, and a trading range. Describe the concept of support and resistance and the underlying psychology. Identify trends using most common methods. Recall how significant reversal points are identified. List general rules for trendlines.</td>
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<td>7. Moving Averages</td>
<td>Describe the basic principle of moving averages. Explain how to calculate simple, linearly weighted and exponentially smoothed moving averages. Identify trends and signals with moving averages. Describe and interpret Directional Movement Indicators. List common envelope, channel and band indicators and their characteristics.</td>
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</table>
Section II: Charts, Trends, and Patterns

7. Bar Chart Patterns
   - Define what is meant by “chart patterns”
   - List common characteristics of patterns
   - Discuss opposing viewpoints over whether patterns exist
   - Describe the influence of computer technology on price-pattern study
   - Identify classic chart patterns such as triangles and double and triple tops and bottoms
   - Identify rounding chart patterns such as head-and-shoulders
   - Identify “half-mast” chart patterns such as flags and pennants

8. Short-Term Patterns
   - Locate reversals in longer-term trends using short-term price patterns
   - Describe the types of gaps that occur on price charts and their significance
   - Recognize wide-range and narrow-range bars and their implications for volatility
   - Identify one and two-bar reversal patterns
   - Identify common candlestick patterns and their significance within a trend

*Lesson # Change*

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<tr>
<td>10</td>
<td>Introduction to Volume Analysis</td>
<td>Define volume, Define open interest, Define the terms related to volume as discussed in this chapter, Describe how volume provides information on liquidity and participation, Describe how volume adds perspective to price action</td>
</tr>
<tr>
<td>11</td>
<td>Volume: The Technician’s Decryption Device</td>
<td>State the implications of volume changes for price trends, Identify trends in price and volume in a chart, Describe how volume is displayed in a Volume-at-Price chart, Define VWAP, Describe Equivolume charts, Explain how open interest rises and falls, State the implications of open interest changes for price trends</td>
</tr>
<tr>
<td>12</td>
<td>An Introduction to Volume Indicators</td>
<td>List the seven types of volume indicators, Describe the major differences among the types of volume indicators</td>
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</table>
Section II: Charts, Trends, and Patterns

9. Confirmation

- Define terms including overbought, oversold, failure swings, divergence and reversal
- Identify the methods of plotting volume information on price charts
- Explain general rules for interpreting volume data
- List the major indexes and oscillators designed to use volume as confirmation
- Describe open interest and how it might be used for confirmation
- Explain the concept of momentum in price action
- Identify characteristics and applications of indexes and oscillators such as MACD, RSI and stochastics

10. Candlestick Charting Essentials

- Describe strengths and limitations of candle charts
- Identify the components of individual candle lines - real bodies and shadows
- Explain how candles graphically depict the high, low, open, and close of a trading period
- Identify candle confirmations of support and resistance

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11. **Point-and-Figure Charting**

- List three important characteristics of point-and-figure charts
- Define “box size” and “reversal”
- Describe how point-and-figure charts are constructed
- Explain the importance of box size to the sensitivity of point-and-figure charts
- Review the construction of various box size and reversal point-and-figure charts
- Identify common point-and-figure patterns
- Explain how trendlines are drawn on point-and-figure charts
- Locate basic signals on a point-and-figure chart
- Describe the concept of price targets attained by using a horizontal or vertical count on a point-and-figure chart

**2021 Curriculum**

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### 12. Introduction to the Wave Principle

- Describe the basic operating theory of the Wave Principle
- Define motive waves and corrective waves
- Identify types of motive waves such as impulse, extension and diagonal
- Identify types of corrective waves such as zigzag, flat and triangle
- Label waves using standard Elliott Wave notation
- Describe Fibonacci relationships as applied to Elliott Wave analysis

### 13. The Anatomy of Elliott Wave Trading

- Match the waves as labeled on a chart to the description in the text
- List the waves considered the most advantageous to trade
- Describe trade signals associated with various wave patterns

### 14. Measuring Market Strength

- Explain the concept of divergence
- Define market breadth
- Identify signals of change in market breadth using the advance-decline line
- Describe other measures of internal stock-market strength such as McClellan’s calculations
- Explain the use of volume in measuring stock-market strength
- Identify measures of stock-market strength from new high and new low data
- Describe measures of stock-market strength based on the number of stocks priced above their moving average

*Lesson # Change*
Section III: Advanced Concepts in Charting and Trend Analysis

15. Foundations of Cycle Theory
   - Name the two types of cycles
   - Identify the three defining characteristics of a cycle
   - List and define Hurst's seven Principles of Commonality
   - Define a composite wave
   - Identify left and right translation
   - Describe a dominant cycle
   - Recall the tools which aid in cycle identification

16. Basics of Cycle Analysis
   - Explain how the annual cycle conforms to cycle theory
   - Describe two methods of detrending price data
   - Restate common seasonal tools
   - Memorize notable economic cycles and their periods
   - Recall some sequences/nonlinear cycles

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### 2020 Curriculum

**Section IV: Markets and Volatility**

#### 17. Markets, Instruments, Data, and the Technical Analyst
- Name four asset classes amenable to technical analysis
- List five tradeable instruments that a technician is likely to employ
- Describe data-handling issues with which a technician should be familiar

#### 18. Equities
- Define equity securities and primary data types
- Describe the benefits of equities for investors
- Identify the effect of corporate actions on price data
- Classify sectors, capitalization, and other ways to segment the market

#### 19. Indexes
- Identify major global equity indexes
- Name common non-equity indexes used by technical analysts
- Explain weighting methods used in major indexes
- Define “survivorship bias”

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### 20. Fixed Income/Bonds
- List the major types of issuers of debt securities
- Identify the basic terms of a debt instrument: issuer, coupon, maturity
- State the ways in which debt prices are expressed
- Explain the relationship between price and yield
- Define “yield curve”
- Describe the importance of US government debt in the pricing of other debt securities: “yield or credit spread”

### 21. Futures
- Explain the purpose of futures markets
- Classify various futures markets as industrial, agricultural, financial, etc.
- List the major terms of a futures contract
- Define open interest in futures
- Describe challenges technicians face when using futures market data

### 22. Exchange-Traded Products (ETPs)
- Define an exchange-traded product
- Review differences between exchange-traded funds (ETF) and exchange-traded notes (ETN)
- Describe the uses for leveraged ETPs

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**2021 Curriculum**

### Section IV: Markets and Volatility

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**2021 Curriculum**

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#### 23. Foreign Exchange (Currencies)
- Identify the base and quote currencies in a pair
- Classify currency pairs as "major" or "cross"
- Discuss the impact on technical analysis of the "dealer market" system of currency trading
- Explain the data used in building currency charts
- Describe cryptocurrencies

#### 24. Options
- Explain the purpose of options markets
- List the major terms of an option contract
- Describe "the Greeks"
- Define implied volatility

#### 25. Understanding Implied Volatility
- Explain the difference between historical and implied volatility
- Describe the concept of put-call parity
- Discuss how implied volatility may be used to estimate price movement
- State how to calculate single-day implied volatility

#### 26. About the VIX Index
- Describe the components of the VIX index
- Explain the implications of a rising or falling VIX index
- State how to calculate expected 30-day market movement

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</tr>
</thead>
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27. What is the Efficient Market Hypothesis

- Identify the basic concept of the Efficient Market Hypothesis (EMH)
- Describe the three forms of the EMH
- Explain the characteristics of stock prices as a martingale
- Describe how randomly generated output can appear non-random and how that might relate to asset prices and returns
- Identify the three areas in which behavioral finance challenges the EMH

28. The EMH and the “Market Model”

- Describe the basic components of the CAPM model
- Identify valid criticisms of the CAPM model

29. The Forerunners to Behavioral Finance

- Explain momentum strategies and mean-reversion strategies
- Define the general concept of value investing
- Describe why value investing is similar to a mean-reversion
- Explain how value investing (Graham and Dodd) conflicts with the EMH

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<td>Explain “arbitrage”</td>
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<td>Describe “noise” vs. “information”</td>
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<td>Define “noise trader”</td>
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<td><strong>31. Noise Traders as Technical Traders</strong></td>
<td>Explain why technical traders are considered a specific type of noise trader</td>
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<td>Describe the actions of technical traders as noise traders in the context of market valuation</td>
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<td>Discuss how the Adaptive Market Hypothesis reconciles the EMH with technical and behavioral factors</td>
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<td><strong>33. Market Sentiment and Technical Analysis</strong></td>
<td>Define “sentiment” as it relates to financial markets</td>
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<td>Discuss the importance of the “crowd”</td>
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<td>Describe the challenges of using sentiment indicators</td>
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34. Sentiment Measures from Market Data
   - Describe VIX as a sentiment measure
   - Explain the use of options volume and open interest as sentiment indicators
   - Describe the use of futures open interest in gauging sentiment
   - Identify the three primary groups in the Commitments of Traders report
   - Define short interest
   - Explain insider activity as a sentiment indicator

35. Sentiment Measures from External Data
   - Describe the use of news and advisories as sentiment measures
   - Explain the concept of contrary opinion
   - Indicate how mutual fund cash and other funds measures are used to gauge sentiment

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Section VI: Basic Statistics for the Technical Analyst

36. Introduction to Descriptive Statistics

- Describe the three most common measures of central tendency: mean, median, and mode
- Discuss alternative methods of calculating the mean and their uses
- Describe what is meant by “measures of dispersion”
- Explain two measures of dispersion: standard deviation and variance
- State the value of data visualization as a complement to descriptive statistics

37. Introduction to Probability

- Define probability
- Explain the impact of the law of large numbers on a series of outcomes
- Define random variable and the phrase “independent and identically distributed”
- Describe a normal probability distribution
- Identify skew and kurtosis

2021 Curriculum

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*Lesson # Change*

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### 2020 Curriculum

**Section VII: Perspectives on Technical Trading Systems**

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<thead>
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<th>38. Objective Rules and Their Evaluation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Describe objective and subjective methods in technical analysis</td>
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</tr>
<tr>
<td>Define “rule” as used in trading systems</td>
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<td>Explain binary rules as well as individual and multiple thresholds</td>
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<td>Identify traditional rules and inverse rules</td>
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<td>List the four key characteristics Ned Davis claims are common to successful investors</td>
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<td>Describe the importance of having plans to persevere through mistakes and losses</td>
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<td>Identify Ned Davis’ nine rules to consider when building a timing model</td>
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<td>Discuss the theory behind “contrary opinion”</td>
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40. The Model Building Process
   - Describe “internal” and “external” indicators
   - Explain the use of valuation indicators as sentiment measures
   - Describe the basic relationships of economic growth, Fed policy and money supply
   - Discuss the use of moving average signals based on “crossings” and “slopes”
   - Explain the use of price momentum and indicator momentum
   - Identify the problem of curve-fitting, or overoptimization

41. Relative Strength as a Criterion for Investment Selection
   - Define relative strength
   - Explain the value of relative strength in analyzing stock price movements
   - List several relative strength ratios that may be calculated
   - Identify some of the limitations of relative strength in investment decisions

*Lesson # Change*

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