```
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#include <Wire.h>

#define SCREEN_WIDTH 128
#define SCREEN_HEIGHT 64
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, -1);

// Pin Definitions
const int voltagePin = A0;   // ZMPT101B output
const int currentPin = A1;   // ACS712 output

// Calibration constants
float voltageCalibration = 5.0;   // Adjust this to match true voltage
float currentOffset = 2.5;       // 2.5V is mid-point for ACS712 at 0A
float currentSensitivity = 0.185; // For 5A version: 0.185V/A, 20A = 0.100, 30A = 0.066

void setup() {
 Serial.begin(9600);

 // OLED Init
 if (!display.begin(SSD1306_SWITCHCAPVCC, 0x3C)) {
  Serial.println(F("SSD1306 failed"));
  while (true);
 }
 display.clearDisplay();
 display.setTextColor(SSD1306_WHITE);
 display.setTextSize(1);
```

```
  display.setCursor(0,0);
  display.println(F("Wattage Meter Ready"));
  display.display();
  delay(1000);
}

void loop() {
  float voltage = readVoltage(voltagePin);
  float current = readCurrent(currentPin);
  float power = voltage * current;

  // Serial output
  Serial.print("Voltage: ");
  Serial.print(voltage);
  Serial.print(" V, Current: ");
  Serial.print(current);
  Serial.print(" A, Power: ");
  Serial.print(power);
  Serial.println(" W");

  // OLED output
  display.clearDisplay();
  display.setCursor(0, 0);
  display.print("Voltage: ");
  display.print(voltage, 1);
  display.println(" V");

  display.print("Current: ");
```

```
  display.print(current, 2);
  display.println(" A");

  display.print("Power: ");
  display.print(power, 1);
  display.println(" W");

  display.display();
  delay(500);
}

float readVoltage(int pin) {
  float raw = analogRead(pin);
  float volts = (raw / 1023.0) * 5.0;
  // Scale up based on voltage divider
  return volts * voltageCalibration;
}

float readCurrent(int pin) {
  int raw = analogRead(pin);
  float voltage = (raw / 1023.0) * 5.0;
  float current = (voltage - currentOffset) / currentSensitivity;
  return abs(current);
}
```